A. INSIDE BUS
10. Dome & Stepwell Lights

Inspection Procedures:	Repair (or note) if:	Out of Service if:
Dome and Stepwell Lights		
Check passenger compartment dome lights and driver's compartment dome lights (if equipped) for condition and operation.	Any lens is cracked, broken, or dirty (repair).	Any lens is broken or missing and light bulb or fixture is exposed.
	Any single dome light is not working (repair).	Two or more passenger dome lights are not working.
	Dome light switch is loosely mounted or rocker/knob is missing (repair).	
Check stepwell lights for condition and operation.	Stepwell light is on when door is closed (repair).	Stepwell light is not functioning.
		Stepwell light does not activate, when clearance lights are on and the service entrance door is open; or the stepwell light does not work according to Florida School Bus Specifications.
Check driver's compartment dome lights (if equipped) for condition and operation (starting September 1995).		Either driver's compartment dome light does not function.

A. INSIDE BUS
Service Door

11.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Operation		
Check service door assembly for operation, adjustment, condition, mounting, and fit.	Door does not seal properly or seals are damaged, ripped, or deteriorated (repair).	Door jams, binds, or will not open a minimum of 24 inches, or requires more than 25 lbs. of effort to open or close door. Glass has been replaced with plexiglass, is broken, or is cracked. Door glass is fogged more than one (1) inch in from border, or visibility through glass is poor. Door is equipped with a locking system that is not OEM factory approved. Door assembly is damaged, or mounting is loose. Door seals are not present. Door will not open or close completely.
	Door control doesn't move freely (repair). **(Continued on Next Page)**	Door does not operate (open and close) properly. Door operation requires excessive force (more than 25 lbs. of effort).

A. INSIDE BUS
Service Door

11.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
b. Control		
1) Check manual service door control and rod assembly for over-center or latching device, condition, and mounting.	Control, rod hardware, or mounting is loose (repair). Door control handle stops are not correctly adjusted.	Manual control will not lock over-center, or latching mechanism is inoperative.
2) Check air or vacuum powered service door control assembly for leaks, operation, insecure door in closed position, and emergency release.	Air or vacuum powered system leaks or needs adjustment (repair).	Air or vacuum door emergency release does not function, or control is broken. Air or vacuum door opens or closes at an excessive rate or opens too slowly. Air or vacuum door does not operate (open and close) properly or is insecure in the closed position.
c. Overhead Pad		
Check bus for pad that is a minimum three (3) inches wide, high density foam rubber padded safety cushion, mounted directly above the inside of the service door.	Pad is loose, or cover has minor rip(s) (repair).	Pad is missing or cover is severely ripped, exposing foam.

A. INSIDE BUS
12. Horns

Inspection Procedures:	Repair (or note) if:	Out of Service if:
Horn(s) Check for operation of both horns and for location and condition of horn switch.		Either horn is inoperative. Horns are not audible at 500 feet. Horn button is not mounted in OEM location. Horn button sticks, or horn button operates intermittently such as when steering wheel is rotated.

A. INSIDE BUS
13. Mirror Adjustment, Condition

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Rearview Check exterior rearview mirrors for specifications, condition, mounting, and adjustment.	Electrically controlled mirror is not operating properly (if applicable). **(Continued on Next Page)**	Any required rearview mirror is not present. Any mirror is cracked, broken, or loose in its frame. Either mirror is out of adjustment (does not give driver a clear view down to lower outside edge of rear tire at ground level, on both sides to the rear). Any mirror reflective surface is deteriorated. Any portion of mirror mounting system is loose, missing, or broken. Any mirror does not meet applicable specifications.

A. INSIDE BUS
13. Mirror Adjustment, Condition

Inspection Procedures:	Repair (or note) if:	Out of Service if:
b. Convex		
Check convex crosswalk and side-view mirrors for specifications (correct type, size, and location) condition, mounting, and adjustment.	Electrically controlled mirror is not operating properly (if applicable).	Any required convex mirror is not present. Any mirror is cracked, broken, or loose in its frame. Any mirror reflective surface is deteriorated. Any portion of mirror mounting system is loose, missing, or broken. Any mirror does not meet applicable specifications.
NOTE: "No blind-spot" mirror system meeting new performance specifications is required starting November 1990 (e.g., Bus Boy-type).		"No blind-spot" convex crosswalk mirrors do not provide driver with indirect vision (of the area at ground level) from the front bumper forward, and the entire width of the bus, to a point where the driver can see by direct vision.

(Continued on Next Page)

A. INSIDE BUS
13. Mirror Adjustment, Condition

Inspection Procedures:	Repair (or note) if:	Out of Service if:
		Convex mirror system does not provide driver with indirect vision of the area (at ground level) around the left and right front corners of the bus to include the tires and service entrance, on all types of buses, to a point where it overlaps with the rear vision mirror system.
c. Interior Check interior rearview mirror for size, condition, and mounting.		Interior rearview mirror is not at least 6" x 30" (except Type A1, which shall be a minimum of 50 square inches). Mirror does not have rounded corners and protected edges. Any portion of reflective surface is obstructed by stickers or other items or is deteriorated. Driver's view of images in mirror is not clear due to distortion or other causes. Mirror or mounting system is loose.

A. INSIDE BUS
14. Driver's Seat and Belt

Inspection Procedures:	Repair (or note) if:	Out of Service if:
Driver's Seat and Belt		
Check driver's seat and belt for specifications (type and adjustability), condition, mounting, and operation. Air suspension seat required on all air brake equipped buses starting September 1995.	Seat adjustment binds or is difficult to operate (repair). Seat adjustment is loose or adjustment hardware is missing (repair).	Driver's seat (non-air type) will not adjust four (4) inches fore and aft, four (4) inches up and down, or back will not tilt (except Type A shall be manufacturer's standard).
For new buses manufactured starting 2009, driver's seat belt webbing is to be bright orange or lime green in color.	Seat upholstery or foam is deteriorated or damaged (repair).	Wrong type of seat is installed (high back seat with cloth insert required starting with Revised 1989 Specifications).
	Seat bottom is loose in frame or mispositioned (repair).	Seat mounting is unstable, loose at floor, or seat mounting hardware is missing.
	Seat frame is exposed due to deterioration of upholstery or foam (repair).	Driver's seat belt is missing or of wrong type; shall meet or exceed: 1) Up to October 1982 - manufacturer's standard.
	Seat belt retractor covers or belt covers are damaged or loose (repair).	
	Seat air suspension system (if equipped) is leaking air (repair).	2) October 1982 to September 1987 - locking retractor for both portions of belt.
	Driver's seat belt webbing is incorrect color (not orange or lime green for new buses manufactured starting 2009).	3) October 1987 to October 1989 - automatic locking retractor on left side (locks when belt is pulled out).
	(Continued on Next Page)	

A. INSIDE BUS
14. Driver's Seat and Belt

Inspection Procedures:	Repair (or note) if:	Out of Service if:
		4) November 1989 to present- three (3) point shoulder harness/lap belt assembly. 5) Type A- manufacturer's standard all years. Mounting of retractors or belt guides are insecure. Seat belt webbing or stitching is frayed or damaged. Seat belt is routed improperly. Seat belt does not extend or retract freely. Seat belt buckle and tongue assembly does not latch or release properly.

A. INSIDE BUS
15. Passenger Seats

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Frames		
Inspect passenger seat frames for condition of welds, tubing and hardware, and for incorrect repairs.		Seat frames or welds are broken or cracked. Any seat frame is repaired using non-OEM approved hardware or reinforcements. Any seat frame hardware has been added or modified causing projections or sharp edges.
Check for presence of non-OEM seat frames.		There are any non-OEM seat frames installed.
Check for presence and condition of passenger seat belts on Type A buses built since April 1, 1977. (See page 53 for Type B, C and D buses built starting 2000.)		Type A buses built since April 1, 1977, must have a functional seat belt at each passenger position. (See page 53 for Type B, C and D buses built starting 2000.)
b. Mounting		
Inspect condition of passenger seat mounting.		Seat mounting at floor or seat rail is loose. Seat mounting fasteners are not OEM or equivalent.
	(Continued on Next Page)	

A. INSIDE BUS
15. Passenger Seats

Inspection Procedures:	Repair (or note) if:	Out of Service if:
c. Backs and Pads Inspect seat back and foam for specifications and condition. Requirements: 1) April 1977 to 2007: standard height padded seats with padding that conforms with Federal Motor Vehicle Safety Standards (FMVSS) 222 (i.e., OEM construction specifications). 2) 2007 to present: high-back padded seats (back height approximately 28 inches above seat bottom cushion) with padding that conforms to FMVSS 222, meeting OEM construction specifications.		Seat back and padding is of wrong type for specific manufacturer, year, and model bus (see the following requirements): Original thickness or density of any seat back foam around frame has been significantly reduced due to wear, deterioration, or other factors. Foam envelope is split, delaminated, or there is no padding between any portion of seat back frame and covering.

(Continued on Next Page)

A. INSIDE BUS
15. Passenger Seats

Inspection Procedures:	Repair (or note) if:	Out of Service if:
d. Cuts (and other upholstery damage).		
Inspect seat upholstery for condition and specifications.	Seat upholstery is cut, torn, or ripped less than six (6) inches (buses manufactured before November 1989) (repair).	Any portion of seat back or bottom upholstery is missing or repaired improperly, exposing foam.
NOTE: Required fire blocking seat material must be blue in color starting September 1995.	Any passenger seat upholstery is not blue in color (starting September 1995) (repair).	Seat upholstery is not properly repaired. Seat upholstery is cut, torn, or ripped more than six (6) inches (pre-November 1989 buses). Any upholstery has been replaced with non-fire blocking type (starting November 1989).
NOTE: Punctures where no material is missing and no foam is exposed shall not be cause for removing bus from service.		Any portion of seat bottom or back upholstery is cut, torn, or ripped (buses manufactured starting November 1989). Any fire-blocking seat fabric is repaired using procedures that are not approved (starting November 1989).
e. Bottoms		
1) Inspect seat bottoms for securement and condition.		Any seat bottom is not securely attached to its seat frame.

(Continued on Next Page)

A. INSIDE BUS
Passenger Seats

15.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
		Any seat bottom padding or cushion is significantly deteriorated or damaged. Any seat bottom has a protruding edge, or its plywood is broken.
2) Inspect flip-up type seat bottom at side emergency door (if equipped) for proper operation. Must have clear access to emergency door with a minimum aisle width of 12" (inches) between seats.		Any flip-up type seat bottom will not: raise or lower; stay in the raised position; or automatically retract properly when not occupied. Less than a clear minimum 12" (inch) aisle width to the side emergency door.
f. Modesty Panels and Stanchions (including Courtesy Panels). Inspect modesty panels (April 1977 or newer) crash barriers, and stanchions for presence, condition, specifications, mounting, and padding (as required).	Stanchion or pre-April 1977 modesty panel mounting is loose (repair). **(Continued on Next Page)**	Any bus manufactured April 1977 to present does not have a padded crash barrier in front of any passenger seat that does not have another seat in front of it (exception: pre-1990 Type A Bus) Stanchions on pre-April 1977 buses are not present or are broken. Right side modesty panel on post-April 1977 bus is missing. Stanchion padding is missing or is damaged so that metal is exposed.

A. INSIDE BUS
Passenger Seats

15.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
		Post April 1977-crash barrier is broken, not repaired properly or is mounted improperly. Crash barrier foam envelope is split or delaminated, or there is no padding between any portion of the barrier frame and covering. Original thickness or density of crash barrier foam around the frame has been significantly reduced due to wear, deterioration, or other factors. Any portion of the crash barrier upholstery is missing or not repaired properly, exposing foam. Crash barrier upholstery is cut, torn, or ripped. Any fire-blocking crash barrier fabric is repaired or replaced using unapproved procedures or non fire-blocking material (buses manufactured starting November 1989).
g. Optional Infant Seating (if equipped) starting September 1995. Check the condition and operation of the seating system.	**(Continued on Next Page)**	Seat does not operate or function properly according to manufacturer's operational procedures.

A. INSIDE BUS
Passenger Seats

15.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
h. Passenger Securement Devices (if equipped).		
All buses equipped with 2 or 3 point passenger securement systems shall be equipped with FMVSS 210 compliant seat frames and FMVSS 209 compliant belt assemblies in all passenger seating positions where passenger securement systems are installed.	Each two-part belt assembly (if equipped) is not separately color coded.	
Check type, condition, and operation of passenger securement devices.	Belts knotted, misrouted, retractor covers damaged or loose (repair).	Belts will not latch or stay latched, are the wrong type, missing, broken, mismatched, improperly installed, or excessively frayed.
i. Webbing Cutter (if equipped) with passenger securement devices.		No durable webbing cutter is present, or webbing cutter is broken or unusable.
Check for presence, proper type, proper mounting, and condition of a durable webbing cutter. Secure mounting must provide easy removal within easy reach of a seated, belted-in driver. (Starting October 1993).		Webbing cutter is not securely mounted in driver's compartment within easy reach of a seated and belted in driver, or cutter is difficult to remove. Wrong type of webbing cutter.

A. INSIDE BUS
16. Emergency Door/Windows/Hatches, and Passenger Check System

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Operation Inspect for operation and condition of rear emergency door and side door (buses built after November 1993), door latch, door hold-open feature (buses built after November 1993), door seal, emergency windows, and emergency exits/ventilators (roof hatches).	Rear door opens too far, damaging lights (repair). Any exit handle or latch mounting hardware is loose (repair). Mounting of guard for any inside emergency door latch handle is loose (repair). **(Continued on Next Page)**	Any emergency exit door, window, or hatch latch does not operate smoothly and easily when closing or opening the door, window, or hatch. Door hold-open feature (if equipped) does not function or secure door in the open position. Any exit handle, handle latch, or mounting hardware is missing. Inside emergency door latch handle guard is missing (rear door only). Any emergency exit does not open and close from the inside and outside easily. Any emergency door or exit is equipped with any type of a hasp, lock, or any other locking device, except for an OEM interlock system. Bus will start with any emergency door locked (OEM interlock system). Weatherstrip does not seal.

A. INSIDE BUS
16. Emergency Door/Windows/Hatches, and Passenger Check System

Inspection Procedures:	Repair (or note) if:	Out of Service if:
		Emergency window latch does not latch window securely or window does not open easily.
	Roof hatch seal is damaged or dislodged (repair)	Roof hatch does not open easily to full "emergency open" position.
	Roof hatch power ventilator (if equipped) does not work properly (note).	Roof hatch does not open to ventilation position.
b. Buzzers		
Check operation of warning buzzers for emergency door and emergency exit windows.	Buzzer gives false alarms (repair).	Buzzer warning system for emergency door, or any exit window, does not function, or is not audible in the driver's compartment. Buzzer operation is intermittent.
c. Labeling and Pad		
1) Inspect for label and operating instructions for emergency door, emergency windows, and emergency exit/ventilators (roof hatches), and hold-open device labeling (if applicable).	Hold-open device labeling (if applicable) is missing or not readable (repair). **(Continued on Next Page)**	All emergency exits are not clearly labeled "Emergency Door" or "Emergency Exit" on the inside and outside of the bus. There are no operating instructions on the inside of the emergency door.

A. INSIDE BUS
16. Emergency Door/Windows/Hatches, and Post-Trip Passenger Check System

Inspection Procedures:	Repair (or note) if:	Out of Service if:
	Any emergency hatch does not have clearly labeled operating instructions on the outside of the hatch (repair).	Any roof hatch does not have clearly labeled operating instructions on the inside of the hatch. Any emergency exit window does not have clearly labeled operating instructions on the inside of the window.
2) Inspect emergency door header pad.	Door pad is ripped or loose (repair).	Door pad is missing or has a protruding edge.
d. Post-Trip Passenger Check System (if applicable)		
Check for proper operation of post-trip passenger check system (required on buses manufactured starting 2005).	Post-trip passenger check system (if required) does not operate according to manufacturer's specifications, or is not working (repair).	

A. INSIDE BUS
17. Windshield, Side & Rear Windows

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Glass Cracks Inspect windshield and all windows for cracks and other damage.	**(Continued on Next Page)**	There are any cracks in the windshield in the driver's direct field of vision or any pock marks that obstruct the driver's vision. There is any crack in the windshield or any window greater than two (2) inches in length. There is any glass missing. There is any laminated windshield or laminated window glass broken or splintered that might cause injury when touched. There is any window to the side of the driver or behind the driver's location that is not laminated or tempered safety glass or Lexan or equivalent. There is any crack in non-laminated safety glass.

A. INSIDE BUS
17. Windshield, Side & Rear Windows

Inspection Procedures:	Repair (or note) if:	Out of Service if:
b. Fogging Check windshield and windows for fogging, reduced visibility, or improper level of tinting.	Glass fogged less than two (2) inches in from any outer edge (note). **(Continued on Next Page)**	The windshield or any window is fogged more than two (2) inches in from any outer edge. Any windshield or window fogging or clouding results in reduced visibility of a mirror. There is any reduced visibility through the windshield or any window(s) (other than fogging that is less than two (2) inches in from any outer edge). There is tinting on the windshield, or windows to either side of the driver, that is not 70% light transmitting or clearer. There are any tinted windows behind the driver's compartment that are not 28% light transmitting or clearer.

A. INSIDE BUS
17. Windshield, Side & Rear Windows

Inspection Procedures:	Repair (or note) if:	Out of Service if:
c. Latches and Window Operation		
Check latches and windows for condition and operation.	Any window latch is hard to operate, or any window does not move up and down freely (repair).	Any window latch is broken.
	Any window will not stay closed (repair).	Any window will not move (full travel) up and down.
		There is loose, damaged, or protruding window hardware in the passenger compartment.
d. Visor		
Check drivers sun visor for condition and operation.		Driver's sun visor is too tight or cannot be adjusted.
		Driver's sun visor is cracked, damaged, clouded, dirty, or will not stay in position or has unauthorized stickers.
		Sun visor is missing.

A. INSIDE BUS
18. Wheelchair Lift Door & Securement System

Inspection Procedures:	Repair (or note) if:	Out of Service if:
Wheelchair Lift, Door, and Securement System		
1) Operate lift through complete cycle and inspect for proper operation, condition, safety features, manual backup system, fluid seepage or leaks, mounting, barrier operation, warning light, buzzer operation, and overall mechanical condition. (See page 136 for definitions of fluid "seepage" and fluid "leaks.")	Dome light at inside lift area is inoperative (repair). Lift door or latch does not operate smoothly (repair). White light at exterior lift area (if originally equipped) is inoperative (repair). Lift control cable or wiring is damaged or routed improperly (repair). **(Continued on Next Page)**	Lift door warning buzzer or light does not operate. Lift door latches, weather stripping, or securement system is damaged or loose. Door switch (to prevent lift operation when the lift door is closed) or other safety override features do not function. Lift will not stay in the fully retracted position (falls against door). Lift safety chain or belt (if originally equipped) is damaged or missing, or lift safety interlock system is not operating according to manufacturer's specifications. Lift platform end barrier or handrail does not raise and lower reliably to the proper position. Barrier does not lock in position, or is damaged. Lift does not fold, unfold, raise, and lower properly, or jerks and/or binds.

A. INSIDE BUS
18. Wheelchair Lift Door & Securement System

Inspection Procedures:	Repair (or note) if:	Out of Service if:
		There is excessive side play (more than two (2) inches) in the lift mechanism when the platform is partially or fully extended.
NOTE: See page 136 for definitions of fluid "seepage" and "leaks."	There is fluid seepage at the lift (note).	Lift leaks fluid onto or below floor.
		Lift is not mounted securely to the vehicle.
		The lift jacks the vehicle.
		Lift on 1989 or later buses (large end barrier-type lift) is not equipped with frame padding.
		Any part of the lift mechanism or hardware is damaged, missing, or not secure, including cams, clips, pins, rollers, and platform fasteners.
		Manual backup system does not function properly.
	(Continued on Next Page)	

A. INSIDE BUS
18. Wheelchair Lift Door & Securement System

Inspection Procedures:	Repair (or note) if:	Out of Service if:
2) Inspect wheelchair and occupant securement (tie-down) system for proper operation, condition, mounting, proper type, and location.	Track is filling with dirt but occupant securement straps and wheel chair tie-down straps can still be attached to or detached from track (repair).	Wheelchair tie-down track or fasteners are loose, broken, or sections of track are not continuous within each wheelchair position (pre-1989 only). Wheelchair or occupant securement straps are broken, frayed, cannot be easily attached to or detached from track, or will not operate. Securement system for buses built between October 1983 and November 1989 is not a side facing track and belt system meeting Florida Specifications. Securement system (for buses built after November 1989) is not a forward facing wheelchair and occupant securement system meeting Florida specifications. Wheelchair or occupant securement track is mounted using self-threading hardware (lag bolts, sheet metal screws, etc.) or track is filled with dirt.
3) Check for presence, proper type, proper mounting, and condition of a durable webbing cutter. Secure mounting must provide easy removal within easy reach of a seated, belted-in driver. (Starting October 1993).		No durable webbing cutter is present (if required). Webbing cutter is not securely mounted in driver's compartment within easy reach of a seated, belted-in driver.

A. INSIDE BUS
19. 2-Way Radio Operation (If Equipped)

Inspection Procedures:	Repair (or note) if:	Out of Service if:
2-Way Radio Operation Inspect radio and antenna for condition, mounting and location, and routing of wiring, and perform function check.	Radio will not transmit or receive (repair). Mounting is loose (repair).	Driver has to move out of the normal driving position to operate radio. Wiring or connectors are not insulated, installed improperly, misrouted, or there is the possibility of an electrical short circuit due to unsecured or damaged wiring.

A. INSIDE BUS
20. Interior Wiring, Cab Hoses, & Fire Wall Seals

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Interior Wiring		
Inspect visible wiring for mounting, condition, chafing, abrasion, corrosion, loose connectors, or improper repairs.	Wiring or connectors are unsecured, corroded, or improperly routed (repair).	Any wire or connector is cut or severely chafed, is missing insulation, or is routed against a sharp edge, or there is interference with driver's controls.
b. Cab Hoses		
Inspect all hoses for leaks, condition, routing, abrasion, and presence of heater hose shielding (shielding required starting November 1980). (See page 136 for definitions of seepage and fluid leaks.)	Hose is weathered, cracked, abraded, or routed improperly (note). Any hose in driver's compartment is seeping lubricant or coolant (repair).	There is any unshielded heater hose in the driver's compartment (starting November 1980). Any hose in driver's compartment is leaking lubricant or coolant.
c. Firewall Seals		
Inspect firewall for any holes, cracks, unsealed openings, and deteriorated or missing sound deadening/insulation material.	Sound deadening/insulation is missing, unsecured, or deteriorated (repair).	There is any open hole or unsealed area in the firewall.

A. INSIDE BUS
21. General Condition, Bus Interior

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Floor		
Inspect floor covering, plywood sub-floor (if installed), aisle and cove molding strips, and ribbed rubber in aisle for condition, adhesion, loose or missing fasteners, and/or fastener holes or cracks.	Floor covering material is loose, deteriorated, or cracked (repair). Plywood is rotten or soft (repair). Cove molding is loose or fasteners are loose or missing (repair).	There are any unsealed holes or cracks through floor to underside of bus. Aisle is not equipped with 12 inch wide ribbed rubber. Any aisle molding strip is not securely fastened to floor or any aisle or cove molding presents a sharp edge or protrusion. There is any damage to floor covering material that could create a tripping hazard.
b. Stepwell		Step warning decals are missing or unreadable (flat floor equipped buses only).
Check specification and condition of stepwell and tread.	Step tread is not secure or sealed at inside edge where it meets next step (repair).	Stepwell tread and leading edge at aisle are not flush and securely adhered, causing a tripping hazard. Stepwell tread ribs/nubs, on top surface at leading edge, are worn smooth more than four (4) inches in width. Stepwell support structure is broken, or stepwell is rusted through.

(Continued on Next Page)

A. INSIDE BUS
21. General Condition, Bus Interior

Inspection Procedures:	Repair (or note) if:	Out of Service if:
		Any Type C or D bus manufactured starting December 1990 is not equipped with a three-step riser with full-width steps. The stepwell area has been damaged or weakened to the extent that a hazard exists.
c. Grab Rail(s) Check for presence and secure mounting of entrance grab rail(s).		Entrance grab rail(s) is missing or not securely mounted. Lift equipped bus does not have a front and rear grab rail at the entrance stepwell.
Check handrail(s) for required modification(s) (if equipped). If required modification is not present, perform a NHTSA string and nut test.	Handrail(s) has not been modified as required (repair).	Handrail(s) fails NHTSA string and nut test.
d. Paneling Check all interior sidewall, rear, ceiling, and driver's area paneling for secure fastening, projections or sharp edges, and condition.	There is graffiti or unauthorized stickers on interior panels (repair). There are loose or missing fasteners on any maintenance access panel (repair). Interior paneling is mildewed, or paint (where required) is missing or damaged (note). **(Continued on Next Page)**	Sharp edges, rust-through, loose fasteners, or projections from paneling exist that could cause injury to passengers or driver. There are any non-flush mounted speakers (except trim rings) or any other unauthorized items affixed to the interior paneling of the bus in the passenger area.

A. INSIDE BUS
21. General Condition, Bus Interior

Inspection Procedures:	Repair (or note) if:	Out of Service if:
e. Broom Mounting		
Check securement and location of broom.		Broom is not securely mounted in the driver's compartment.
f. Loose Objects Secured		
Check to see that all objects within the bus are secured.		Loose objects such as trashcans, clothing, cleaning supplies, or other loose items are present that are not located in a secured compartment or container.
Check for the presence of aerosol containers and non-aerosol liquid containers.		Any aerosol can(s) or other container(s), with flammable or volatile contents are present. Any aerosol container or liquid container is present with contents not clearly labeled.
g. Dog House/Engine Cover		
Inspect dog house/engine cover seals, sound proofing, weather stripping, prop-rod and latch operation.	Soundproofing is not present, or is loose or deteriorated (repair).	Seals or weather stripping are leaking and allowing air/fumes into driver's compartment. Prop-rod does not safely support the dog house/engine cover. Latch(s) are hard to operate or do not secure the dog house/engine cover properly.

B. OUTSIDE BUS

1. Headlights, Turn Signals, Hazard, Side Marker, Brake Lights, Tail Lights, Backup Lights, Backup Alarm (if equipped), Parking Lights, and LED Type Lights

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Headlights		
Check both headlights for brightness, operation, condition of sealed beams, and visible misaiming. Check high beam indicator operation and headlight switch.	Left and right sealed beams are of different type (halogen vs. conventional) (repair).	Either sealed beam does not light on low and high. Any sealed beam lens is fogged or cracked, or light is dim.
Check Daytime Running Lamps (DRL) (if equipped) for proper operation.	DRL system does not work according to specifications (repair).	High beam indicator doesn't light. Dimmer switch sticks, is hard to operate, or doesn't function. Headlight switch is damaged or not securely mounted, or knob is missing. Lights go out after being on a short time, or operation is intermittent. Upon visible inspection, there is any obvious misaiming of headlights.
b. LED Type Lights		
While checking lights, check all light emitting diode (LED) elements in all LED type lights.	Any single LED element does not work (if equipped). **(Continued on Next Page)**	25 % or more of the LED elements in any LED type light are not working.

B. OUTSIDE BUS

1. Headlights, Turn Signals, Hazard, Side Marker, Brake Lights, Tail Lights, Backup Lights, Backup Alarm (if equipped), and Parking Lights

Inspection Procedures:	Repair (or note) if:	Out of Service if:
c. Turn Signals Check turn signals (including bulbs and lenses) for operation, condition, and specifications (see Chart 6 and 7 on pages 85 and 86).	Any turn signal lens is cracked (repair). **(Continued on Next Page)**	Any turn signal does not flash or is dim. Turn signals do not flash 60 to 120 times per minute. Bus is manufactured since December 1990 (any Type C bus over 29 capacity or any Type D bus) and is not equipped with side-mounted turn signals. Turn signal indicator does not properly indicate right and left (position of turn signal switch). Turn signal switch does not function properly or will not maintain selected position. Turn signal switch does not cancel or return to neutral position. Any turn signal lens on buses built since September 1985 is not amber. Any turn signal lens is damaged, and white light is visible. Any turn signal lens has darkened, faded, or is dirty, significantly affecting visibility or color of the light.

B. OUTSIDE BUS

1. Headlights, Turn Signals, Hazard, Side Marker, Brake Lights, Tail Lights, Backup Lights, Backup Alarm (if equipped), and Parking Lights

Inspection Procedures:	Repair (or note) if:	Out of Service if:
d. Hazard		
Check four-way hazard lights for operation and condition.	Any lens is cracked or dirty (repair).	Any four-way hazard light fails to function. Hazard lights do not flash 60 to 120 times per minute. Switch does not function or will not maintain set position with steering wheel in the straight-ahead position.
e. Side Marker		
Check side marker lights (if installed) for operation and condition.	Any side marker light fails to function or is cracked or damaged (repair).	
f. Brake Lights		
Check brake lights and lens(es) for operation, condition, and specifications (see Chart 7, page 86).	One brake light on either or both sides fails to function (four (4) brake light systems only) (repair). **(Continued on Next Page)**	Both brake lights on one side fail to function (four (4) brake light system). For buses built with one brake light per side (buses built prior to November 1980), either brake light fails to function. After brake pedal is released, brake lights stay on.

B. OUTSIDE BUS

1. Headlights, Turn Signals, Hazard, Side Marker, Brake Lights Tail Lights, Backup Lights, Backup Alarm (if equipped), and Parking Lights

Inspection Procedures:	Repair (or note) if:	Out of Service if:
		Any 19 capacity or larger bus built since November 1980 is not equipped with two (2) seven (7) inch and two (2) four (4) inch brake lights.
	Any brake light lens is cracked (repair).	Any brake light lens is loose, incorrectly installed, or damaged, causing white light to be visible.
		Any brake light lens is not red or is not proper type meeting SAE specification.
		Any brake light lens has darkened, faded, or is dirty, significantly affecting the visibility or color of the light.
g. Tail Lights		
Check tail light(s) and lens(es) for operation, condition, and specifications (see Chart 7, page 86).	One (1) tail light on either or both sides fails to function (four (4) tail light system only) (repair).	Both tail lights on one (1) side fail to function when headlight switch is in either the park or headlight positions (four (4) tail light system).
		One tail light on either side fails to function (two (2) tail light system).
		Any 19 capacity or larger bus built since November 1980 is not equipped with two (2) seven (7) inch and two (2) smaller tail lights.
	Any tail light lens is cracked (repair).	Any tail light lens is damaged and white light is visible.

(Continued on Next Page)

B. OUTSIDE BUS

1. Headlights, Turn Signals, Hazard, Side Marker, Brake Lights, Tail Lights, Backup Lights, Backup Alarm (if equipped), and Parking Lights

Inspection Procedures:	Repair (or note) if:	Out of Service if:
		Any tail light lens is not red or is not proper type meeting SAE specifications. Any tail light lens has darkened, faded, or is dirty, significantly affecting the visibility or color of the light**.**
h. Backup Lights Check backup lights for proper operation and condition (see Chart 7, page 86).	One (1) of two (2) backup lights (if equipped) doesn't function (repair). Any backup lens is cracked (repair).	Any bus is not equipped with at least one (1) functional white backup light. Backup light(s) stays on all the time or stays on in any gear position other than reverse.
i. Backup Alarm Check for presence of backup alarm (buses manufactured starting November 1990) and dash sticker (starting November 1993). Check proper operation of alarm (or variable volume alarm if equipped) by placing transmission in reverse (engine running) and listening for alarm sound.	Dash sticker is not mounted on dash in plain view of the driver (repair). Dash sticker is not present (starting November 1993) (repair). Variable volume backup alarm (if equipped) is not variable (repair). **(Continued on Next Page)**	Backup alarm does not sound.

B. OUTSIDE BUS

1. Headlights, Turn Signals, Hazard, Side Marker, Brake Lights, Tail Lights, Backup Lights, Backup Alarm (if equipped), and Parking Lights

Inspection Procedures:	Repair (or note) if:	Out of Service if:
j. Parking Lights Check parking lights for proper operation and condition (see Chart 6 and 7, pages 85 and 86).	One (1) front parking light does not function on either side (four (4) parking light system) (repair). Any parking light lens is cracked or damaged (repair).	Both front parking lights on either side (four (4) parking light system, if equipped) do not function in parking or headlight positions. One parking light fails to function (two (2) parking light system, if equipped).

B. OUTSIDE BUS
2. Clearance & ID Lights, Reflectors and Strobe Light (if equipped)

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Clearance and ID lights		
Check light(s) and lens(es) for operation, condition, and location. Also check license plate light (See Chart 6 and 7 on pages 85 and 86).	Any single clearance light on the front of the bus fails to function (repair).	All clearance lights on either side of the bus are inoperative.
	One or two ID lights (but not all ID lights) on the front or rear of the bus fail to function (repair).	All clearance lights on the front of the bus are inoperative.
		Any single corner-mounted clearance light is inoperative.
		All ID lights on either the front or the rear of the bus are inoperative.
	Any clearance light switch (on buses manufacturered prior to September 1985) is hard to operate or sticks, or knob is missing (repair).	Clearance lights (on buses manufactured starting September 1985) are not activated and deactivated by the headlight switch.
	Any clearance or ID light lens is damaged or white light is visible (repair).	Any rear clearance or ID light lens is not red, or any intermediate or front clearance or ID lens is not amber.
		Any clearance or ID light lens has darkened, faded, or is dirty, significantly affecting the visibility or color of the light.

(Continued on Next Page)

B. OUTSIDE BUS
2. Clearance & ID Lights, Reflectors and Strobe Light (if equipped)

Inspection Procedures:	Repair (or note) if:	Out of Service if:
	License plate light is inoperative (repair).	Any bus over 30' in length is not equipped with intermediate amber clearance lights on both sides.
b. Reflectors		
Check reflectors for condition and location (see Chart 6 and 7 on pages 85 and 86). **Reflectors are required as follows:** **1) Buses over 30' in length: two (2) red on rear, one (1) red on each side at rear, one (1) intermediate amber on each side, and one (1) amber at front and one (1) amber front of cowl on each side.** **2) Buses under 30' in length: same, except intermediate amber are not required.**	Any reflector is damaged or cracked (repair). **(Continued on Next Page)**	Any required reflectors are missing. Any required red reflector is faded, significantly affecting its original color.

B. OUTSIDE BUS
2. Clearance & ID Lights, Reflectors and Strobe Light (if equipped)

Inspection Procedures:	Repair (or note) if:	Out of Service if:
c. Strobe Light Check roof mounted white flashing strobe light for operation, location, and condition.		Any bus manufactured starting December 1990 is not equipped with a roof-mounted white flashing strobe light mounted in the center of the roof approximately 48 inches from the rear of the bus. The strobe light on any bus built prior to December 1990 is not mounted in the center of the rear part of the roof. Strobe light does not function.

B. OUTSIDE BUS
3. Pupil Warning Lights

Inspection Procedures:	Repair (or note) if:	Out of Service if:
Pupil Warning Lights		
Check pupil warning lights for operation and condition (see Chart 6 and 7 on pages 85 and 86).	Either pupil warning light pilot light fails to function (repair).	Any amber or red light does not function or is dim.
NOTE: See Chart 5, page 78, for function checks.		Amber/red lights (both front and rear) do not alternately flash (side to side).
NOTE: Pupil warning light hoods front and rear are not required starting September 1993.		Any pupil warning light is not red (outer) or amber (inner) or is not proper type meeting SAEJ760 (December 1974), SAE specifications (June 1976), and SAE specifications May 1982 (Revised May 1982).
		Any pupil warning light lens is damaged, and white light is visible.
		Any pupil warning light lens is obstructed, has become darkened, faded, is misaimed, or is dirty, affecting the color of the light or reducing the visibility to less than 500 feet in bright sunlight.
		Pupil warning lights do not function according to all conditions in Chart 5, page 78.

CHART 5 EIGHT-LIGHT WARNING SYSTEM

NOTE: **System may not be designed in such a way that the operator is required to actuate controls in a particular sequence to achieve the desired combination of conditions.**

EXAMPLE: If the driver places the three-position switch in the amber position with the master switch "ON," it must **not** be required that the three-position switch be moved to "RED" or that the service door be opened in order to deactivate the "AMBERS." In this example, the driver must be able to deactivate "AMBERS" by going directly from the AMBER to the OFF position.

WITH MASTER SWITCH, CONTROL SWITCH, and SERVICE DOOR IN THE FOLLOWING POSITIONS:				CONDITION OF STOP ARM(S), STOP ARM LIGHTS, AMBER WARNING LIGHTS AND RED WARNING LIGHTS MUST BE:			
	MASTER SWITCH POSITION (ON or OFF)	CONTROL SWITCH POSITION (three-positions: OFF, AMBER, or RED)	SERVICE DOOR POSITION	STOP ARMS, STOP ARM LIGHTS	AMBER WARNING and PILOT LIGHTS	RED WARNING and PILOT LIGHTS	*AUDIBLE ALARM
1)	ON	OFF	CLOSED	RETRACTED, OFF	OFF	OFF	OFF
2)	ON	OFF	OPEN	RETRACTED, OFF**	OFF	ON	ON
3)	ON	AMBER	CLOSED	RETRACTED, OFF	ON	OFF	OFF
4)	ON	AMBER	OPEN	RETRACTED, OFF**	OFF	ON	ON
5)	ON	RED	CLOSED	EXTENDED, ON	OFF	ON	OFF
6)	ON	RED	OPEN	EXTENDED, ON	OFF	ON	OFF
7)	OFF	ANY POSITION	ANY POSITION	RETRACTED, OFF	OFF	OFF	OFF

*** NOTE: Effective September 1, 1992.**
****NOTE: The stop arm lights <u>may</u> flash when stop arm is retracted on buses built prior to November 1983.**

B. OUTSIDE BUS
Stop Arm(s)

4.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Stop Arm(s)		
Check stop arm(s) for specifications, operation (fully extends 90° (degrees) +/- 5° (degrees), and condition (see Chart 7, page 86).	Wiring-ground strap is loose or not properly routed and secured (repair).	Wires or ground strap(s) is broken. Any stop arm light does not flash or lights do not flash 60 to 120 times per minute.
	Hinge or bushing(s) is dry of lubrication (repair).	Stop arm does not extend or retract or is slow to extend or retract.
	Stop arm assembly or blade mounting is loose (repair).	Any stop arm has an air or vacuum leak.
	Stop arm extends more than 90° (degrees) +/- 5° (degrees)(repair).	Any stop arm (paint or decal) is significantly faded or discolored.
	Stop arm extends less than 90° (degrees) +/- 5° (degrees) (repair).	Stop arm does not operate according to all the conditions in Chart 5, page 78. Stop arm(s) not of proper type and specifications: 1) Webfoot, January 1965 to September 1985. 2) Octagonal, September 1, 1985. 3) Alternately flashing red lights, all years. 4) Reflective white border and lettering, March 1, 1977.

(Continued on Next Page)

B. OUTSIDE BUS
Stop Arm(s)

4.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
		5) High intensity reflectivity, starting December 1990. 6) Dual stop arms required on all modified Type B and Type C 47 passenger capacity and up and all Type D starting December 1990.
Check that rear stop arm decal has been deleted on buses built after September 1, 1993.		A stop arm decal has been installed on the forward side of the rear stop arm for buses built after September 1, 1993.
b. Student Crossing Arm (if equipped)		
Check front bumper mounted student crossing arm for specifications, operation (fully extends 90° (degrees) +/- 5° (degrees), condition, and mounting. **NOTE: Crossing and stop arm extension, labeling, and other requirements are found in Federal Motor Vehicle Safety Standard (FMVSS) 131.**	Crossing arm extends more than 90° (degrees) +/- 5° (degrees) (repair). Crossing arm extends less than 90° (degrees) +/- 5° (degrees) (repair). Crossing arm assembly or blade mounting is loose (repair). Hinges or bushings are dry of lubrication (repair).	Not equipped with student crossing arm, starting December 1992. Crossing arm does not extend or retract or is slow to extend or retract. Crossing arm is leaking air.

B. OUTSIDE BUS
5. General Condition, Bus Exterior

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Mirrors		
Check all exterior mirror mounts and brackets for tightness and condition.		Mirror mounts or bracket(s) are bent, broken, or insecure. Any exterior review mirror is broken, cracked or loose in the frame.
b. Bumpers		
Check bumpers for mounting, condition, color, and body seal (rear bumper).	Bumper is not black (repair). Bumper is equipped with any unauthorized stickers or decals (repair). Rear bumper body seal (if equipped) is damaged or missing (note).	Bumper is significantly bent or has protruding metal. Bumper mounting system has cracked, broken, or there are bent brackets, braces, or welds, or missing or loose fasteners. Diagonal reflective striping (if equipped) is missing, significantly damaged, or is not reflective. Front bumper on buses built starting October 1982 permanently deforms or is not of sufficient strength to allow lifting front of bus without permanent deformation.

(Continued on Next Page)

B. OUTSIDE BUS
5. General Condition, Bus Exterior

Inspection Procedures:	Repair (or note) if:	Out of Service if:
c. Body Damage		
Check body exterior for damage, scratches, dents, etc.	Body has small dents, scratches, etc. (repair).	Any body part is damaged or dislocated, creating a protrusion or sharp edge.
	Body has small rust spots or water leaks (repair).	Body panels, rivets, or other components are damaged or corroded to the point where joint strength or body structural integrity is compromised.
d. Paint		
Check paint on body trim and wheels for required coloration and condition.	Paint is faded, discolored, or damaged (repair).	Paint is not National School Bus Yellow (except white roof). Trim, rub rails, warning light hoods, or background are not black. Stud-piloted disk wheels or spoke hub-mounted wheels are not black, or hub-piloted wheels are not National School Bus Yellow.
e. Reflective Markings (if equipped)		
Check reflective markings for coloration, reflectability, and condition. Reflective markings required starting September 1995. Check for presence of reflective markings around any emergency exit, door, window, or roof hatch as required by F.M.V.S.S. 217 (buses purchased after November 1993).	Reflective markings, other than those around any emergency exit door or roof hatch, as required by F.M.V.S.S. 217, are faded, discolored, damaged, or peeling (repair).	Any required reflective markings are missing, or significantly faded or discolored, around any emergency exit, door, or roof hatch.

(Continued on Next Page)

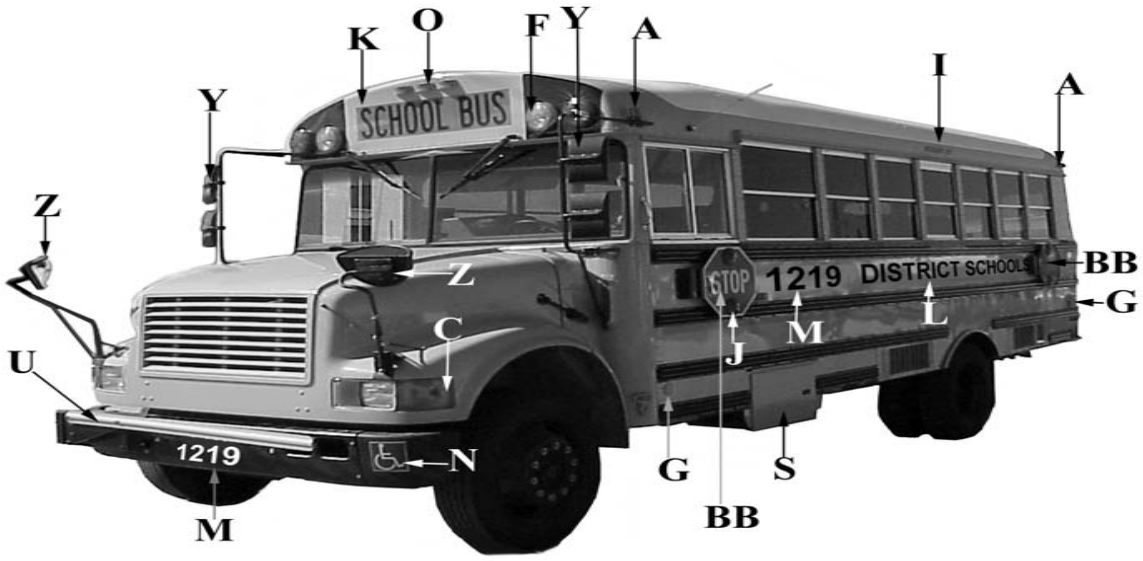
B. OUTSIDE BUS
5. General Condition, Bus Exterior

Inspection Procedures:	Repair (or note) if:	Out of Service if:
f. Lettering Check all lettering for required type, size, location, and color (see Chart 6 and 7 on pages 85 and 86). Note: See Florida school bus specifications for additional lettering requirements.	Bus is not equipped with following lettering (repair): 1) Eight inch (8") "SCHOOL BUS" front and rear. 2) "*<u>Name</u>* District Schools" on left and right sides of body: four inch (4") starting November 1978 and six inch (6") starting 1993. 3) Local bus number: rear and both sides. (Front and rear and both sides starting 1998). Any required lettering is not black (except handicapped symbol, local bus number if located on bumper, and/or emergency door hold open device labeling). (repair). Any required lettering is not clearly readable (repair). Exterior emergency hatch operating instructions are not clearly readable (repair). **(Continued on Next Page)**	Bus is not equipped with following lettering: 1) Handicapped symbol (front and rear; buses built starting September 1984 if wheelchair lift equipped). 2) Minimum two inch (2") lettering "Emergency Door" at top or above door. 3) Emergency window(s) or hatch(es) labeled "Emergency Exit" from inside and outside (buses built starting December 1990). 4) Fuel type lettering is not present (buses built starting September 1985). There is not at least one local bus number and District Name present on the exterior. Any handicapped symbol (if required) is not reflective, white on blue background, and minimum six inches by six inches (6"x6").

B. OUTSIDE BUS
5. General Condition, Bus Exterior

Inspection Procedures:	Repair (or note) if:	Out of Service if:
g. Emergency Door Operation		
Check emergency door for operation from exterior of bus.		Emergency door is hard to open fully from outside of bus. Emergency door latch mechanism requires more than 40 pounds to release. Emergency door handle is mounted to allow "hitching" onto the bus.
h. Engine Hood		
Check engine hood for operation, condition, and safety latch.	Hood is misaligned (repair). Hood hinges are not lubricated or are damaged (repair).	Hood cannot be opened as designed. Safety latch does not secure hood, is not lubricated, or is damaged. Hood prop rod(s) or hold-open feature does not function properly.
i. Cleanliness		
Check exterior of bus for cleanliness.	Exterior of bus is dirty (note).	Bus is dirty to the point visibility through any window or light lens is significantly reduced.

Chart 6 MINIMUM LETTERING AND LIGHTING REQUIREMENTS



A. Clearance Lights

Stop Arm(s)

C. Front Turn Signals and Parking Lamps

F. Pupil Warning Lights--Dual (side by side, amber and red)

BB.

G. Reflectors, one at rear body side panel, one near front of body, and one intermediate (only on buses 30 feet or longer) on both sides

I. Emergency Exit

J. Double Faced Flashing Red Lights

K. "School Bus" Lettering (front and rear) (see specifications)

L. (Name of District) District Schools (both sides)

M. Local Bus Number (both sides and front and back)

N. Universal Handicapped Symbol (lift buses)

O. Identification Lamps

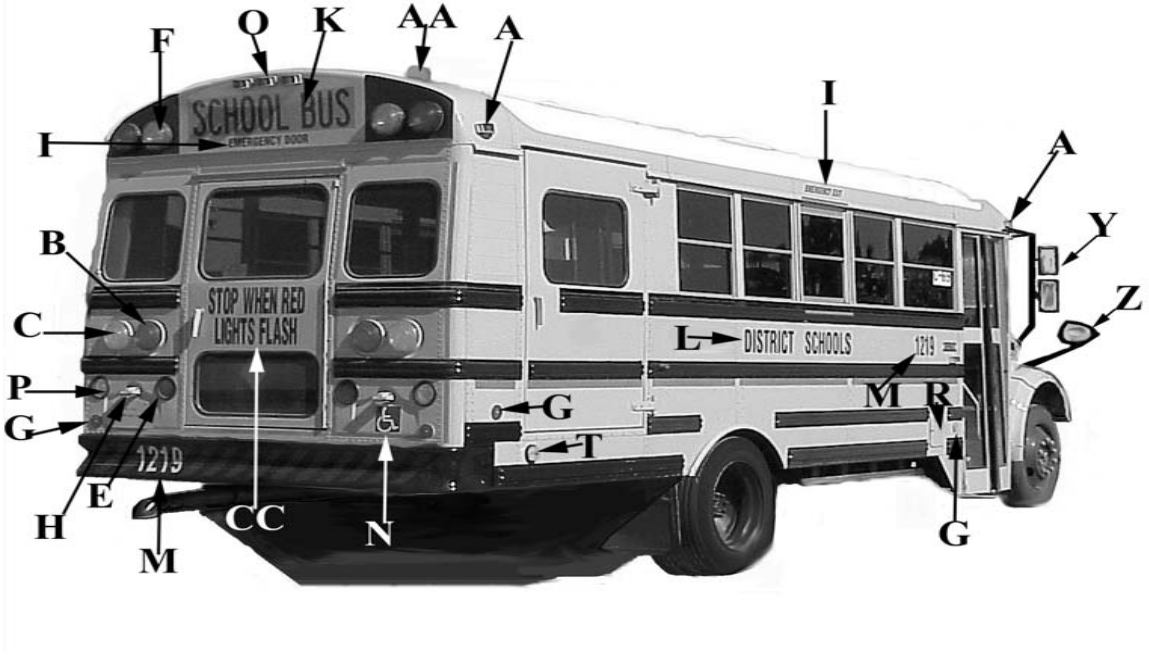
S. Battery Box

U. Pupil Crossing Arm

Y. Rear-View Mirror System (see specifications)

Z. Cross / Side View Mirror System (see specifications)

CHART 7 MINIMUM LETTERING AND LIGHTING REQUIREMENTS



A. Clearance Lights

B. Seven-Inch Brake/Tail/Parking Lights

C. Seven-Inch Turn Signals (amber)

E. Four-Inch Brake/Tail/Parking Lights

F. Pupil Warning Lights--Dual (side-by-side amber and red)

G. Reflectors

H. License Plate Lamp (one minimum)

I. Emergency Exit Lettering

K. "School Bus" Lettering (front and rear) (see specifications)

L. (Name of District) District Schools

M. Local Bus Number (all sides)

N. Universal Handicapped Symbol (lift buses)

O. Identification Lamps

P. Backup Lights

R. Fuel Door

T. Wheelchair Lift Landing Light

Y. Rear View Mirror System

Z. Cross / Side View Mirror System

AA. Roof-Mounted White Strobe Light

CC. Rear Door Lettering (see specifications)

C. ENGINE COMPARTMENT
Steering

1.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Play		
Check for play in the steering system, at the steering wheel, using the following procedures:		Free play (lash) exceeds amounts specified in Chart 8, page 88.
1) Visual check - from inside bus with engine running, rotate steering wheel lightly from side to side until the turning motion can be observed at tires, then measure free play (lash) at steering wheel outer diameter. This procedure must be performed with the vehicle on the ground.	Steering wheel OEM covering is loose, deteriorated, or cracked (repair).	OEM covering is loose, deteriorated, cracked, or missing exposing metal steering wheel reinforcement. Steering wheel is loose on column. Steering wheel is non-OEM design.
2) To check power assist operation, run engine at fast idle, turn steering wheel a full right and left turn, and feel for binding, jamming, or belt slippage.		Power assist is inadequate, or there is binding, jamming, or belt slippage.
b. Column		
Check steering column inside bus for up and down play (parallel to shaft), side-to-side play (perpendicular to shaft), and for proper mounting.	**(Continued on Page 89)**	Side-to-side play in steering column exceeds 1/4 inch or up and down play exceeds 1 inch. Column assembly mounting (including floor mounting plate) or fasteners are loose.

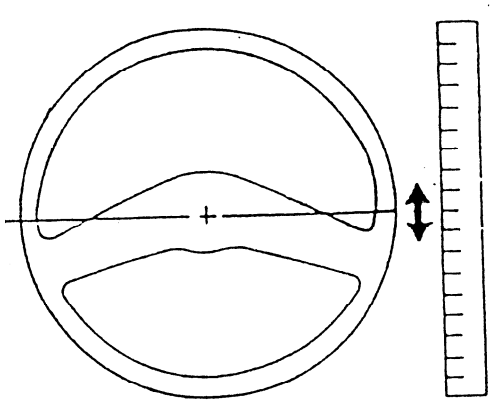
CHART 8

STEERING WHEEL PLAY (LASH) MEASUREMENTS

Figure 1

Steering Wheel Size

15 inches - 1 3/4” (4.4 cm)
16 inches - 2” (5.1 cm)
18 inches - 2 1/4” (5.7 cm)
20 inches - 2 1/2” (6.4 cm)
22 inches - 2 3/4” (7.0 cm)

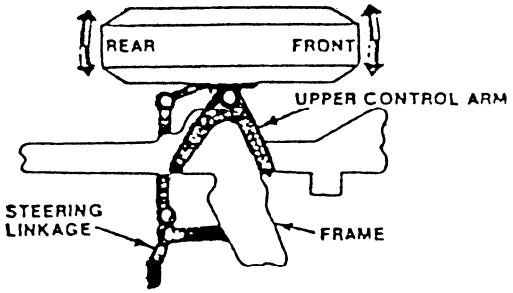


STEERING LASH

Figure 2

Wheel Size:

16 inches or less - 1/4” (6.5 mm)
17 to 18 inches - 3/8” (9.5 mm)
Over 18 inches - 1/2” (13 mm)



STEERING LINKAGE PLAY - TOP VIEW

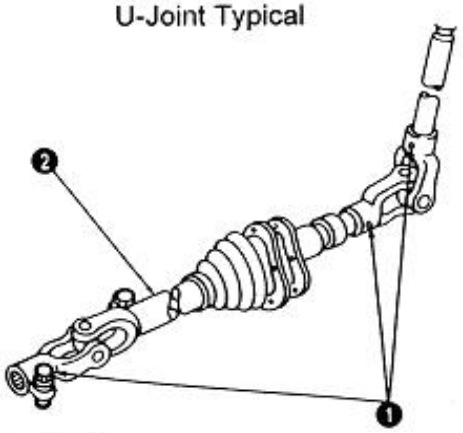
C. ENGINE COMPARTMENT
Steering

1. Inspection Procedures:	Repair (or note) if:	Out of Service if:
		Tilt/telescopic assembly (if equipped) will not stay locked in position. Steering column U-joint inside the bus (if equipped) is loose, damaged, or noisy after lubrication. Firewall rubber boot at floor (if equipped) is torn, or ripped, or missing.
c. Steering Gear Box and other external components must be checked using the following procedure: 1) Vehicle should be on ground (not suspended). 2) With engine running, have assistant move steering wheel back and forth repeatedly to load steering components. 3) Visually observe the following external steering and related suspension and frame components for looseness while assistant works steering (also see specific procedures under each component):		Column U-joint (if equipped; see Figure 3, page 91) is loose, damaged, or noisy after lubrication. Flexible coupling, if equipped (rag joint, Figure 4, page 91) has loose or missing fasteners, damaged flexible disc, or elongated holes. Any column U-bolt, pinch bolt, other column fasteners, or input shaft coupling is loose, damaged, or missing.
	(Continued on Next Page)	

C. ENGINE COMPARTMENT
Steering

1. Inspection Procedures:	Repair (or note) if:	Out of Service if:
a) Column shaft and hardware b) Column U-joints or flexible coupling (as equipped)		Pot joint, if equipped (shell coupling; See Figure 5, page 91), is loose.
c) Coupling at gear box Gear box Pitman arm Drag link	Pot joint (shell coupling) rubber is damaged or torn (repair).	Pot joint (shell coupling) rubber is missing. Steering gear box is loose on frame or fasteners, or lock tabs are loose or missing.
d) g) Steering knuckle or arms e) Tie rod ends		Frame braces or crossmembers are cracked.
f) i) Idler arm (as equipped) h) j) Vehicle frame cross-members and frame braces (including associate rivets and fasteners for looseness and condition)		Rivets or other fasteners at frame braces or crossmembers are loose or missing.
4) Have assistant carefully operate steering to full left and right turn and check for power assist pop-off and steering stops.		Any axle or suspension component is loose beyond specifications prescribed elsewhere in this manual.
5) As follow-up to the above steering check, also perform a visual and hands-on check of each of the listed components. See the following details on pages 93 through 95.		
	(Continued on Page 93)	

Figure 3 - Column with Yoke or U-Joint Typical



❶ YOKE BOLT
❷ SOME VEHICLES ALSO HAVE A BOLT ON THIS END

Figure 4 - Typical Flexible Type Steering Coupling

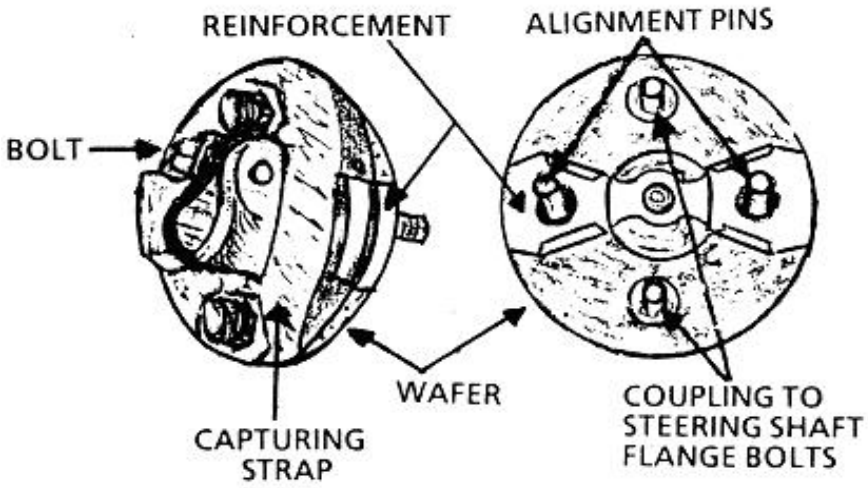
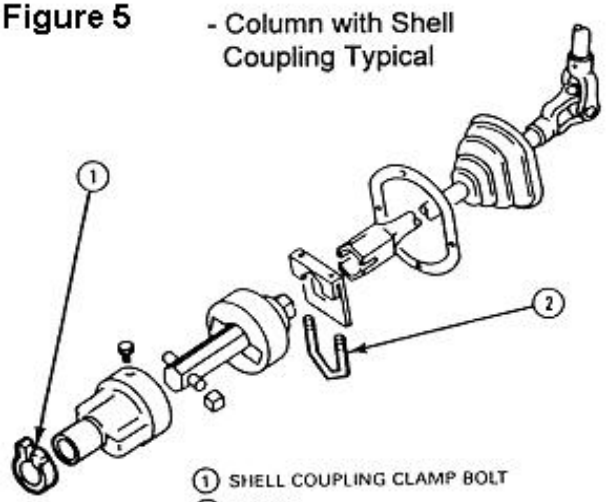


Figure 5 - Column with Shell Coupling Typical



① SHELL COUPLING CLAMP BOLT
② U-BOLT

TIGHTENING STEERING COLUMN JOINT BOLTS

WARNING - FAILURE TO MAINTAIN THE STEERING SYSTEM IN PROPER CONDITION CAN CAUSE REDUCED STEERING ABILITY RESULTING IN PERSONAL INJURY AND PROPERTY DAMAGE.

As good maintenance practice, it is recommended that steering column joint bolts be checked for tightness every 80,000 km (50,000 miles) or annually, whichever occurs first. DO NOT OVER TIGHTEN.

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C. ENGINE COMPARTMENT
Steering

1.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
c. Steering Gear Box Mounting Check mounting, condition, and tightness of steering gear box, and check frame, frame braces, and associated rivets or fasteners for looseness and condition.		Steering gear box is loose. There is any binding in steering gear box. Frame, frame braces, and associated rivets or fasteners are loose, damaged, cracked, or missing.
d. Pitman Arm Check the Pitman arm for looseness or misalignment at sector shaft splines and looseness at all joints. Check looseness of pinch bolt and fasteners and condition of Pitman arm.	Pitman arm grease fitting (if originally equipped) is loose or missing (repair).	Any play is observed between Pitman arm and sector shaft. Pinch bolt at sector shaft is loose or missing. Pitman arm to sector shaft-timing marks is misaligned. Pitman arm ball joint (if equipped) has more than 1/16 inch play (axial, i.e., in and out play between the ball stud and socket). (See Figure 6, page 96.) Pitman arm ball joint (if equipped) has loose or missing nut, or cotter pin is missing. Pitman arm is cracked or damaged.

(Continued on Next Page)

C. ENGINE COMPARTMENT
Steering

1.

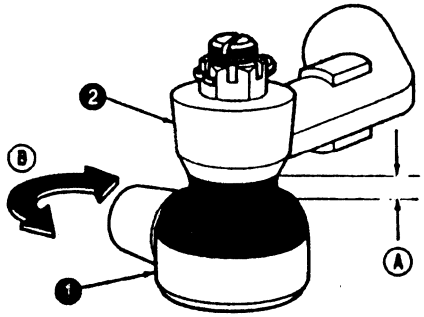
Inspection Procedures:	Repair (or note) if:	Out of Service if:
e. Drag Link		
Check the drag link ends, shaft, and fasteners for looseness and condition (on vehicles with I-beam suspension).	Any grease fitting (as equipped) is loose, missing, or will not take grease (repair). Drag link end boot is damaged or missing (repair). Drag link needs lubrication (repair). Drag link dust boot (as originally equipped) is cut, damaged, or missing (repair).	Drag link ball stud is loose in Pitman arm or upper steering arm. Any nut is loose or missing, or cotter pin is missing. Drag link shaft is damaged or bent. Drag link end (nonadjustable type) has more than 1/16-inch axial play (See Figure 6, page 96). Horizontal socket type (adjustable) drag link end has more than 1/16-inch axial or lateral play.
f. Steering Arm		
1) Check upper steering arm (Ackerman arm) and left and right side lower steering arms for securement and condition.		Any steering arm is bent, cracked, or damaged. Any steering arm attachment point is loose, or any fasteners or cotter pins are missing.
2) Check condition and securement of steering stops and lock nuts.	**(Continued on Next Page)**	Either steering stop or lock is loose, damaged, or missing.

C. ENGINE COMPARTMENT
Steering

1.

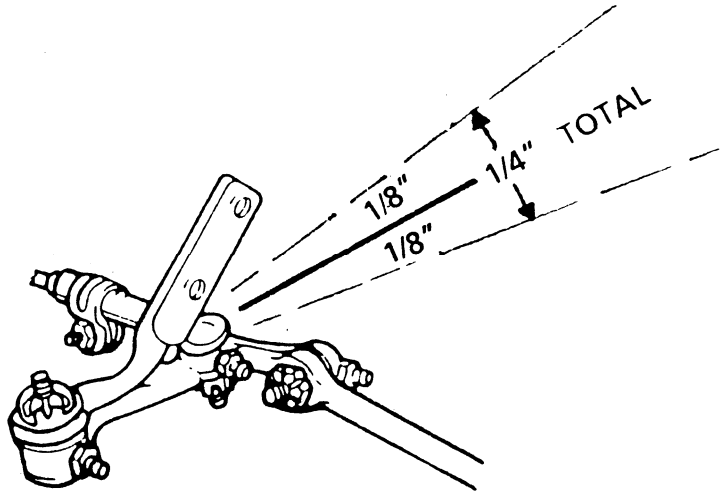
Inspection Procedures:	Repair (or note) if:	Out of Service if:
g. Tie Rod and Ends		
Check tie rod ends, tie rod, dust boots, and clamps or fasteners (as equipped) for looseness, damage, and condition.	Tie rod end dust boot is cut, damaged, or missing (repair). Tie rod end needs lubrication (repair). Any tie rod end grease fitting is loose, missing, or will not take grease (repair).	Tie rod clamps, fasteners, or cotter pin is stripped, missing, or loose. Any clamp (as equipped) is improperly positioned. Any tie rod or end is cracked or damaged. Any tie rod end has more than 1/16 inch axial play (See Figure 6, page 96). Tie rod end ball stud is loose in steering arm or idler arm.
h. Idler Arm		
Check idler arm assembly (as equipped) for looseness, damage, and condition.	Idler arm needs lubrication (repair). Idler arm grease fitting is loose, missing, or will not take grease (repair).	Any idler arm fasteners are loose or missing. Idler arm is cracked or damaged, or cotter pin is missing. Idler arm up and down play is greater than 1/4 inch total (1/8 inch either direction). (See Figure 7, page 96.)

FIGURE 6 - Checking the Rod and Drag Link End Movement



A Movement in the axial direction must be less than 1/16 inch.
B Tie rod/drag link free to rotate within steering arm socket.
1 Tie rod/drag link end
Steering arm

FIGURE 7 - Checking Idler Movement, Typical



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C. ENGINE COMPARTMENT
Batteries

2.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Hold-down Check for tightness, condition, and type of battery hold-down.		Hold-down assembly or tray is loose, corroded, or damaged, causing insecure mounting of battery. Hold-down is a flexible strap or other non-rigid design.
b. Battery Terminals Check terminals for cleanliness, tightness, and condition.		Any terminal is loose, damaged, corroded, or has missing hardware. Any positive terminal has missing insulation.
c. Battery Cables Check cable assemblies for routing, securement, condition, and size.		Cable or insulation is cracked or damaged, or cable is corroded. Cable is misrouted or unsecured, or grommet is missing to allow it to abrade on any metal or sharp edge. Cable is routed against the exhaust or any other extremely hot surface. Cable is smaller than original equipment size.

(Continued on Next Page)

C. ENGINE COMPARTMENT
Batteries

2.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
		Cable appears to be too small in diameter or of excessive length (see Chart 9, page 100). Flat braided engine ground cable is frayed or corroded, or ends are not secure.
d. Cleanliness Check cleanliness of battery or batteries.	Battery top or sides are corroded, greasy, dirty or wet with electrolyte (repair).	Battery is cracked or damaged.
e. Tray Check battery tray for operation, condition, and securement.	Battery slide tray is corroded, dirty, or hard to slide in and out (repair).	Battery slide tray securement device or tray stop is missing or nonfunctional. Battery tray does not slide in and out. Battery slide tray or box is damaged or deteriorated, reducing security of battery or batteries. Battery box door does not open or will not stay latched.
f. Electrolyte Level Check electrolyte in battery or batteries for proper level (if applicable).	Electrolyte is low (repair). **(Continued on Page 101)**	Electrolyte is too low, exposing plates.

CHART 9

CHARGING SYSTEMS CABLE SIZE CHART

SYSTEM VOLTAGE	RATED OUTPUT IN AMPERES	RECOMMENDED MINIMUM CHARGING CABLE GAUGE SIZE							
		UP TO 4 FT.	4 TO 7 FT.	7 TO 10 FT.	10 TO 13 FT.	13 TO 16 FT.	16 TO 19 FT.	19 TO 22 FT.	22 TO 28 FT.
12 VOLT	0 - 20	14	12	12	10	10	8	8	8
	20 - 35	12	10	8	8	6	6	6	4
	35 - 50	10	8	8	6	6	4	4	4
	50 - 65	8	8	6	4	4	4	4	2
	65 - 85	6	6	4	4	2	2	2	0
	85 - 105	6	6	4	2	2	2	2	0
	105 - 125	4	4	4	2	2	0	0	0
	125 - 150	2	2	2	2	0	0	0	00

MAXIMUM DIFFERENCE BETWEEN BATTERY VOLTAGE AND ALTERNATOR VOLTAGE IS 0.5 VOLT FOR 12 VOLT SYSTEMS AT FULL RATED OUTPUT.

MAXIMUM VOLTAGE DROP IN THE SENSING (#2-TERMINAL) LEAD MUST NOT EXCEED 0.2 VOLT FOR 12 VOLT 3-WIRE SYSTEMS.

CABLE GAUGE SIZE CALCULATION ABOVE TAKES INTO ACCOUNT TERMINAL CONNECTION RESISTANCE.

NOTE: WHEN AN INSULATED (NO FRAME GROUND) CHARGING SYSTEM IS INSTALLED, LENGTH OF RETURN CIRCUIT MUST BE INCLUDED TO OBTAIN TOTAL CIRCUIT LENGTH TO DETERMINE PROPER WIRE SIZE.

C. ENGINE COMPARTMENT
Batteries

2.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
g. Load Test (Optional) Perform battery load test on battery or batteries to check condition. Check battery or batteries for proper type and load rating.	Battery cable length or battery mounting restricts access to battery or batteries for servicing (repair). **CHART 10** **BATTERY TEST** **REMOVE SURFACE-CHARGE:** Discharge at 300 amps for 15 seconds. Check for blue haze or smoke. **TEST** Measure electrolyte temperature. Discharge at 1/2 the CCA rating of the battery for 15 seconds. Battery voltage must not drop below the listed values during the 15 second test. **Degrees in F** — **Min.Voltage** 70 or over — 9.6 — 9.5 — 9.4 — 9.3 60 — 9.1 50 — 8.9 40 — 8.7 30 — 0 — 8.5 20 10	Battery or batteries is of insufficient CCA rating. Battery fails load test (see Chart 10, this page).

C. ENGINE COMPARTMENT
3. Fluid Levels and Conditions

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Brake Fluid		
Check brake fluid and brake power-assist hydraulic fluid (if equipped) for level and condition.		Level of brake fluid in either side of master cylinder reservoir is lower than 1/4 inch from top or below “Add” mark (if equipped). Brake fluid or power-assist fluid shows evidence of excessive water, oil, or dirt contamination. Brake power-assist hydraulic fluid is below cold “Add” mark.
b. Power Steering Fluid		
Check power steering fluid level and condition.		Power steering fluid shows evidence of excessive water, oil, or dirt contamination. Power steering fluid is below cold “Add” mark. No oil is observed on dipstick.
c. Oil		
Check level and condition of oil.	Engine oil is below “Add” mark (repair). **(Continued on Next Page)**	There is evidence of fuel or water contamination in the oil. Dipstick is missing.

C. ENGINE COMPARTMENT
3. Fluid Levels and Conditions

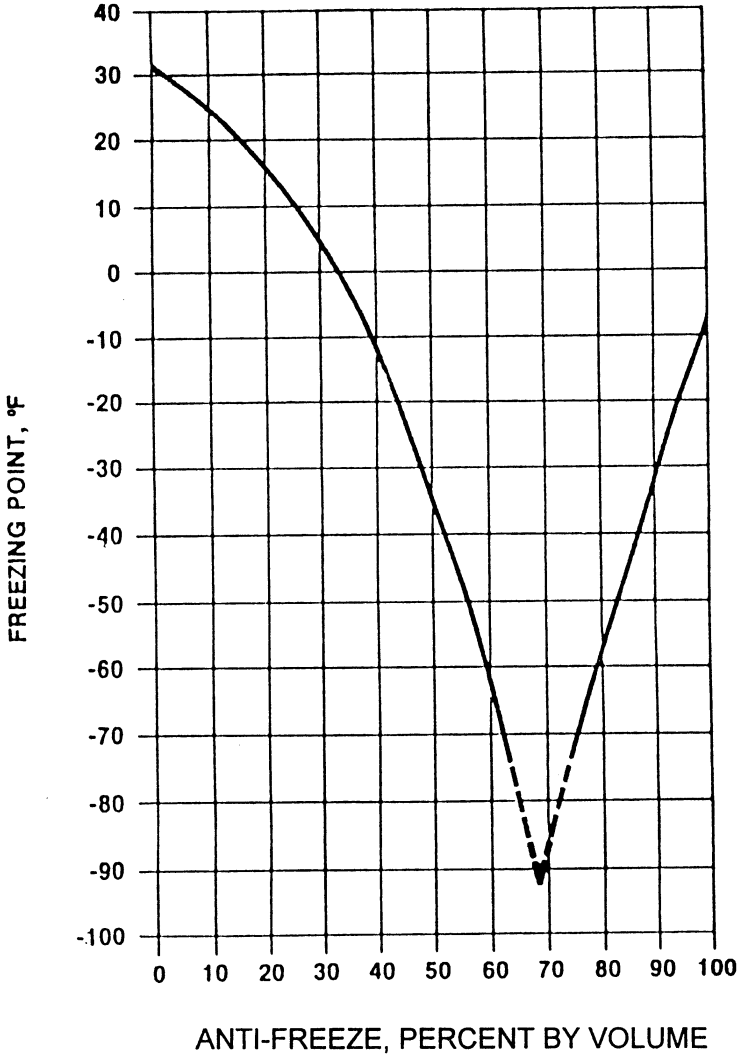
Inspection Procedures:	Repair (or note) if:	Out of Service if:
d. Transmission Fluid		
Check level and condition of transmission fluid.	Transmission fluid is below "Add" mark, or the wrong dipstick is installed (repair).	Transmission fluid is not present on dipstick.
	Transmission fluid shows evidence of excessive dirt contamination (repair).	Transmission fluid is above the full mark (overfilled).
	Transmission fluid shows need of servicing (discoloration and/or burnt smell) (repair).	Transmission fluid shows evidence of engine coolant contamination.
		Dipstick is missing or broken.
e. Windshield Washer Fluid		
Check windshield washer fluid level.	Reservoir level is low (note).	
	Windshield washer does not spray windshield (repair).	
	(Continued on Next Page)	

C. ENGINE COMPARTMENT
3. Fluid Levels and Conditions

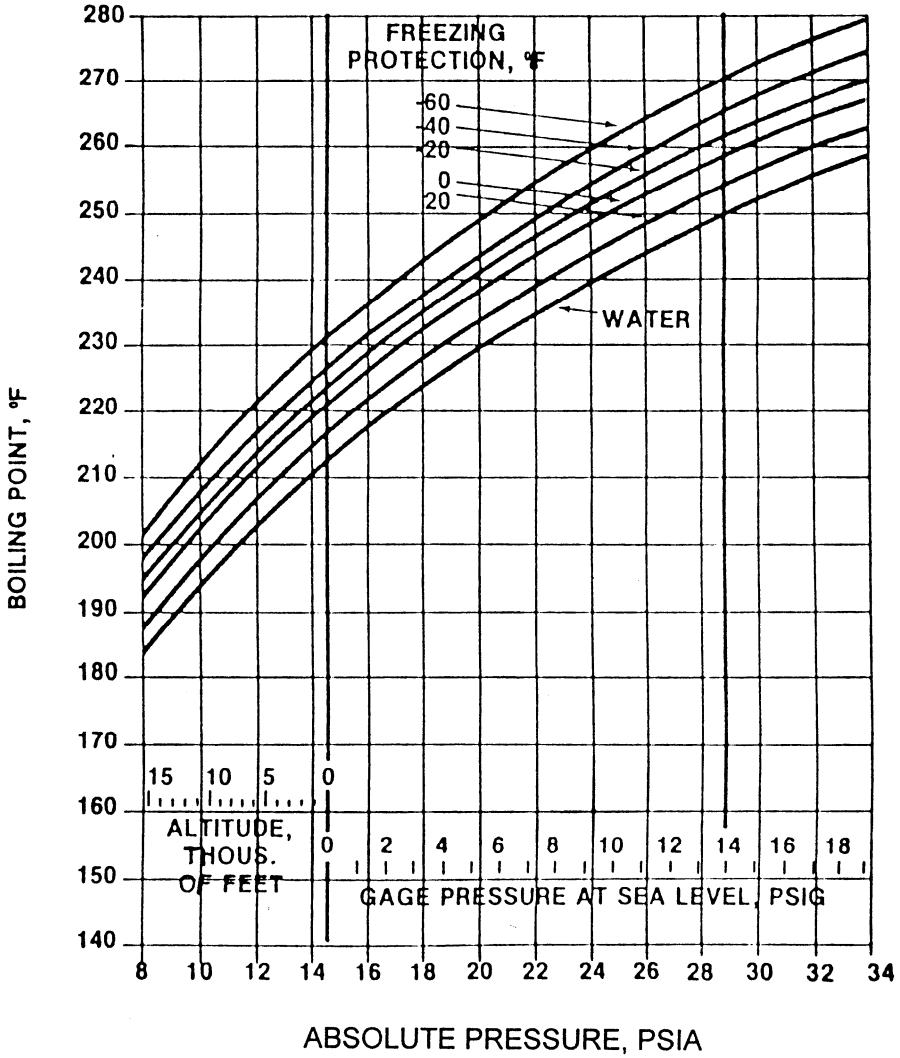
Inspection Procedures:	Repair (or note) if:	Out of Service if:
f. Coolant Check engine coolant level, condition, and freeze protection. **NOTE: Follow manufacturer's recommendations for checking coolant condition, PH, and additive package.**	Coolant level in radiator or reservoir is low (repair). Coolant shows evidence of excessive oil, dirt contamination, or rust and corrosion (repair). Coolant freeze/boil protection is inadequate (acceptable freeze protection - 20°F or lower). (See Chart 11, page 105; repair). Coolant pH level is too high or too low (repair). Coolant additive package deteriorated (repair).	Coolant cannot be seen in reservoir or in radiator tank with cap removed.

CHART 11

FREEZING POINTS OF ANTI-FREEZE SOLUTIONS



BOILING POINTS OF ANTI-FREEZE SOLUTIONS AT VARIOUS PRESSURES



C. ENGINE COMPARTMENT
4. Belts and All Hoses

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Belt(s)		
1) Tightness		
Visually and physically check all drive belts for proper tension. If available, use a tension gauge (see Figure 9, page 108). If a gauge is not available, use a ruler to measure the deflection of the belt(s) up and down at the widest point between the drive and driven pulley(s) (see Figure 10, page 108).	Any belt exceeds tension reading recommended by manufacturer, if a tension gauge is used (See Figure 9, page 108; repair).	Any belt tensioner (automatic or manual) does not apply proper tension to belt. Tension on any belt is too loose (based on specifications of type tension gauge used).
	Using ruler method, any belt has less than 1/2 inch deflection (too tight) when firm pressure is applied (See Figure 10, page 108; repair).	Tension of any belt (using ruler method) is too loose when firm pressure is applied (greater than 3/4 inch deflection).
2) Condition		
Visually inspect belt(s) for presence, glazing, oil contamination, dry rotting, cuts, and separation of plies. Check belts for twisting or distortion.	Any belt is glazed (note).	Any belt is missing, oil saturated, dry-rotted, cut, or plies of belt(s) are separated. Any belt is twisted or distorted.
3) Routing		
Visually inspect belt(s) for rubbing or contact with objects other than pulleys and for correct routing.		Any belt is making contact with objects other than pulley(s). Any belt is routed incorrectly.

(Continued on Next Page)

C. ENGINE COMPARTMENT
4. Belts and All Hoses

Inspection Procedures:	Repair (or note) if:	Out of Service if:
Belt Alignment 4) Visually inspect belts for proper alignment.	Any belt is not correctly aligned (note). **(Continued on Page 109)**	Belt misalignment is excessive and could result in failure.

CHECKING BELT TENSION AFTER TIGHTENING

FIGURE 9 - Checking Belt Tension Gauge Method

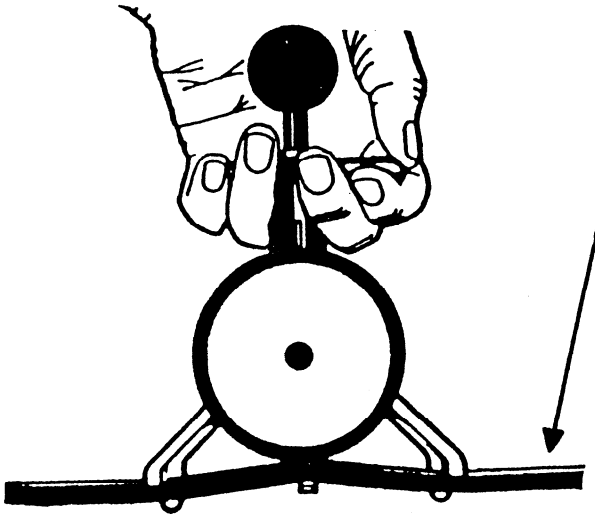
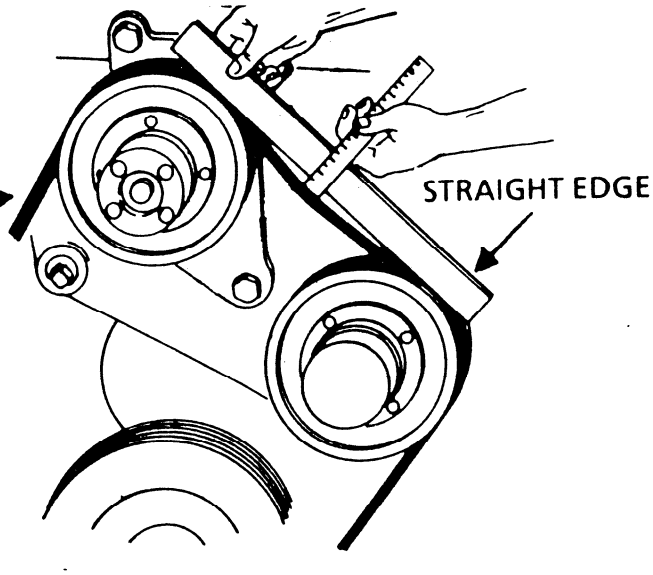


FIGURE 10 - Measuring Belt Tension Rule Method



C. ENGINE COMPARTMENT
4. Belts and All Hoses

Inspection Procedures:	Repair (or note) if:	Out of Service if:
b. Hose(s)		
1) Clamp(s) and Connections Visually and physically check that hose connections or clamp(s) are tight.	Any hose connection or clamp is loose or is over-tightened to the point of damaging the hose (repair).	Any hose connection or clamp is stripped or damaged.
NOTE: References to hoses include all types of hoses located in the engine compartment, including power steering, coolant, air compressor intake, vacuum, brake hydraulic assist, engine oil, and transmission hoses.		
2) Condition Visually inspect all hoses for cuts, abrasions and wear, oil saturation, dry rotting, and “ballooning.”		Any hose is cut, abraded, worn, oil saturated, dry-rotted, or “ballooned” to the point that failure is imminent.
3) Routing Visually inspect routing and securement of all hoses.	Any hose is misrouted or unsecured so that heat damage, abrasion, or cuts could cause long-term failure (repair).	Any hose is misrouted or unsecured so that heat damage, abrasion, or cuts could cause imminent failure.

C. ENGINE COMPARTMENT
5. Accessory Mounting and Condition

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Air Cleaner		
Check air cleaner assembly, housing, lid, piping, gasket(s), seal, and clamp(s) for leaks, securement, and condition. Record air filter restriction gauge measurement. Check for presence of wing nut and seal (if equipped). **NOTE: If air leaks are suspected, inspect for dirt/dust tracking through air cleaner assembly and intake piping. This check is critical for rear engine equipped buses or if the bus is operated in a dusty environment such as upon dirt, sand, or gravel roads.**	Any portion of air cleaner assembly or mounting is loose or damaged, including piping, nuts, bolts or clamps, but is not causing air leaks (repair). There are any worn or damaged seals or gaskets (repair). Air filter restriction gauge is not working properly (repair).	There is any air or vacuum leaks or missing or damaged components that could cause dust/dirt damage to internal engine parts (dusting down piston rings and cylinders). Air filter restriction exceeds manufacturer's specifications.
b. Power Steering Pump Check securement and condition of power steering pump.		Any portion of the power steering pump, mounting bracketry, or fastener is cracked, loose, or missing.
c. Air Compressor and Filter Check securement and condition of air compressor and filter assembly.	Air compressor air filter (if equipped) is dirty (repair). **(Continued on Next Page)**	Any portion of the air compressor air filter (if equipped), and compressor mounting bracketry, filter cover, or fastener is cracked, loose, or missing. Hose from engine air cleaner to air compressor is damaged, torn, or missing.

C. ENGINE COMPARTMENT
5. Accessory Mounting and Condition

Inspection Procedures:	Repair (or note) if:	Out of Service if:
d. Water Pump		
Check condition of water pump and pulley. **NOTE: See page 136 for definitions of fluid "seepage" and "leaks."**	There is evidence of coolant seepage from water pump, seal, gasket surface, or weep hole (repair).	Water pump is noisy, bearing is damaged, or coolant is leaking.
	Water pump fasteners are loose, damaged, or missing (repair).	Water pump and/or fan fasteners are loose, damaged, or missing to the point that failure or leaks could occur.
e. Fan		
Check fan blade and fan clutch assembly for securement and condition.		Fan has any cracked, bent, or broken blades. Any portion of fan mounting is loose. Fan clutch is seized or loose.
f. Alternator		
Check securement and condition of alternator assembly.	Alternator is noisy (repair).	Any portion of the alternator, mounting bracketry, or fastener is cracked, loose, or missing. Alternator is not charging.

C. ENGINE COMPARTMENT
Wiring

6.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
Routing and Condition		
Check routing, securement, and condition of all wiring and any electrical cable in the engine compartment.	There is any loose, damaged, or corroded wiring connector or terminal end (repair).	There is any unsecured or poorly routed wiring that could cause potential short or fire due to abrasion or heat damage.
	Any repair has been made using improper gauge wiring (repair; see Chart 12, page 113).	There are any burnt wires or missing insulation (other than ground straps).

CHART 12

PROPER WIRING GAUGE USAGE

MAXIMUM LENGTH OF CONDUCTOR IN FEET FROM POWER SOURCE TO LOAD

SAE Wire Size	20	18	16	14	12	10
Circuit Current in AMPS	ft	ft	ft	ft	ft	ft
1	36.4	52.3	78.0			
2	18.2	26.1	39.0	63.0	99.0	
3	12.2	17.4	26.0	42.0	66.0	
4	9.1	13.1	19.5	31.5	49.5	78.8
5	7.3	10.4	15.6	25.2	39.6	63.0
6	6.1	8.7	13.0	21.0	33.0	52.5
7	5.2	7.4	11.1	18.0	28.2	45.0
8		6.5	9.8	15.8	24.8	39.4
9		5.8	8.6	14.0	22.0	35.0
10		5.2	7.8	12.6	19.8	31.5
15			5.2	8.4	13.2	21.0
20				6.3	9.9	15.8
20					6.6	10.5

C. ENGINE COMPARTMENT
7. Fuel System and Lines

Inspection Procedures:	Repair (or note) if:	Out of Service if:
Fuel System and Lines Visually check the condition, operation, and securement of all fuel system components, including fuel lines securement and routing in the engine compartment.	There is evidence of dirt, algae, or water in a fuel water separator (repair).	There is any unsecured, poorly routed, or loose fuel line or hose that could cause potential fire due to abrasion or heat damage. Any fuel system connection is stripped, loose, cracked, or leaking. Any fuel system component is damaged or not mounted securely.

C. ENGINE COMPARTMENT
Radiator

8.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Radiator Mounting		
Check radiator assembly and mounting for securement and condition.	Any portion of radiator or mounting system is cracked, damaged, or has loose or missing fasteners not causing leaks or failure (repair).	Any portion of radiator or mounting system is cracked, damaged, or has loose or missing fasteners causing leaks or failure.
b. Cap		
Check condition of radiator cap and perform pressure test.	Radiator cap is hard to open or close (repair).	Radiator cap is missing.
	Radiator cap leaks down slowly at rated pressure (repair).	Radiator cap fails pressure test.
WARNING: ALWAYS USE PROPER PROCEDURES WHEN REMOVING RADIATOR CAP.	Radiator cap is of the wrong pressure rating or is the wrong type of cap (closed/open cooling system) (repair).	
	There is any visible damage to the pressure seat or vacuum relief seat of the cap (repair).	
c. Reservoir		
Check coolant reservoir (including any deaeration or overflow tank) and sight glass (if equipped) for mounting and condition.	Any portion of coolant reservoir or mounting system is cracked or damaged, is leaking, or has loose or missing fasteners (repair).	
d. Fan Shroud		
Check fan shroud for mounting and condition.	Any portion of fan shroud or shroud mounting is cracked, damaged, or has loose or missing fasteners (repair).	Fan shroud is missing.

D. UNDERNEATH BUS
Front Suspension

1.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Front Wheel Bearings		
Inspect front wheel bearings and related components for condition and proper adjustment of bearings. With front wheels raised (wheels unloaded), grasp tire and attempt to rock wheel to check for movement. Spin tire to check for noise and condition of bearings.	There is minor seepage of oil or grease around dust cover (repair).	There is dripping of oil or grease around dust covers.
	NOTE: See page 136 for definitions of fluid "seepage" and "leaks."	Dust cover or fasteners are missing or loose.
		Any noise, binding, or roughness is discovered in bearings.
NOTE: It is important to correctly identify the source of any play. To determine if the play is in wheel bearings, have an assistant fully apply brakes while rechecking play. If movement disappears with brakes applied, then play was in the wheel bearings.		Wheel bearing end play exceeds manufacturer's specifications (maximum of .010" in and out play measured at bearing hub).
b. I-Beam		
Inspect I-beam axle assembly.		I-beam has been cut, modified, or damaged.
		There is any bluing or other evidence that I-beam has been heated.

(Continued on Next Page)

D. UNDERNEATH BUS
Front Suspension

1.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
c. King pins Inspect king pin assemblies for condition and play as follows:		
1) With front wheels raised, grasp tire at top and bottom or, using a pry bar for leverage, attempt to move the wheel assembly in and out. (See Figure 11, page 122.) **NOTE: Wheel bearings must be adjusted properly (or wheel bearing play must be eliminated by locking brakes) before checking king pins.**	Locking pin is loose (repair). End cap O-rings or bolts are loose or missing (repair).	Locking pin is backing out or missing. King pin movement is more than 1/4 inch measured at outside edge of tire (see Figure 11, page 122).
2) Place a pry bar under wheel and lift tire straight up and down to determine condition of thrust bearing.		Vertical (up and down) play in king pin assembly is greater than 0.060" (see Figure 12, page 122), and/or thrust bearing is damaged or missing. **NOTE: If play is beyond specifications, wear may be in the king pin, axle eye, and/or king pin bushings. Vehicle should be grounded if side play at outside edge of tire is greater than 1/4 inch. Do not tighten king pin lock (if equipped) or grease king pin before inspecting king pin assembly play.**

(Continued on Next Page)

D. UNDERNEATH BUS
Front Suspension

1.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
d. Shackles		
Inspect condition of shackles, spring hangers, and pinch bolts.		Any front spring shackle or hanger is cracked or broken. Any front spring shackle or hanger has significant side wear at spring eye. Any front spring shackle or hanger is worn, or pinch bolt is stripped or missing so that spring pin cannot be clamped tightly.
e. Spring Mounts		
Inspect spring mount bracket(s) for condition and securement.		Any front spring mount is broken or cracked. Any front spring mount-to-frame fastener is loose or missing. Frame is cracked at any spring mounting location.

(Continued on Next Page)

D. UNDERNEATH BUS
Front Suspension

1.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
f. Pins and Bushings Inspect pins and bushings as follows: Inspect front spring pins and bushings for wear and lubrication. Check for wear with front axle loaded. Insert pry bar between spring eye and fixed point at frame and pull down. Measure total free play in pins and bushings (see Figure 13, page 122).	Any spring pin assembly will not accept lubrication, or zerk (grease) fitting is damaged or missing (repair).	Total free play (up and down) of pins and bushings exceeds 1/4 inch (2 pin type) or 1/8 inch (1 pin type). (See Figure 13, page 122.) Inner sleeve or rubber bushing type spring pin assembly or assemblies are worn through, or rubber bushing is excessively worn (rubber is compacted or deteriorated, resulting in free play between rubber and spring eye or inner sleeve).
g. A-Frames and Bushings Inspect A-frames and bushings for condition and securement.	Rubber bushing(s) are split, badly deteriorated, or badly extruded from suspension joints (repair).	Rubber bushing(s) are missing. Any A-frame assembly is bent, damaged, broken, or any fasteners are loose or missing. Any A-frame, bushing, or pivot arm has more than 0.050” free play at pivot point. Mounting of bushing assembly or assemblies are not secure.

(Continued on Next Page)

D. UNDERNEATH BUS
Front Suspension

1.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
h. Ball Joints		
Inspect ball joint(s) for condition, securement, and lubrication.	Zerk (grease) fitting is missing or damaged, or ball joint will not take lubrication (repair).	Any ball joint has more than 3/32-inch axial play. Any ball joint nut is loose or missing, or cotter pin is missing. Ball joint to A-frame mounting is cracked or loose, or has been welded.
i. U-Bolts		
Inspect spring U-bolts for condition and securement.	Any U-bolt(s) is misaligned (repair).	There is rust underneath U-bolt nuts indicating possibility of looseness. Any U-bolt, seating plate, shock mount bracket, or nut is loose or missing, cracked, or stripped.
j. Shock Absorbers		
Inspect shocks for condition and securement. **NOTE: See page 136 for definitions of fluid "seepage" and "leaks."**		There is wetness around shock body due to leaking shock fluid. Any shock mounting or fastener is loose, missing, cracked, or broken. Any shock is broken.
	(Continued on Next Page)	Any shock fails to function.

D. UNDERNEATH BUS
Front Suspension

1.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
k. Springs		
Inspect front springs for condition, securement, and alignment.	There are any loose, missing, broken, or worn spring clips (repair).	Any spring leaf is broken, cracked, or missing.
		Spring eye is worn or spread such that bushings are loose in spring eye.
	Any coil or leaf spring has flattened, and ride height is less than manufacturer's specifications (repair).	Any coil spring(s) is non-OEM, broken, insecurely mounted, or non-OEM blocks or spacers are installed.
	Either front spring saddle (if equipped) is worn out or missing (repair).	There is any misalignment of spring leaves or other evidence that center pin is loose or broken.
	Rubber bumper is missing (repair).	Either front coil or leaf spring is worn so that rubber frame bumper is damaged or worn due to frequent bottoming of front suspension.
		Any alignment wedge is loose or damaged.
		On any air bag type spring assembly, air bag is damaged or leaking.
l. Wheel Seals		
Check for condition and leakage.	Either front wheel seal is seeping (note).	Either front wheel seal is damaged or leaking.
NOTE: See page 136 for definitions of fluid "seepage" and "leaks."		

Figure 11 - King Pin Bushing Wear Check

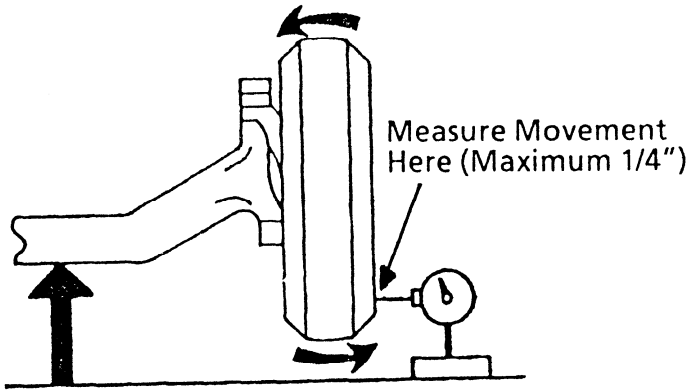


Figure 12 - Spindle Thrust Bearing Check

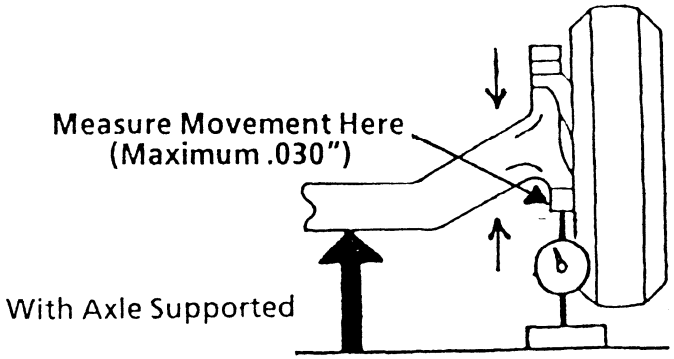
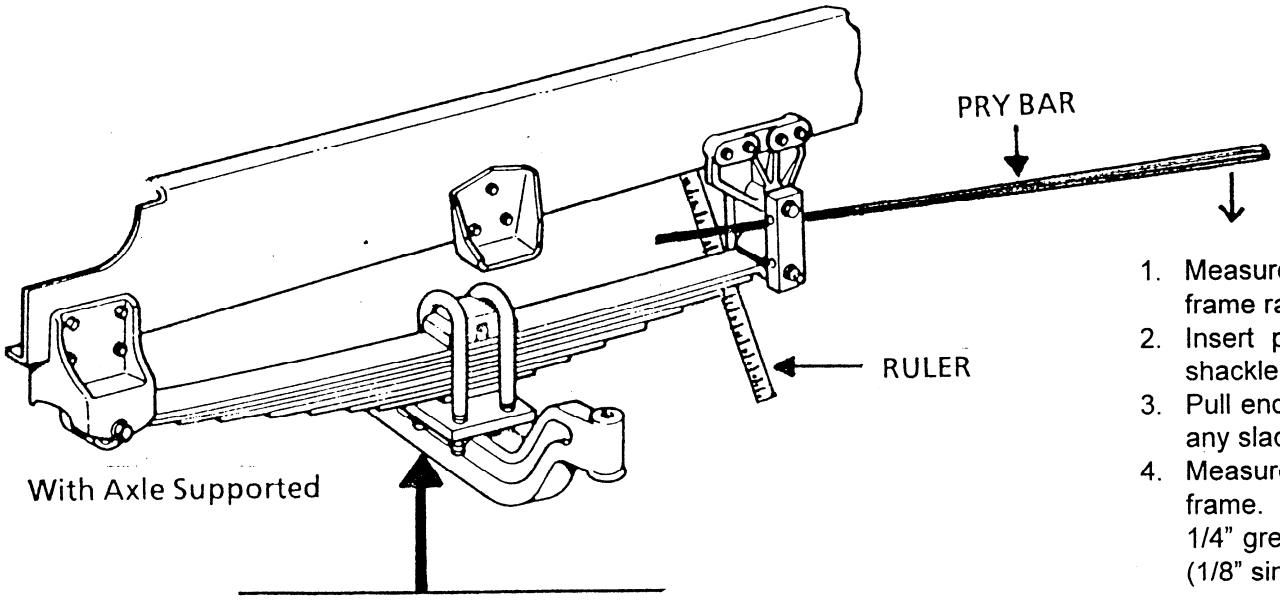


Figure 13 - Front Spring Shackle Pin and Bushing Play Check



1. Measure from top of spring leaf to bottom of frame rail. Note distance.
2. Insert pry bar between spring eye end and shackle bracket or frame.
3. Pull end of pry bar down sufficiently to take up any slack.
4. Measure distance again between spring and frame. This measurement should not be over 1/4" greater than measurement taken in step 1 (1/8" single pin and bushing type).

D. UNDERNEATH BUS
Front Brakes

2.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Brake Hoses Inspect front brake flexible hoses for condition, securement, and routing. **NOTE: See page 136 for definitions of fluid "seepage" and "leaks."**		Any front hydraulic brake flex hose or connection is seeping or leaking fluid, or any air brake hose is leaking air pressure. Any front brake flex hose is kinked, collapsed, bulging, has damaged plies or cord, or is damaged below outer covering. Any front brake flex hose supporting brackets are damaged or have loose fasteners. Any front brake flex hose is rubbing on or routed against other components.
b. Lines Inspect air and hydraulic brakes lines for routing, securement, and condition. **NOTE: See page 136 for definitions of fluid "seepage" and "leaks."**	Brake line bracket(s) or securement system is loose or missing (repair).	Any brake line is bent, crimped, or damaged significantly, restricting air pressure or hydraulic fluid. Any hydraulic brake line or connection is seeping or leaking fluid, or any air brake line is leaking air pressure.

(Continued on Next Page)

D. UNDERNEATH BUS
Front Brakes

2.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
		Any brake line is rubbing on other components or is abraded. Any brake line is not of OEM material, size, or type.
c. Chambers Inspect front brake chamber assemblies for securement, condition, and proper size.		Any front brake chamber, mounting bracket, or hardware is cracked, bent, broken, or missing. Any front brake chamber or mounting fastener is damaged, loose, missing, or of the wrong type. Either front chamber is not OEM size and stroke length.
d. Slacks Inspect slack adjusters and S-cam assemblies for wear, condition, operation, and securement. **NOTE: See Section D.2.j., page 128, (brake adjustment) for procedure to check operation of Automatic Slack Adjusters (ASA).**	Slack adjuster is mounted so that adjuster bolt is facing chamber (repair). **(Continued on Next Page)**	Any portion of slack adjuster or S-cam is missing, broken, cracked, or worn beyond limits. S-cam shaft and/or S-cam bushing total wear (up and down) is greater than 0.040-inch (see Figure 14, page 129). S-cam in and out endplay is more than 0.060-inch (see Figure 14, page 129).

D. UNDERNEATH BUS
Front Brakes

2.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
		S-cam snap ring is missing. Slack adjuster has frozen or stripped worm gear or ratchet assembly.
e. Pushrods Inspect pushrod assemblies for condition, securement, and alignment.		Any portion of pushrod assembly (locknut, pushrod, clevis and pin, or cotter pin) is loose, missing, or damaged. Pushrod is rubbing against body of chamber, or chamber is misaligned. Pushrods on left and right sides are not mounted in identical (same) slack adjuster location hole (same effective slack adjuster length).
f. Linings Inspect linings and foundation brake hardware for contamination, wear, damage, and securement.	There is a significant difference in lining thickness between the left and right sides (repair).	Front brake lining (riveted type shoe) is less than 3/16-inch thick (Q-type) or 1/4-inch (Q-plus-type) above metal of shoe (shoe table) at the center of the shoe. For bonded type linings, front brake lining is worn to within 1/16 inch of shoe table (face of shoe). Front brake lining is worn to within 1/16-inch of any rivet or bolt head.

(Continued on Next Page)

D. UNDERNEATH BUS
Front Brakes

2.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
		Any foundation brake assembly does not have at least one (1) lining inspection hole. Lining is broken, cracked, or loose on shoe. Friction surface is contaminated with oil, grease, or brake fluid. There is any shimming material between lining and shoe. Lining is not proper size. Shoe platform or webbing is cracked or damaged. There is any loose, damaged, or missing foundation brake hardware within the drum.
g. Drums Inspect front brake drum(s) for condition and size.	**(Continued on Next Page)**	There is any crack (other than heat checks) in any drum. There is more than 0.060-inch wear in drum friction surface (inside diameter is more than 0.120-inch over original). There is any grease, oil, or brake fluid on inside of drum.

D. UNDERNEATH BUS
Front Brakes

2.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
		Drum is not mounted securely to hub, or fasteners are loose. Drum is not centered on hub (if equipped), causing more than 0.010-inch out of round.
h. Rotors Inspect front brake rotor(s) for mounting, thickness, and condition.		Rotor mounting is not secure. Rotor has excessive runout (beyond manufacturer's specifications), causing a pulsating in brake pedal. Rotor has cracks (other than heat checks) or other mechanical defects. Friction surface is contaminated with oil, grease, or brake fluid. Rotor thickness is less than manufacturer's specifications stamped on rotor. Any rotor friction surface is significantly grooved or damaged.
i. Wheel Cylinders or Calipers Inspect wheel cylinders or calipers for seepage and leaks, mounting, and condition.	Any wheel cylinder or caliper dust boot is damaged or missing (repair). **(Continued on Next Page)**	Any wheel cylinder or caliper is not securely mounted or has loose or missing fasteners.

D. UNDERNEATH BUS
Front Brakes

2.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
NOTE: See page 136 for definitions of fluid "seepage" and "leaks."		Any wheel cylinder or caliper is seeping or leaking.
j. Adjust Brakes		There is uneven lining or pad wear, rotor or drum damage, evidence of dragging, or other evidence that any wheel cylinder or caliper may be sticking.
1) For air wedge brakes or hydraulic drum brakes, adjust front brakes at every monthly inspection as follows:		There is any damage or condition, which prevents proper adjustment of air wedge or hydraulic drum brakes.
a) Brakes must be adjusted until brake drum does not turn.		
b) Back off brake adjustment until there is slight drag on drum surface (0.020" clearance between lining and drum).		
2) For all Manual Slack Adjuster (MSA) equipped S-cam brakes or air disk brakes, each brake chamber pushrod travel must be measured and brakes must be adjusted at every required inspection at all wheel positions (see figure 15, page 130). Push rod travel must not exceed limits shown in "Maximum stroke length at which brakes should be adjusted" column in chart 13 on page 131.		Any MSA equipped S-cam or air disk brake cannot be adjusted to bring pushrod travel within limits shown in Chart 13 on Page 131 of this manual.

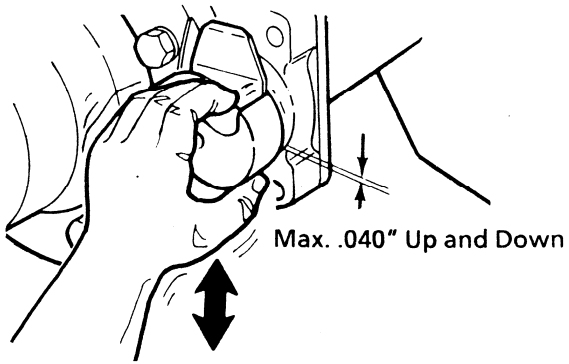
(Continued on Next Page)

D. UNDERNEATH BUS
Front Brakes

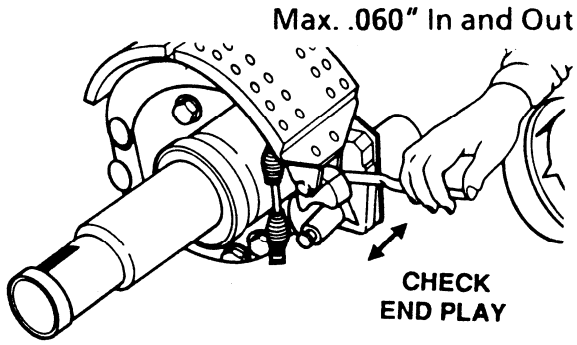
2.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
4/7/09 3) Do not adjust Automatic Slack Adjuster (ASA) equipped brakes. Pushrod travel must be measured and must not exceed limits shown in "Maximum stroke length at which brakes should be adjusted" column in chart 13 on page 131. If the pushrod travel measurement exceeds the limits, the foundation brakes, slack adjusters, pushrods and chambers must all be inspected and repaired or replaced if found defective. Correctly installed, and properly working Automatic Slack Adjusters should keep the brakes in adjustment throughout the life of the linings.		Any ASA is damaged or malfunctioning, or pushrod travel exceeds the limits shown in the "Maximum stroke length at which brakes should be adjusted" column in Chart 13, Page 131.

Figure 14



S-cam Bushing Up and Down Play



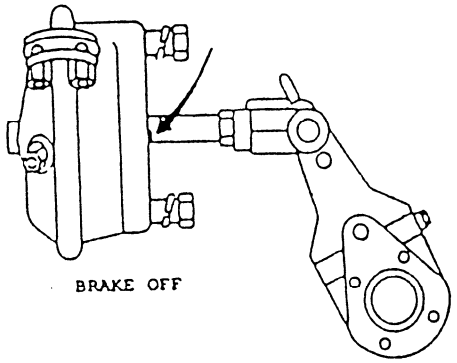
S-cam In and Out Play

FIGURE 15

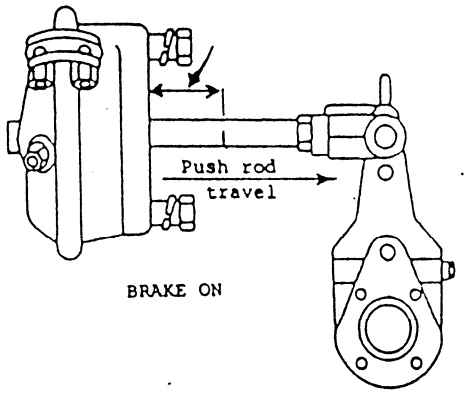
PROCEDURE FOR MEASURING PUSH ROD TRAVEL

Brake chamber push rod travel shall not exceed those specifications relating to maximum stroke at which brakes should be readjusted. Performance of the brake push rod travel inspection should be done with the brake application air pressure in the range of 80 - 90 p.s.i. when measuring total stroke to determine proper brake adjustment. Brakes must be fully applied to conduct this test.

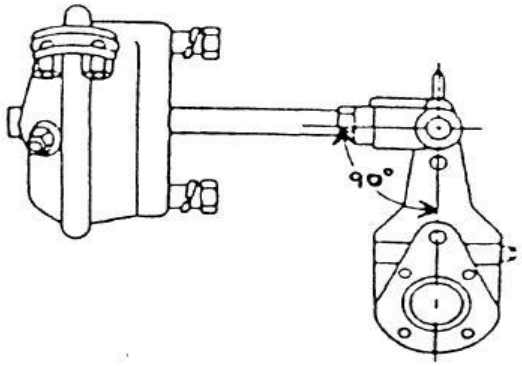
CAUTION: Chock wheels before commencing this inspection as vehicle emergency brake(s) must be off.



With brakes off, mark push rod at chamber



Apply brakes, measure distance of mark from chamber



Note: When brakes are properly adjusted and full applied, the slack adjuster should be at an angle of 90° measured from center line of adjuster to push rod.

NOTE: Refer to chart 13, page 131 for maximum pushrod travel (stroke) at which brakes should be adjusted.

CHART 13
(Dimensions in Inches)

Type	Maximum Stroke	Maximum stroke with brakes adjusted	Maximum stroke at which brakes should be adjusted
CLAMP-TYPE BRAKE CHAMBER			
6	1-5/8	Should be as short as possible without brakes dragging	1-1/4
9	1-3/4		1-3/8
12	1-3/4		1-3/8
16	2-1/4		1-3/4
20	2-1/4		1-3/4
24	2-1/4		1-3/4
30	2-1/2		2
36	3		2-1/4
"LONG STROKE" CLAMP-TYPE BRAKE CHAMBER			
16	2-1/2	Should be as short as possible without brakes dragging	2
20	2-1/2		2
24	2-1/2		2
24+	3		2-1/2
30	3-3/8		2-1/2
ROTOCHAMBER			
9	2	Should be as short as possible without brakes dragging	1-5/8
12	2		1-5/8
16	2-1/2		2
20	2-1/2		2
24	2-1/2		2
30	3		2-1/2
36	3-1/2		2-3/4
50	4		3-1/4
AIR DISC BRAKES			
12	1-3/8	Should be as short as possible without brakes dragging	1-3/8
16	1-1/2		1-3/4
20	1-5/8		1-3/4
24	1-3/4		1-3/4
30	1-7/8		2

D. UNDERNEATH BUS
3. Engine/Transmission Mounts, Starter Mounting

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Engine/Transmission Mounts		
Inspect engine and transmission mounts for condition and securement.		Any mounting fasteners are loose, missing, or broken. Any mount is cracked or has deteriorated rubber.
b. Starter Mounting		
Inspect starter for securement and condition. Check for presence of heat shield (if equipped).	Heat shield (if equipped) is loose (repair).	Any starter mounting bolt, stud, or nut is loose, damaged, broken, or missing. Starter is damaged or loose. Heat shield looseness or damage could short positive terminal to ground. Heat shield (if equipped) is missing or damaged.

D. UNDERNEATH BUS
Transmission

4.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Transmission Bolts		
Inspect transmission assembly and mounting fasteners for condition and securement.	Any transmission assembly fastener(s) is loose, missing, or damaged (repair).	Transmission is not mounted securely to flywheel housing. There is any external indication that any torque converter bolt is loose or missing.
b. Linkage		
Inspect transmission linkage for routing, condition, and securement.	Modulator (TV) cable or vacuum hose is routed where it is subject to excessive heat or abrasion (note). Any linkage hardware or fasteners are loose (repair). Modulator (TV) cable is exposed or casing is damaged (repair). Modulator vacuum hose is deteriorated or loose (repair).	Linkage is bent, damaged, binding, or severely misadjusted. Any linkage hardware or fasteners are missing or linkage is damaged so as to cause a sticking or binding condition. Modulator vacuum hose is leaking or not connected.
c. Lines		
Inspect transmission lines for securement, routing, and condition.	Any transmission line(s) is unsecured (note). **(Continued on Next Page)**	Any transmission line is crimped. There is any transmission line of improper type.

D. UNDERNEATH BUS
Transmission

4.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
		Any transmission line is worn or deteriorated to the point that failure could occur, or routed subject to excessive heat or abrasion.
d. Filter		
Inspect transmission external filter assembly (if equipped) for securement and condition.	External filter mounting is insecure or has loose or missing fasteners (repair). Filter canister is damaged (repair).	
e. Cooler		
Inspect transmission cooler (as equipped) for securement and condition.	Mounting of separate transmission cooler (if equipped) is insecure or has loose or missing fasteners (repair).	Transmission cooler, including all hose connections, is cracked or damaged.
f. Clutch		
1. Operation		
a) Check pedal, linkage, clutch, and throw-out bearing for wear, slippage, and abnormal noises in the engaged and released positions.	Loose nuts and bolts (repair). Noisy release bearing (note). Clutch out of adjustment (repair). **(Continued on Next Page)**	Cannot adjust clutch to specs. Excessively noisy release bearing. Clutch slips, grabs, or has excessive chatter when engaging clutch. Binding or sticking clutch linkage or return spring. Transmission is hard to shift.

D. UNDERNEATH BUS
Transmission

	Inspection Procedures:	Repair (or note) if:	Out of Service if:
4.	b) Visually check clutch pedal pad for wear.	Worn pedal cover pad (repair).	Missing pedal cover pad.
	c) Check clutch master and slave cylinders for hydraulic seepage or leaks and operation (if equipped).	**NOTE: See page 136 for definitions of fluid "seepage" and "leaks."**	Master or slave cylinder is seeping, leaking, or inoperable.
	Adjustment		
2.	Check "free play" travel of the clutch pedal. This is the first easy movement of the clutch pedal and should be no more than 1-1/2-inch and no less than 3/4- inch of travel.	"Free play" is out of adjustment (repair).	Clutch slips, grabs, or chatters after adjusting "free play" travel. No "free play" adjustments can be made.

D. UNDERNEATH BUS
Fluid Leaks

NOTE: Leaks and Seepage are types of fluid loss.

A fluid "Leak" is defined as enough fluid loss to cause dripping fluid. Leaking fluid can also be "slung" from rotating assemblies. Fluid "Seepage" is defined as fluid loss that may cause dampness or staining, but not dripping or slung fluid.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Oil		
Inspect for engine oil leaks at all potential locations and determine severity.	Engine oil leakage is causing deterioration of any rubber parts, such as steering linkage boots, hoses, etc. (repair).	
	Engine oil is dripping at any location except on exhaust system (repair).	Engine oil is dripping on any portion of exhaust system.
	There is a drip shield installed to divert leaking oil from the exhaust system (repair).	
b. Coolant		
Inspect all potential locations for coolant leaks.	There is coolant seeping or leaking at radiator, hoses, heater core, engine oil cooler, thermostat housing, head gaskets, freeze plugs, reservoir, water pump, or other potential locations (repair).	Leakage is excessive and could result in imminent engine failure.

(Continued on Next Page)

D. UNDERNEATH BUS
Fluid Leaks

5.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
c. Transmission		
Inspect for transmission fluid leaks at all potential locations and determine severity.	Transmission fluid is causing deterioration of any rubber parts, such as steering linkage boots, hoses, etc. (repair).	
NOTE: See page 136 for definitions of fluid "seepage" and "leaks."	Transmission fluid is seeping, or is leaking onto anything other than the exhaust system (repair).	Transmission fluid is dripping on any portion of exhaust system.
d. Power Steering		
Inspect for power steering fluid leaks at all potential locations and determine severity.	Power steering fluid is causing deterioration of any rubber parts, such as steering linkage boots, hoses, etc. (repair). Power steering fluid is seeping (repair).	Power steering fluid is dripping. Power steering reservoir cap or dipstick is missing.

D. UNDERNEATH BUS
Fuel Tank

6.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Leaks Inspect fuel tank assembly for leaks. **NOTE: See page 136 for definitions of fluid "seepage" and "leaks."**		There is any fuel leakage from the tank, sending unit, connections, vent, or cap, or cap is missing. The fuel tank is cracked. Any hose connection(s) is loose at the tank.
b. Mounting Inspect fuel tank mounting system and barrier (if equipped) for securement and condition.		Any portion of fuel tank mounting system (including support brackets, retaining straps, and chassis frame) is missing, loose, cracked, or broken. Any fuel tank mounting fasteners are loose or missing. Barrier assembly (if required) is damaged, insecurely mounted, or missing.

(Continued on Next Page)

D. UNDERNEATH BUS
Fuel Tank

6.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
c. Hoses		
Inspect all fuel lines, hoses, and under-bus fuel system components for routing, securement, and condition. **NOTE: See page 136 for definitions of fluid "seepage" and "leaks."**		Any fuel line or hose is unsecured or is routed subject to excessive heat or abrasion. Any fuel line or hose is deteriorated or damaged (including cracks or any damage that may cause seepage or leaks) or clamps are loose or missing. Any under-bus fuel system filter, water separator, or other components are insecurely mounted, cracked, or damaged.
d. Wiring		
Inspect fuel tank sender unit wiring for securement, routing, and condition.	Any wiring or connection has damaged or missing insulation (repair).	Any portion of sending unit wiring (including ground) or connections is unsecured or is routed subject to excessive heat or abrasion.

D. UNDERNEATH BUS
Brake Equipment

7.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Brake Lines		
Inspect all brake hoses, lines, and connections for routing, securement, and condition. **NOTE: See page 136 for definitions of fluid "seepage" and "leaks."** **NOTE: External layer weather cracking only shall not be cause for rejection.**	Any brake hose or line is unsecured (repair).	There is any audible air leak or visible hydraulic brake fluid seepage or leak. Any brake line or hose is routed subject to excessive heat or abrasion. Any brake line or hose is deteriorated or damaged to the point that failure could occur (frayed, thin wall, rubber contaminated with oil, crimped, etc.). Any brake line or hose connection is loose.
b. Brake Valves		
Inspect all brake system valves for securement and condition.		There are any audible air leaks or visible hydraulic fluid leaks or seepage from any brake valve. Any brake valve is not mounted securely, is cracked, or is damaged.
c. Reservoir Mounting		
Inspect reservoirs (air and vacuum tanks) for securement and condition.		Any reservoir mounting, brackets, straps or fasteners are cracked, loose, or missing.

(Continued on Next Page)

D. UNDERNEATH BUS
Brake Equipment

7.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
d. Bleed Reservoirs		
1) With air system fully charged, check manual operation of safety relief valve.		Safety relief valve leaks or does not release pressure.
2) Partially open manual petcock valve on the first (wet) tank.		
3) Allow to drain until any moisture (water) or contamination is drained.	There is moisture in reservoir (desiccant type air dryer equipped vehicles only; repair).	There is excessive sludge or oil contamination in the reservoir (more than eight (8) fluid ounces). Reservoir leaks due to corrosion or is cracked.
e. Antilock Brake System (ABS)		
Perform a visual inspection of all ABS components including wiring, connectors, and controllers.	Wiring or other components have been damaged, or are routed or located subject to abrasion or excessive heat, but ABS is operating normally (repair).	Visual inspection reveals that ABS component(s) are severely damaged, missing, and/or are no longer working. **NOTE: Wiring from ABS controller(s) to wheel speed sensor(s) that has been abraded or otherwise damaged, exposing any wire conductor or grounding sheath, may cause failure of the antilock brake system. This damage is considered "severe."**

D. UNDERNEATH BUS
Driveline

8.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Driveshafts		
Inspect driveshafts for condition.	Any driveshaft balancing weight (if originally equipped) is missing (repair).	Any driveshaft is bent or seriously dented.
	There is any foreign matter wrapped around driveshaft (repair).	There are any cracks or other damage in driveshaft that could cause structural failure.
	Shafts are assembled out of phase (repair).	
b. U-Joints		
Prior to lubrication, inspect U-joints or constant velocity (CV) joints (if equipped) for condition, phasing (alignment of joints), lubrication, and presence of all hardware.	U-joints or CV joints are dry of lubrication, or zerk (grease) fitting(s) (if equipped) is missing, clogged, or inaccessible (repair).	There are any missing hardware or fasteners in any U-joint or CV joint assembly.
		Any U-joint has significant cross-shaft-to-bearing cup play, or CV joint has significant play.
		Any U-joint or CV joint shows evidence of significant rusting of bearings.
	(Continued on Next Page)	Any bearing cup is loose in yoke.
		Any U-joint is cracked or broken.

D. UNDERNEATH BUS
Driveline

8.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
c. Yokes		
Inspect driveshaft yokes for condition and lubrication.	Driveshaft splines are not lubricated (repair). Dust cap on yoke is missing (repair). Zerk (grease) fitting is missing or clogged (repair). Cork washer in dust cap is missing (note).	Any yoke has significant play in splines. Any yoke is cracked or damaged.
d. Hanger Bearings		
Inspect hanger bearings and rubber insulators for condition and securement.	Hanger bearing rubber insulator is deteriorated, damaged, or oil soaked (note). Hanger bearing support is misaligned (repair).	Bearing outer race is loose in insulator, or inner race is loose on shaft. There is significant play in hanger bearing. There is any missing or damaged hardware or fasteners in hanger bearing or support assembly.
e. Guards		
Inspect for presence and condition of driveshaft guards.	Any driveshaft guard is bent or damaged (repair).	Any driveshaft guard is missing, or has loose or damaged mounting fasteners.

(Continued on Next Page)

D. UNDERNEATH BUS
Driveline

8.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
f. Driveshaft Parking Brake Inspect driveshaft parking brake assembly for condition, mounting, securement, and adjustment of linings, drum, linkage, and all other related hardware.		Lining is worn down to 2/32-inch from top of rivet head. Lining is contaminated with grease or oil. Lining is broken, cracked, or loose. Drum is cracked or has excessive heat damage or scoring of friction surface. Any actuating or mounting hardware or fastener is damaged, loose, or missing. Parking brake is not adjusted per manufacturer's specifications.

D. UNDERNEATH BUS
Rear Suspension

9.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Axle Housing		
Inspect axle housing for condition and leakage. **NOTE: See page 136 for definitions of fluid "seepage" and "leaks."**	Axle housing is seeping lubricant (note).	Any portion of axle housing is cracked or bent. Any portion of axle housing is leaking lubricant due to cracks, porous metal, or defective weld. There is any leakage at or around axle housing ends.
b. Vent		
Inspect condition of axle housing vent.	Vent cap is clogged (repair). Vent hose (if originally equipped) is cracked, clogged, or missing (repair).	Axle vent is not functional or is missing.
c. Differential		
Inspect differential assembly for condition, lubricant level, and leakage. **NOTE: See page 136 for definitions of fluid "seepage" and "leaks."**	Lubricant level is low (repair). Differential gaskets or seals are leaking (repair). Differential gaskets or seals are seeping (note). **(Continued on Next Page)**	There is no lubricant in the differential. Any external differential hardware or fasteners are loose or missing. Differential pinion yoke has endplay or sideplay exceeding manufacturer's specifications. Pinion/yoke end nut is loose or missing.

D. UNDERNEATH BUS
Rear Suspension

9.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
d. Springs		
Inspect rear springs for condition, securement, and alignment.	There are any loose, missing, broken, or worn spring clips (note).	Any leaf spring is broken or missing.
	Any leaf spring or air suspension ride height is less than manufacturer's specifications (repair).	On any air bag type spring assembly, air bag is damaged or leaking, or air lines and valving are damaged or leaking.
		Air ride pivot pins and bushings are loose.
		There is any misalignment of spring leaves or other evidence that centering pin is loose or broken.
	Rubber frame bumper is missing (repair).	Either rear leaf spring is worn to the point that suspension bottoming has damaged rubber frame bumper.
e. U-Bolts		
Inspect spring U-bolts for condition and securement.	Any U-bolt is misaligned (repair).	There is rust underneath U-bolt nuts indicating possibility of looseness.
		Any U-bolt, U-bolt seating plate, shock mount bracket, or nut, is loose, missing, cracked, or stripped.

(Continued on Next Page)

D. UNDERNEATH BUS
Rear Suspension

9.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
f. Shock Absorbers Inspect rear shocks for condition and securement. **NOTE: See page 136 for definitions of fluid "seepage" and "leaks."**		Any shock is broken. Any shock fails to function. Any shock mounting or fastener is loose, missing, cracked, or broken. There is any wetness around shock body due to leaking shock fluid.
g. Shackles Inspect rear suspension shackles, spring hangers, and hanger pinch bolts for condition and securement.		Any rear spring shackle or hanger is cracked or broken. Any rear spring shackle or hanger is worn, or any pinch bolt is stripped or missing, preventing the spring pin from being clamped tightly.

(Continued on Next Page)

D. UNDERNEATH BUS
Rear Suspension

9.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
h. Pins and Bushings Inspect rear spring pins and bushings for wear and lubrication. See Figure 13, page 122, for shackle type system on checking play in pins and bushings. For other types of pin and bushing configurations, see manufacturer's service manual.	Any grease-able spring pin assembly will not accept lubrication, or Zerk (grease) fitting is damaged or missing (repair).	Inner sleeve on rubber type spring pin assemblies is worn through, or rubber bushing is excessively worn (rubber is compacted or deteriorated, resulting in free play between rubber and spring eye or inner sleeve). Rear spring pin bushing (metal type bushing) is worn through. Total free play (up and down) of pin and bushing exceeds 1/8-inch for single pin type. On system using two pins and bushings, combined free play exceeds 1/4-inch.

(Continued on Next Page)

D. UNDERNEATH BUS
Rear Suspension

9.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
i. Hangers		
Inspect hangers for mounting and condition.		Any spring hanger or bracket is cracked or broken, or any mounting fastener is loose or missing.
j. Seals		
Inspect rear wheel seals for condition and leakage.	There is wetness or dripping of oil or grease around axle flange (repair).	Either rear wheel seal is damaged or leaking excessively.
NOTE: See page 136 for definitions of fluid "seepage" and "leaks."		Any axle flange stud or nut is loose or missing.
k. Wheel Bearings		
Inspect rear wheel bearings for condition and proper adjustment of bearings.	**Note: Rear wheel bearing in-out play should be 0.000 inches.**	
1) Raise rear wheels (wheels unloaded) and release parking brake.		
2) Grasp tire and attempt to rock wheel assembly to check for movement.		There is any detectable looseness or roughness in rear wheel bearings.

D. UNDERNEATH BUS
Rear Brakes

10.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Hoses		
Inspect rear brake flexible hoses for condition, securement, and routing.		Any rear brake flex hose or connection is seeping or leaking fluid, or leaking air pressure.
NOTE: See page 136 for definitions of fluid "seepage" and "leaks."		Any rear brake flex hose is kinked, collapsed, bulging, has damaged plies or cord, or is damaged below outer covering.
		Any rear brake flex hose supporting brackets are damaged or have loose fasteners.
		Any rear brake flex hose is rubbing on or routed against other components.
b. Lines		
Inspect air and hydraulic brake lines for routing, securement, and condition.	Brake line bracket(s) or securement system is loose or missing (repair).	Any brake line is bent, crimped, or damaged significantly, restricting air pressure or hydraulic fluid.
NOTE: See page 136 for definitions of fluid "seepage" and "leaks."		Any brake line or connection is seeping or leaking hydraulic fluid, or leaking air pressure.
		Any brake line is rubbing on other components or is abraded.
		Any brake line is not of OEM material, size, or type.

(Continued on Next Page)

D. UNDERNEATH BUS
Rear Brakes

10.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
c. Chambers Inspect rear brake chamber assemblies for securement, condition, and proper size.		Any rear chamber-mounting bracket or hardware is cracked, bent, broken or missing. Any rear brake chamber or mounting fastener is damaged, loose, missing, or of the wrong type. Either rear chamber is not OEM size and stroke length.
d. Slacks Inspect slack adjusters and S-cam assemblies for wear, condition, operation, and securement. **NOTE: See Section D.10. j., page 156, on brake adjustment for procedure to check operation of Automatic Slack Adjusters (ASA).**	Slack adjuster is mounted so that adjuster bolt is facing chamber (repair).	Any portion of slack adjuster or S-cam is missing, broken, cracked, or badly worn. S-cam shaft and/or S-cam bushing total wear (up and down) is greater than 0.040" (see figure 14, page 129). S-cam in and out end play is more than 0.060” (see figure 14, page 129). S-cam snap ring is missing. Slack adjuster has frozen or stripped worm gear or ratchet assembly.

(Continued on Next Page)

D. UNDERNEATH BUS
10. Rear Brakes

Inspection Procedures:	Repair (or note) if:	Out of Service if:
e. Pushrods Inspect pushrod assemblies for condition, securement, and alignment.		Any portion of pushrod assembly (locknut, pushrod, clevis and pin, or cotter pin) is loose, missing, or damaged. Pushrod is rubbing against body of chamber, or chamber is misaligned. Pushrods on left and right sides are not mounted in identical (same) slack adjuster location holes (same effective slack adjuster length).

(Continued on Next Page)

D. UNDERNEATH BUS
10. Rear Brakes

Inspection Procedures:	Repair (or note) if:	Out of Service if:
f. Linings		
Inspect linings and foundation brake hardware for contamination, wear, damage, and securement.	There is a significant difference in lining thickness between the left and right sides (repair). Rear brake lining is less than 5/16-inch thick at center of shoe (on brake blocks with original 3/4-inch thickness) (repair). **(Continued on Next Page)**	Rear brake lining is less than 1/4-inch thick at center of shoe (on brake blocks with original 3/4-inch thickness). Rear brake lining is worn to within 1/16-inch of any rivet or bolt head. For bonded linings, rear brake lining is worn to within 1/16-inch of shoe table (at center of shoe). Any foundation brake assembly does not have at least one (1) lining inspection hole. Lining is broken, cracked, or loose on shoe. Friction surface is contaminated with oil, grease, or brake fluid. There is any shimming material between lining and shoe. Lining is not proper size. Shoe platform or webbing is cracked or damaged. There is any loose, damaged, or missing foundation brake hardware within the drum.

D. UNDERNEATH BUS
10. Rear Brakes

Inspection Procedures:	Repair (or note) if:	Out of Service if:
g. Drums Inspect rear brake drum(s) for condition and oversize.		There is any crack (other than heat checks) in drum. There is more than 0.060” wear in drum friction surface (inside diameter is more than 0.120” over original). There is any grease, oil, or brake fluid on inside of drum. Drum is not mounted securely to hub, or fasteners are loose. Drum is not centered on hub (if equipped), causing more than 0.010” out of round.
	(Continued on Next Page)	

D. UNDERNEATH BUS
10. Rear Brakes

Inspection Procedures:	Repair (or note) if:	Out of Service if:
h. Rotors		
Inspect rear brake rotor(s) for mounting, thickness, and condition.		Rotor mounting is not secure. Rotor has excessive runout (beyond manufacturer's specifications), causing a pulsating in brake pedal. Rotor has cracks (other than heat checks) or other mechanical defects. Friction surface is contaminated with oil, grease, or brake fluid. Rotor thickness is less than manufacturer's specifications stamped on rotor. Any rotor friction surface is significantly grooved or damaged.
i. Wheel Cylinders or Calipers		
Inspect wheel cylinder(s) or caliper(s) for seepage, leaks, mounting, and condition. **NOTE: See page 136 for definitions of fluid "seepage" and "leaks."**	Any wheel cylinder or caliper dust boot is damaged or missing (repair). **(Continued on Next Page)**	Any wheel cylinder or caliper is not securely mounted or has loose or missing fasteners. Any wheel cylinder or caliper is seeping or leaking. There is uneven lining or pad wear, rotor or drum damage, evidence of dragging, or other evidence that any wheel cylinder or caliper may be sticking.

D. UNDERNEATH BUS
10. Rear Brakes

Inspection Procedures:	Repair (or note) if:	Out of Service if:
j. Adjust Brakes		
1) For air wedge brakes and hydraulic drum brakes, adjust rear brakes at every monthly inspection as follows:		There is any damage or condition that prevents proper adjustment of brakes.
a) Brakes must be adjusted until brake drum does not turn.		
b) Back off brake adjustment until there is slight drag on drum surface 0.020" clearance between lining and drum.		
2) For all Manual Slack Adjuster (MSA) equipped S-cam brakes or air disk brakes, brake chamber pushrod travel must be measured and brakes must be adjusted at every required inspection at all wheel positions (see figure 15, page 130). Push rod travel must not exceed limits shown in "Maximum stroke length at which brakes should be adjusted" column in chart 13 on page 131.		Any MSA equipped S-cam or air disk brake cannot be adjusted to bring pushrod travel within limits shown in Chart 13 on Page 131 of this manual.

(Continued on Next Page)

D. UNDERNEATH BUS
Rear Brakes

~~10.~~ Inspection Procedures:	Repair (or note) if:	Out of Service if:
4/7/09 3) Do not adjust Automatic Slack Adjuster (ASA) equipped brakes. Pushrod travel must be measured and must not exceed limits shown in "Maximum stroke length at which brakes should be adjusted" column in chart 13 on page 131. If the pushrod travel measurement exceeds the limits, the foundation brakes, slack adjusters, pushrods and chambers must all be inspected and repaired or replaced if found defective. Correctly installed, and properly working Automatic Slack Adjusters should keep the brakes in adjustment throughout the life of the linings.		Any ASA is damaged or malfunctioning, or pushrod travel exceeds the limits shown in the "Maximum stroke length at which brakes should be adjusted" column in Chart 13, Page 131.

D. UNDERNEATH BUS
11. Body Securement and Structure

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Body Hold-downs Inspect for securement and condition of all body hold-downs, chassis cowl mounts, and frame pads. Body hold-downs include any J-bolt, U-bolt, or clamp type hold down used to secure body to chassis frame.	One or two body hold-downs are loose or misaligned, or there are any cracks or stripped fasteners at floor sill securement points (repair). Padding between frame rails and floor sills is missing or grossly misaligned (repair).	Any OEM installed body hold-down or cowl mount is missing. Three (3) or more body hold-downs are loose, misaligned, or have missing hardware. There are three (3) or more body hold-downs with cracks or stripped nuts at floor sill securement point.
b. Floor Inspect condition of floor structure, sills, and braces.	There are any minor cracks in floor sills or braces or in welds (repair).	There are any holes or cracks in floor sheet metal, creating an opening to the passenger compartment. Entire cross section of any floor sill or brace is broken. There is any broken weld or mounting of a floor sill or brace, resulting in complete separation more than one (1) foot in length. There is any broken weld in the mounting of the bracing (K-member) at the front of the body floor (between stepwell and driver's area).

(Continued on Next Page)

D. UNDERNEATH BUS
11. Body Securement and Structure

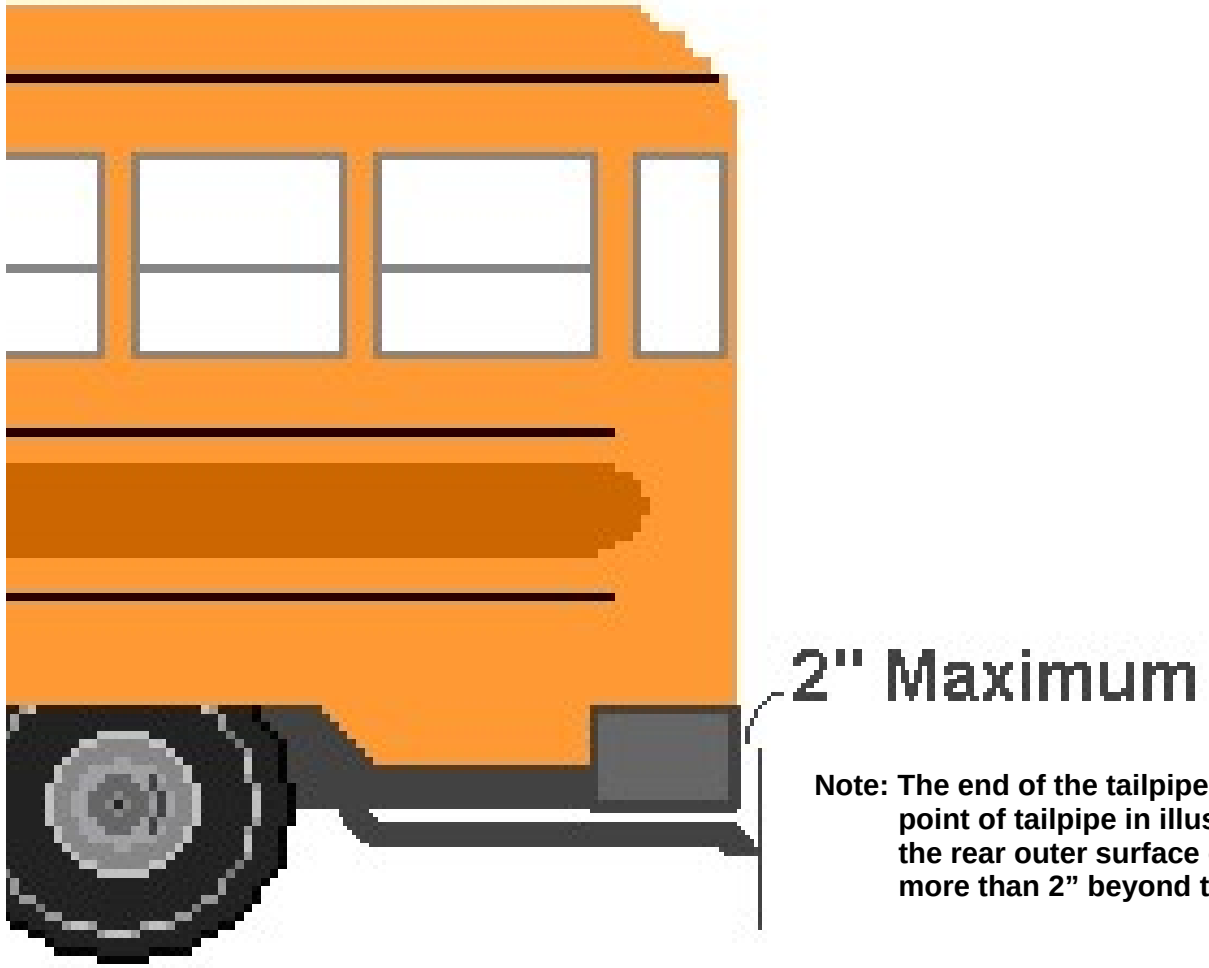
Inspection Procedures:	Repair (or note) if:	Out of Service if:
c. Outriggers Inspect body outriggers and hardware for condition and securement.		Any OEM installed outrigger is missing. Any body outrigger is cracked or has loose or missing hardware.
d. Braces Inspect for condition and securement of all chassis and body braces.	There is any cracked brace underneath the body (repair).	Any bumper brace is broken, cracked, or missing.
e. Skirts Inspect body skirts (and luggage compartments, if equipped) for securement and condition.	Any body skirt, skirt brace, or luggage compartment has cracked or broken sheet metal or mounting points (repair). Luggage compartment door latch, hinge, or lock is sticking, damaged, or malfunctioning (repair).	
f. Frame Rails Inspect condition of chassis frame rails, crossmembers, and all hardware attachment points.		There is any crack in either frame rail or any crossmember. There is any loose or missing rivet or other fastener securing a crossmember to the frame.

D. UNDERNEATH BUS
Exhaust Systems

12. Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Exhaust Leaks		
With engine running and at operating temperature, inspect exhaust system for leaks, condition, and securement.	Any exhaust junction gasket or hardware is broken or missing (repair). There is any physical damage to exhaust system (note).	There is any leakage that is audible or can be felt around any portion of the exhaust system including manifold(s), pipe sections, or any junction.
b. Mounting		
Inspect mounting of the exhaust system.	There is any exhaust system hanger that is not securely mounted (repair). Any exhaust pipe or clamp is loose (repair).	There is any originally installed exhaust hanger that is missing, broken, or detached from exhaust system or frame mounting point. Any clamp is missing.
c. Mufflers		
Inspect condition of the muffler.	The muffler is cracked (repair). There is other significant physical damage to the muffler (note).	The muffler is leaking.
d. Tailpipe		
Inspect condition of tailpipe and ensure that it extends beyond the rear bumper and exits to the left of the left frame rail. If equipped with regenerative type exhaust system or starting 1998, for Type D rear engine buses, see 2008 specifications for tailpipe exceptions.	The tailpipe is cracked (repair). There is other significant physical damage to the tailpipe (note).	The tailpipe is leaking. The tailpipe does not extend to at least the rear outer surface of the rear bumper, or the tailpipe extends more than 2 inches beyond the rear outer surface of the rear bumper (see Figure 16 on Page 161), or the tailpipe does not exit to the left of the left frame rail.

Figure 16

Tailpipe Length



Note: The end of the tailpipe (see vertical line touching rearmost point of tailpipe in illustration at left) must extend beyond the rear outer surface of the bumper, but it must not extend more than 2” beyond the rear surface of the bumper.

D. UNDERNEATH BUS
13. Wheels and Tires

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Tread Depth Inspect and measure all tires for tread depth and record on inspection form.		Tread depth of any tire is less than: • Front: 4/32” • Rear: 2/32” measured at three (3) points spaced equally around the circumference of the tire in the same major tread groove. Do not measure at wear bars. All three points must be less than limits above before tire is required to be out-of-service. Measurement shall be taken at the most worn major tread groove of the tire. Any single point of the most worn major tread groove of any tire measures less than: • Front: 2/32” • Rear: 1/32” There is evidence that any recapped tire has been re-grooved. Any front tire is recapped or re-grooved type tire. There is evidence that any tire has been re-grooved using a procedure not approved by tire manufacturer or dealer.

(Continued on Next Page)

D. UNDERNEATH BUS
13. Wheels and Tires

Inspection Procedures:	Repair (or note) if:	Out of Service if:
b. Pressure		
With tire cold, check pressures of all tires and record on inspection form. NOTE: Refer to Tire and Rim Association Manual for correct air pressure for your specific tire and load rating.		Pressure in any tire is lower than 20% below the maximum cold inflation pressure stated on sidewall of the tire. Pressure in any tire is higher than 5% above the maximum cold inflation pressure stated on sidewall of the tire. There is greater than 20% difference in pressure between any tires on a particular axle.
c. Damage		
Inspect for damage to wheels and tires. **NOTE: Weather cracking only shall not be cause for rejection.**	There is foreign material in the tire tread that could cause damage or loss of air pressure (repair).	There are any cuts, abrasion, or other damage to tire sidewall resulting in exposed or damaged cord. There is any evidence of separation, bulges (other than normal manufacturer bulge), or other damage within the carcass of the tire. There are any cracks that run around the bead or sidewall of the tire.

(Continued on Next Page)

D. UNDERNEATH BUS
13. Wheels and Tires

Inspection Procedures:	Repair (or note) if:	Out of Service if:
		Retreaded tires have any separation of the tire tread from the tire carcass that could result in tire or tread failure.
	Any valve cap is missing (repair).	Any valve stem is damaged or misaligned so that tire cannot be filled with air.
NOTE: Refer to Tire and Rim Association Manual for correct procedures in demounting and mounting of tires and rims.		There is any damage to the lock ring assembly or lock ring groove of a multi-piece rim, including rust or corrosion that could cause the lock ring not to seal fully.
		There are any cracks or breaks at the lug holes or any other part of a rim or cast spokes.
	There are minor dents or bends in a rim (repair).	There are any dents or bends in a rim that could result in failure of the rim or separation of the tire from the rim.
d. Matching		
Inspect for matching of tire construction, design, size, and load rating on each axle.		There is mismatching of inner and outer dual tire diameters greater than 3/8-inch.
		There is any tire marked for use other than highway use.
		Any tire is not of proper type, size, and minimum load rating.

(Continued on Next Page)

D. UNDERNEATH BUS
13. Wheels and Tires

Inspection Procedures:	Repair (or note) if:	Out of Service if:
		All tires on an axle are not of same type (i.e., lug or rib) and size. Any tire is below minimum load rating. Radial and bias ply tires are intermixed on the same axle.
e. Alignment Inspect tires for evidence of proper alignment.	Any tire is feather-edged, cupped, or has uneven tread wear (repair). Lateral run-out of any tire/rim assembly exceeds 1/4-inch (repair).	Tires/wheels are grossly misaligned, affecting steering control.
f. Wheel Hardware 1) Inspect for presence, type, condition, and securement of all wheel hardware. 2) Check for proper spacing of rear dual wheels and tires (proper spacer width).		There is improper matching of rims and lock rings. There is evidence of slippage of wheel assembly on cast spoke hub. Stud holes are elongated. Any wheel nut, stud, or clamp is loose, or there is rust or corrosion indicating possible looseness.

(Continued on Next Page)

D. UNDERNEATH BUS
13. Wheels and Tires

Inspection Procedures:	Repair (or note) if:	Out of Service if:
		Any wheel, nut, stud, or clamp is broken, stripped, or missing. Any improper spacer is installed between dual wheels. Any bus built since October 1987 is not equipped with disc type (Budd) wheels.
3) Inspect for correct wheel color. Stud piloted and spoke wheels are to be painted black. Hub piloted wheels are to be painted National School Bus Yellow.		Wheel(s) not painted the correct color.
4) Inspect for correct wheel type.		Stud piloted wheel is installed on a hub piloted axle or hub.

E. LUBRICATION AND MAINTENANCE (OPTIONAL)

Inspection Procedures:	Repair (or note) if:	Out of Service if:
	This section of the form is optional. It is provided for the convenience of school districts. School districts should implement their own lubrication and maintenance policies and procedures.	

F. ROAD TEST
Brake Performance

1.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Parking Brake Check for proper operation of parking brake as follows: Apply parking brake. Place automatic transmission gear selector in drive and speed up the engine to a fast idle (approximately 1,200 RPM). Vehicle should not move forward. Manual transmission: When engine torque is applied by partially engaging clutch in second gear, vehicle should not move forward.	**NOTE: Buses equipped with Rear Diesel Engine and Allison World Transmission should be checked at 900 R.P.M.**	Vehicle moves forward.
b. Stopping Distance and Equalization 1) Stopping distance The following stopping distance requirements should be met when stopping the vehicle on a level, dry, smooth, hard surface that is free from loose material, from a speed of 20 M.P.H.: a) Decelerometer reading (feet per second per second) minimum of 14.	Decelerometer reading is close to 14, but within acceptable limits (repair). **(Continued on Next Page)**	Decelerometer reading is less than 14.

F. ROAD TEST
Brake Performance

Inspection Procedures:	Repair (or note) if:	Out of Service if:
1.		
OR		
b) Stopping distance (at 20 M.P.H. from point of brake pedal application) maximum of 30 feet.	Stopping distance is close to, but within, acceptable limit (repair).	Distance to stop is greater than 30 feet.
c) Check for tire flat spotting before and after conducting this test.	Flat spotting is severe, but will not cause tire(s) to be rejected when following procedures on Page 162 of this manual (note).	Flat spotting causes any tire to fail inspection (follow measuring procedures beginning on Page 162 of this manual).
NOTE: Use of either decelerometer or stopping distance measurement is acceptable. Lockup of brakes is discouraged as it may cause extended stopping distances and tire damage (flat spotting).		
2) Equalization		
Check for excessive brake pulling during the stopping distance test above. (Note: Pull is excessive if steering pulls sharply, and/or bus will not stop within a lane 12 feet wide).	Bus pulls, but stops within a lane 12 feet wide (repair).	Bus pulls sharply and will not stop within a lane 12 feet wide.
NOTE: Remove hands from steering wheel while conducting the brake equalization test..		

F. ROAD TEST
2. Engine, Transmission, Driveline

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Engine Performance & Governor		
Check for starting, color and quantity of exhaust smoke, proper idle, stalling, missing/skipping or hesitation, performance when accelerating, and shutdown of engine.	Rough or low idle of engine (repair). Engine exhaust gas color indicates engine is in poor mechanical condition (heavy black, blue, or white smoke) (repair).	Engine will not start or is difficult to start. Engine will not shut down. Engine stalls. There is hesitation upon acceleration. Engine is misfiring. Acceleration performance is poor.
b. Shifting 1) Automatic Transmission Check operation of shifter and transmission.		There is excessively rough up and down shifting or hard shifts. Transmission will not shift up and down through all gears. Transmission is slipping or noisy. Shift points are not within manufacturer's specifications.

(Continued on Next Page)

F. ROAD TEST
2. Engine, Transmission, Driveline

Inspection Procedures:	Repair (or note) if:	Out of Service if:
Manual Transmission		
2) Check operation of clutch, shifting, and transmission.	Clutch engagement is rough or noisy (repair). Transmission is hard to shift (repair). Clutch pedal travel has less than one inch free play (repair).	Clutch does not engage or is slipping. Transmission jumps out of gear.

F. ROAD TEST
Steering & Handling

3.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
a. Free Play		
Check for free play in steering.		There is excessive wandering or shimmy due to free play in steering. Bus wanders and requires excessive steering correction or effort to maintain straight-ahead driving.
b. Power Assist		
Check power steering assist effort when turning to the left or right.		There is no power assist. Bus is hard to turn to the left or right. There is jerking in the steering wheel when turning to the left or right.
c. Turning Radius		
Check and compare the left and right turning radius.	There is a minor difference in the left and right turning radius (repair). **(Continued on Next Page)**	There is a significant difference in the left and right turning radius of the bus.

F. ROAD TEST
Steering & Handling

3.

Inspection Procedures:	Repair (or note) if:	Out of Service if:
d. Steering Column		
Check up and down movement of steering column.		Up and down movement is greater than one inch.
e. Tracking		
Check vehicle steering recovery from left and right turns, wander on rough or crowned roads, tracking and pulling when driving straight ahead (not when stopping).	There is poor recovery on turns (repair).	There is no recovery on turns. Bus does not track properly (front and rear wheels are not in line).
	There is minor pulling in the steering (repair).	Bus wanders and requires excessive steering correction or effort to maintain straight-ahead driving.