Idaho School Bus Withdrawal From Service Standards

IDAHO DEPARTMENT OF EDUCATION
STUDENT TRANSPORTATION

650 W STATE STREET, 2ND FLOOR
BOISE, IDAHO 83702
208 332 6800 OFFICE / 711 TRS
WWW.SDE.IDAHO.GOV

REVISED 03/25/2024

Table of Contents

INTRODUCTION

These standards were developed to ensure that all Idaho school buses are maintained in a safe manner. When inspection of a bus reveals a maintenance condition that is below these standards it shall be the duty of the technician performing the inspection to remove the vehicle from service until the discrepancy has been repaired. This standard is the same for both new and used buses and shall be used whenever an Idaho school bus is being inspected. These standards are to be used whenever a 60-day, Annual or New Bus Inspection is being performed by State Inspectors, District, Contractor, or outside contracted maintenance personnel.

INSPECTION ITEM	DEFECT
BRAKE SYSTEM	
Adjustment	Any one brake beyond the allowed adjustment limit (see table #1).
ABS System (Buses manufactured after 1997)	ABS malfunction Indicator light not functioning as designed or illuminated on all ABS required vehicles.
Air Brakes	
	Absence of effective braking action upon application of service brakes.
	Audible air leak at chamber. (e.g., ruptured diaphragm, loose chamber clamp, etc.)
	If an air leak is discovered and either the primary or secondary reservoir pressure is not maintained when [396.3(a) (1)]: a. Governor is cut-in; b. Reservoir pressure is between 80-90 psi; c. Engine is at idle; and d. Service brakes are either fully applied or released.
	Fails to function as designed.
Low pressure warning system	Fails to function as designed.
Brake Shoe/Pad/Lining	Any lining thickness less than allowed by 393.47.
Brake Lining	Any lining thickness less than allowed by 393.47.
(1) Steering axle brakes. The brake lining/pad thickness on the steering axle of a truck, truck-tractor or bus shall not be less than 4.8 mm (3⁄16 inch) at the shoe center for a shoe with a continuous strip of lining; less than 6.4 mm (1⁄4 inch) at the shoe center for a shoe with two pads; or worn to the wear indicator if the lining is so marked, for air drum brakes. The steering axle brake lining/pad thickness shall not be less than 3.2 mm (1⁄8 inch) for air disc brakes, or 1.6mm (1⁄16 inch) or less for hydraulic disc, drum and electric brakes. (2) Non-steering axle brakes. An air braked commercial motor vehicle shall not be operated with brake lining/pad thickness less than 6.4 mm (1⁄4 inch) or to the wear indicator if the lining is so marked (measured at the shoe center for drum brakes); or less than 3.2 mm (1⁄8 inch) for disc brakes. Hydraulic or electric braked commercial motor vehicles shall not be operated with a lining/pad thickness less than 1.6mm (1/16”)(measured at the center of the shoe) for disc or drum brakes.	

	Lining pad is cracked, broken, not firmly attached or missing (393.47) (surface or heat cracks in the lining should not be considered out of service).
	The friction surface of drum, rotor or friction material are contaminated by oil, grease, or brake fluid (393.47).
	Loose or missing component (e.g., chambers, spiders, support brackets) (393.47).
	Fails to make contact with drum/rotor (e.g., frozen, binding, uneven) [393.48(a)].
	Absence of braking action on any axle (e.g., failing to move upon application of a wedge, S-cam, cam or disc brake).
	Rotor or drum has evidence of metal-to-metal contact on the friction surface [393.47(d) (1)].
	Brake pad, lining or shoe missing [393.47(a)].
	Brake pad, lining or shoe missing [393.47(a)].
Hydraulic Brakes	
	System brake failure light or low fluid light on or inoperative (393.51).
	Reservoir is below minimum level [393.45(a)] (571.106).
	Any seeping, leaking, or swelling of hose(s) under pressure [393.45(a)].
	Any leak in master cylinder unit [393.45(a)] (571.106).
	Any observable fluid leak in the brake system.
	Brake failure warning system is missing, inoperative, disconnected, and defective or activated while the engine is running with or without brake application [393.51(b)].
	ABS malfunction indicator light not functioning as designed or illuminated on all ABS required vehicles.
	Any lining thickness less than allowed by 393.47.
Brake Shoe/Pad/Lining	Any lining thickness less than allowed by 393.47.
(1) Steering axle brakes. The brake lining/pad thickness on the steering axle of a truck, truck-tractor or bus shall not be less than 4.8 mm (3⁄16 inch) at the shoe center for a shoe with a continuous strip of lining; less than 6.4 mm (1⁄4 inch) at the shoe center for a shoe with two pads; or worn to the wear indicator if the lining is so marked, for air drum brakes. The steering axle brake lining/pad thickness shall not be less than 3.2 mm (1⁄8 inch) for air disc brakes, or 1.6 mm (1⁄16 inch) or less for hydraulic disc, drum, and electric brakes. (2) Non-steering axle brakes. An air braked commercial motor vehicle shall not be operated with brake lining/pad thickness less than 6.4 mm (1⁄4 inch) or to the wear indicator if the lining is so marked (measured at the shoe center for drum brakes); or less than 3.2 mm (1⁄8 inch) for disc brakes. Hydraulic or electric braked commercial motor vehicles shall not be operated with a	

lining/pad thickness less than 1.6 mm (1⁄16 inch) (measured at the shoe center) for disc or drum brakes.	
	Lining pad is cracked, broken, not firmly attached or missing (393.47) (surface or heat cracks in the lining should not be considered out of service).
	The friction surface of drum, rotor or friction material are contaminated by oil, grease, or brake fluid (393.47).
	Loose or missing component (e.g., chambers, spiders, support brackets) (393.47).
	Fails to make contact with drum/rotor (e.g., frozen, binding, uneven) [393.48(a)].
	Absence of braking action on any axle (e.g., failing to move upon application of a wedge, S-cam, cam or disc brake).
	Rotor or drum has evidence of metal-to-metal contact on the friction surface [393.47(d) (1)].
	Brake pad, lining or shoe missing [393.47(a)].
	Any drum or rotor that is cracked, improperly mounted, or worn beyond manufacturers discard specifications. Note: Do not confuse short hairline heat check cracks with flexural cracks.
Drums and Rotors	Is not present or working as designed.
Parking Brake	Fails to hold vehicle in stationary position on normal roadway conditions (absence of ice or snow) in forward or reverse (393.41) [571.105 S5.2.1 and S5.2.3 (b)].
	Parking brake warning lamp fails to function as designed.
	Parking brake warning lamp fails to function as designed.
§ 393.47 Brake actuators, slack adjusters, linings/pads and drums/rotors. § 393.48 Brakes to be operative. § 393.51 Warning signals, air pressure and vacuum gauges. § 393.45 Brake tubing and hoses; hose assemblies and end fittings. § 571.106 Standard No. 106; Brake hoses.	
STEERING SYSTEM	
Travel	Any modification or other condition that interferes with the free movement of any steering component
Steering Column **Refer to manufacture specifications*	a) Any absence or looseness of U-bolt(s) or positioning part(s).
	b) Worn, faulty or obviously repair-welded universal joint(s).
	c) Improperly secured steering wheel.
Front Axel Beam	Any crack(s) or obvious welded repair.
Steering Gear Box	a) Any loose or missing mount bolt(s).
	b) Any crack(s) in gear box or mounting brackets.
	c) Any obvious welded repair.
Pitman Arm	a) Any looseness of the pitman arm on the steering gear output shaft.
	b) Any obvious welded repair.

Power Steering	a) A loose auxiliary power assist cylinder.
	b) An inoperable power steering pump.
	c) A fluid leak on the pressure side of the power steering pump.
	d) Any empty fluid reservoir.
Ball and Socket Joints	a) Any movement under steering load of a nut stud.
	b) Any movement in any threaded joint, or stud nut in the direction of the ball stud using 50-100 lbs. of hand pressure measured with a scale.
	c) Any obvious welded repair.
King Pins *tool required	a) If Horizontal movement exceeds manufacture's specification. Pry bar may be used to lift tire up and down, and in and out.
	b) If vertical movement exceeds 0.100 in. or the manufacturer's specification.
Tie Rods & Drag Links	a) Loose clamp(s) or clamp bolt(s) on tie rod or drag links.
	b) Any looseness in any threaded joint.
	c) Any movement between any linkage member and its attachment other than rotational.
Nuts	Any loose or missing fasteners on tie rods, pitman arms, drag links, steering or tie rod arms.
Hoses	Any damaged or kinked hoses or lines.
Steering Wheel Free Play	Fails to meet the performance test. (see table # 2).
SUSPENSION SYSTEMS	
Air Suspension	Deflated air suspension (one or more deflated air spring/bag) [393.207(f)].
	Air spring/bag is missing, broken, or detached at either the top or bottom [393.207(f)].
Axel Parts/Members	a) Any U-bolt or other spring to axle clamp bolt(s) cracked, broken, loose, or missing.
	b) Any spring hanger(s), or other axle positioning parts cracked, broken, loose, or missing that results in shifting of an axle from its normal position.
	c) Any worn (beyond manufacturer's specifications) or improperly assembled U-bolt, shock, king pin, ball joint, strut, air bag or positioning component.
	d) Any spring hanger, assembly part or leaf, broken or missing.
	e) Any broken coil spring.
Shock Absorbers	Any that are missing or broken.
§ 393.207 Suspension systems.	
CHASSIS/FRAME/UNIBODY	
Frame	a) Any cracked, loose, sagging or broken frame side rail.
	b) Any obvious bend or damage resulting from a collision

	c) Any worn or loose mounting hole.
Cross Members	Any weight bearing cross member, outrigger or other structural support that is cracked, missing, or deformed.
Outriggers/Body Supports	Any missing, broken, shifted, corroded or missing part supplied by the manufacturer that would affect the safe operation of the vehicle.
Bumpers	Any bumper missing or not secured.
EXHAUST SYSTEM	
Leaks	The exhaust system is leaking or discharging at any point under the school bus. NOTE: does not apply to proper venting for emission systems.
Heat Shields	No part of the exhaust system shall be located and likely to result in burning, charring, or damaging the electrical wiring, the fuel supply or any combustible part of the vehicle [393.83(a)].
§ 393.83 Exhaust systems.	
GAS OR DIESEL FUEL SYSTEMS	
Fuel Tanks/System	Any part of the fuel tank or fuel system not securely attached to the vehicle (393.65). A fuel system with a dripping leak at any point (393.67 Tank). Dripping leak (396.3(a) (1) leak other than tank). Missing fuel cap or system does not seal as designed.
CNG OR LPG FUELS	
Any fuel leakage from the CNG or LPG system detected audibly or by smell and verified by either a bubble test using non ammonia, noncorrosive soap solution or a flammable gas detection meter [396.3(a)(1)]. NOTE: Verification is needed to ensure that the sound is not either internal to the fuel system (such as gas flowing in a pressure regulator, or pressure equalizing between manifold tanks) or a leak in the air brake system.	
Any fuel leakage from the CNG or LPG system detected visibly (evidence such as ice buildup at fuel system connections and fittings) and verified by either a bubble test using non-ammonia, non-corrosive soap solution or a flammable gas detection meter [396.3(a) (1)]. NOTE: Some brief fuel leakage or decompression may occur during refueling, causing temporary frosting of CNG or LPG fuel system parts. If the vehicle has been refueled shortly before inspection, care must be taken to distinguish these temporary frosting occurrences from actual leaks.	
§ 393.65 All fuel systems. § 393.67 Liquid fuel tanks. § 396.3 Inspection, repair, and maintenance.	
DRIVE SHAFT	
Universal Joints	a) Any loose, worn, missing or damaged U-clamp.
	b) Any free play is evident.

	c) The center bearing is loose or worn beyond manufacturer specifications.
DIFFERENTIAL	
	Any critical component that fails to function as designed.
TRANSMISSION	
Automatic	If the engine starts in any gear other than neutral or park.
Standard	a) If the clutch is not properly adjusted and allows the vehicle to move with the pedal fully depressed
	b) If the starter interlock allows the engine to start without the clutch being depressed. (If so equipped).
ENGINE	
Components	Any critical component that fails to function as designed.
Leaks	Any fluid leaks that would affect the safe operation of the engine.
Accelerator Pedal	If the pedal is binding and/or the engine will not return to an idle.
TIRES/WHEELS/HUBS	
Tire Tread Depth	a) Any steering axle tire worn less than 4/32 in.
	b) Any drive axle tire worn less than 2/32 in.
Tire Sidewall	a) Any sidewall that is cut, worn, or damaged to the extent that the ply cord is exposed.
Tire Inflations	Tire is flat or has noticeable leak.
Tire Type	Not of proper type (load range, size. Mismatched, etc.).
Wheels/Rims/Spiders	a) Any nuts, bolts, studs or lugs are broken, missing, damaged or loose.
	b) Any wheels/rims cracked, damaged, not properly seated or repaired by welding.
Hubs *tool required	Excessive wheel bearing play that exceeds manufacturer specification. When any bearing (hub) cap, plug or filler plug is missing or broken allowing an open view into hub assembly [396.3(a) (1)].
	Smoking from wheel hub assembly due to bearing failure [396.3(a) (1)].
	When any wheel seal is leaking.
	Lubricant is leaking from the bearing hub and is accompanied by evidence that further leakage will occur [396.5(b)].
	No visible or measurable amount of lubricant showing in bearing hub.
§ 396.3 Inspection, repair, and maintenance. § 396.5 Lubrication.	
AISLES	
Clearance	Aisle does not have the required clearance (12 inches).
Obstructions	There are objects blocking aisles or exits.

ELECTRICAL	
Wiring	Any required wire or electrical component that is charred or showing evidence of being burnt or exposed. Unsecured wiring exposing potential hazard to vehicle operation.
Battery	
Condition	If the battery is cracked or leaking or has excess corrosion.
Wires	Battery connections are loose, exposed wire or excessive corrosion on cables.
Securement	Battery is not secured.
WINDSHIELD WIPERS	
Operation	System fails to operate as the manufacturer intended.
Condition	A blade is missing or broken.
BODY INTERIOR	
Panels	Any panel (ceiling, side, wheel well, etc.) protruding, having sharp edges, or not secured, that may cause injuries.
Floors	Floor pan or inner panels that have excessive perforated areas or openings sufficient to cause a hazard to an occupant.
Step Well	Any part of the step well or support structure that is damaged to the point that it could cause injury to a person or persons entering or exiting the bus
Step Treads	Any condition that would cause a tripping hazard
Handrails	a) Any that are not properly secured or damaged to the extent they could cause and injury.
	b) Fails the nut/drawstring test or has not complied with the NHTSA recalls. (See table #3).
Seats/ Barriers	a) Any seat or barrier that is not properly secured to the bus body.
	b) Seat spacing that fails to comply with FMVSS 222
	c) Any seat/barrier material so defective that compromises the integrity of the occupant protection and compartmentalization.
Seat (Driver)	a) Fails to adjust or hold proper adjustment.
	b) Any part of the drivers' safety restraint assembly is missing, not properly installed or so defective as to prevent proper securement.
	Missing seat belt cutter
Doors (Service)	a) Door does not open or close properly.
	b) Door control handle does not lock in the closed position.
	c) Door is equipped with a padlock or similar non-OEM locking device.
Doors (Emergency Exits)	a) Any emergency door that does not open freely or completely as designed.

	b) Any door(s) warning device that is defective. If a bus is equipped with buzzers located at the door and in the dash area, they must operate per manufacturer specifications.
	c) Door or roof hatch is equipped with a padlock or similar non OEM locking device.
	d) Door holding device is missing or inoperative or fails to hold door open.
	e) Any emergency door not properly labeled outside in compliance with FMVSS 217.
	f) Any emergency door equipped with a padlock, vandal lock, or non OEM locking device, that when locked allows the engine to start.
Windows	a) Any window that is shattered, broken through, or missing.
	b) If the windshield has chips, clouding or cracks that obscure the drivers' vision.
	c) Anything in front of the windshield that would obscure the drivers' vision (such as fans, VCR's, radios, etc.) d) Every school bus windshield shall be free of discoloration or other damage in that portion thereof extending upward from the height of the topmost portion of the steering wheel, but not including a 2-inch border at the top and a 1-inch border at each side of the windshield or each panel thereof, except that discoloration and damage as follows are allowed: (1)Coloring or tinting applied in manufacture, for reduction of glare; (2) Any crack that enters the path of either wiper or blocking the drivers vision area of the road or mirrors; (3) rock chip over 1/4 inch in size that has not been repaired to the extent that it does not hinder the driver's vision of the roadway
Windows (Emergency Exits)	a) Any emergency window that fails to open properly or operate per manufacturer specifications.
	b) Any bus that lacks the required number of Emergency windows or roof hatches in compliance with FMVSS 217.
	c) Any emergency window not properly labeled outside in compliance with FMVSS 217.
Defrosters	Any defroster fails to operate.
§ 571.222 Standard No. 222; School bus passenger seating and crash protection. § 571.217 Standard No. 217; Bus emergency exits and window retention and release.	
BODY EXTERIOR	
Panels, Rub Rails, Trim	Any body part that is loose, torn, dislocated, protruding or missing from the surface of the bus, creating a hazard.
Compartment Doors	Any engine, battery or other door that cannot be properly secured.
Mirrors	Any required mirror that is missing, broken, cracked, discolored or will not hold a set adjustment.

LAMPS AND SIGNALS	
Lights	a) Any one of the following lights not working: Brake, turn signal, headlight (low beam), stop arm lamps and school bus warning light (amber or red). b) Headlight with missing or loose components. Lumen reading beyond 15% of manufacturer specifications. c)Loss of diodes exceeding 25% in tail lamp or brake lamp. d)Emergency hazard warning lamp system not working
Crossing control device	Fails to extend or retract.
Horn	Fails to function per manufacturers specifications.
Gauges/Brake Warning	Any critical brake, tell-tale light, buzzer, or gauge that fails to function as designed.
Stop Arm	Any stop arm that fails to function properly.
EMERGENCY EQUIPMENT	
Fire Extinguisher	a) Any required fire extinguisher, which is missing or not properly secured or readily accessible to the driver. or passengers.
	b) Any extinguisher that is rated less than 5lb. ABC, fully charged, has no pressure gauge or valid annual inspection tag.
	c) Is damaged in any way.
First Aid Kit	a) Any kit that is missing or not located in the driver compartment.
	b) Any kit that's contents have been depleted to the point of rendering it as ineffective in meeting its purpose.
Body Fluids Kit	a) Any kit that is missing or not located in the driver compartment.
	b) Is missing any of its required components rendering it ineffective.
Webbing (belt) cutter(s) Drivers/Wheelchair Lift	Missing.
WHEELCHAIR VEHICLES	
	Wheelchair lift does not function as designed or is operable.
	b) Any hydraulic fluid leakage. c) If the required lift kill switch is not operating properly.

All retrofitted school buses must meet the standards associated with the date of manufacture of wheelchair lift.	Platform lift manufactured after April 1, 2005, must meet all the following criteria. a. Jacking prevention. b. Manual backup operating mode. c. Interlocks to prevent forward or rearward mobility of the vehicle unless lift is stowed. d. Wheelchair retention device. e. Platform outer barrier and inner roll stop. f. All retrofitted school buses must meet the standards associated with the date of manufacture of wheelchair lift.
	Any hydraulic line leaking during lift operation.
	Wheelchair restraint system is missing, incomplete, improperly installed, loose, and damaged or does not adhere to the securement manufacturer's recommendations.
	Any required wheelchair occupant restraint system not in compliance (571.222, SAE J2249 until rescinded by ANSI RESNA WC-18).
Wheelchair Tie Downs	When vehicles are transporting wheelchairs:
	a) Tie downs are missing or damaged.
	b) Tie downs are missing certification tags.
	c) Tie downs are not in compliance with FMVSS 209, 210 & 222.
Occupant Restraints	When occupant restraints are required:
	a) Restraints are missing or damaged
	b) Restraints are missing certification tags.
	c) Restraints are not in compliance with FMVSS 209, 210 & 222.
Second Webbing (belt) Cutter	Missing
§ 571.222 Standard No. 222; School bus passenger seating and crash protection. Wheelchair Tiedown and Occupant Restraint Systems for Use in Motor Vehicles RESNA American National Standard For Wheelchairs - Volume 3: Wheelchair Seating § 571.209 Standard No. 209; Seat belt assemblies. § 571.210 Standard No. 210; Seat belt assembly anchorages.	

TABLE 1: BRAKE ADJUSTMENTS

Brake Adjustment: Shall be less than those specifications contained herein relating to "Brake Adjustment Limit". (Dimensions are in inches.)

WEDGE BRAKE DATA

The combined movement of both brake shoe lining scribe marks shall not exceed 1/8 inch (3.18 mm)

CLAMP STYLE BRAKE DATA

SIZE	MARKING	OUTSIDE DIAMETER	ADJUSTMENT LIMIT
6	None	4 1/2"	1-1 3/4"
9	None	5 1/4"	1 3/8"
12	None	5 11/16"	1 3/8"
16	None	6 3/8"	1 3/4"
16L	L Stamp + Tag	6 3/8"	2"
20	None	6 25/32"	1 3/4"
20L	L Stamp + Tag	6 25/32"	2"
24	None	7 7/32"	1 3/4"
24L	L Stamp + Tag	7 7/32"	2"
24LS	Cover Marking + Square Ports + Tag	7 7/32"	2 1/2"
30	None	8 3/32"	2"
30	DD3 Bus/Coach	8 1/8"	2 1/4"
30LS	Cover Marking + Square Ports + Tag	8 3/32"	2 1/2"
36	None	9"	2 1/4"

BOLT TYPE BRAKE CHAMBER DATA

TYPE	OUTSIDE DIAMETER	BRAKE ADJUSTMENT LIMIT
A	6 15/16	1 3/8
B	9 3/16	1 3/4
C	8 1/16	1 3/4
D	5 1/4	1 1/4
E	6 3/16	1 3/8
F	11	2 1/4
G	9 7/8	2

ROTO-CHAMBER DATA

TYPE	OUTSIDE DIAMETER	BRAKE ADJUSTMENT LIMIT
9	4 9/32	1 1/2
12	4 13/16	1 1/2
16	5 13/32	2
20	5 15/16	2
24	6 13/32	2
30	7 1/6	2 1/4
36	7 5/8	2 3/4
50	8 7/8	3

TABLE 2: STEERING WHEEL FREE PLAY

Steering wheel free play shall not exceed the requirements listed in the following chart:

STEERING WHEEL DIAMETER	MANUAL SYSTEM MOVEMENT 30º	POWER SYSTEM MOVEMENT 45º
16" (41cm)	2" (5.1 cm)	4 1/2" (11.5cm)
18" (46 cm)	2 1/4" (5.4 cm)	4 3/4" (12 cm)
20" (51 cm)	2 1/2" (6.4 cm)	5 1/4" (13.5 cm)
22" (56 cm)	2 3/4" (7 cm)	5 3/4" (14.5cm)

The Handrail Inspection Tool and Procedure

The inspection tool is inexpensive and the procedure for detecting potentially fatal handrail designs is quite simple. The inspection tool is a standard ½" hex nut measuring ¾" across the flats. This nut is tied to 1/8" thick cotton cord measuring 36" in length with overhand knots. The drawstring should have a minimum length of 30" when tied to the nut and attached so that a pull of at least ten pounds does not separate the nut from or break the drawstring.

Steps to conduct a handrail inspection are:

- Stand on the ground outside of the bus
- Drop the inspection tool between the handrail and step well wall, simulating the typical way students exit the bus
- Draw the inspection tool through the handrail in a smooth, continuous slow motion
- Repeat this procedure several times (minimum of three times)

Note: It is important to drop the inspection tool over the handrail in such a way as to simulate a child exiting the bus. This is a drop and drag test. Do not create a snagging situation by placing the nut in an area that would not be exposed to a drawstring or other articles.

Inspection Results

Take the bus out of service and repair it if the inspection tool catches or snags anywhere on the handrail. If the nut separates from the drawstring or the drawstring breaks, reassemble the tool and retest. If the inspection tool pulls freely without catching or snagging, the bus should not be rejected.