STATE OF UTAH
DEPARTMENT OF PUBLIC SAFETY

UTAH SCHOOL BUS INSPECTION
FACILTY ENTITIES

EFFECTIVE January 1, 2021

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INTRODUCTION

In the 2020 Utah legislative session, amendments to the school bus inspection requirements were adopted (These amendments are clearly itemized in H.B.143 and corresponding Utah code 53-8-211).

The new requirements for educational entities (school districts, charter schools, private schools, and Utah schools for the deaf and blind) are as follows:

- A school bus operated by an educational entity in this state is required to pass a safety inspection annually.

- Educational entities shall perform safety inspections on the buses they operate in accordance with the rules made by the division (Utah Department of Public Safety – Utah Highway Patrol).

- Educational entities must have a comprehensive school bus maintenance plan approved by the division (Utah Department of Public Safety – Utah Highway Patrol). Educational entities shall include provisions for:
    - Maintaining school bus drivers' hours of service records;
    - Requiring school bus drivers to maintain vehicle condition reports;
    - Maintaining school bus maintenance and repair records; and validating that defects discovered during the inspection process have been corrected prior to returning a school bus to service.

- Educational entities may not operate any vehicle found to have mechanical or other defects that would endanger the safety of passengers and the public until the defects have been corrected.

- Motor vehicles operated by educational entities, and not meeting the criteria of a school bus, are subject to section 53-8-205.

The division (Utah Department of Public Safety – Utah Highway Patrol) shall perform the following validating functions:

- The division shall audit school bus safety operations of each educational entity performing inspections to ensure compliance. The audit may include both a formal examination of the education entity's inspection records and a random physical inspection of buses that have been safety inspected by the educational entity.

- The division shall perform random safety inspections annually on a minimum of 20% of the school buses operated by educational entities and on 100% of the school buses operated by an educational entity when inspections conducted result in an out-of-service failure rate as determined by the division.

- The division shall verify that defects discovered during an inspection have been corrected.

- The division shall make publicly available the results of audits/inspections.

These new requirements will take effect on January 1, 2021.

This document is intended to aid and assist certified inspectors in determining the status of a school bus when a critical safety component/item fails to operate properly, fails to operate as the manufacturer intended, or fails to meet federal and/or state standards.

INSPECTOR CERTIFICATION

All educational entity technicians/inspectors who participate in the School Bus Inspection Program are required to be certified. Certification consists of the following:

- Obtaining an operational knowledge of the contents of this document (electronic copies of this document will be made available to each educational entity).
- Passing a certification test with a score of 80% or greater (tests will be made available to educational entity technicians/inspectors by the division).
- Certified inspectors will be required to re-certify every five years.

SCHOOL BUS INSPECTION COMPONENTS/ITEMS

Note: The Multi-Function School Activity Bus (MFSAB) is defined as a bus that is sold for purposes that do not include transportation between home and school for students from kindergarten through 12th grade. Because the bus is not intended for roadside picking up and dropping off of children, they are exempt from the following traffic control devices:

- Stop arms.
- Overhead loading lights.
- School bus yellow coloring and yellow retroreflective sheeting.
- Required identification Markings (i.e. “School Bus” front and rear).

Other than the exemptions previously listed, a MFSAB is required to meet all requirements in the school bus crashworthiness standards, all other requirements in the school bus crash avoidance safety standards, all post-crash school bus standards (NHTSA 49 CFR 571) and State of Utah requirements itemized in this document when inspected.

Due to the requirements of 53-8-211.5, only buses that meet the requirements of a school bus or multi-function school activity bus should be inspected.

EXTERIOR:

When inspecting the exterior of a school bus, the inspector shall inspect the following items for proper operation and condition:

LIGHTING

Out of Service when: Any light does not emit the required color.

Back-Up Lamps

Violation:

Any back up lamp that is missing, defective or inoperable not resulting in an out-of service condition. 393.11

Clearance Lamps/Triple ID Lamps

Violation:

- Any exterior clearance or triple ID lamp missing, defective or inoperable.

Headlamps

Out of Service when: (393.11) and (393.9)

- Does not have at least one operable low beam headlight on each side of the bus (two total).

License Plate Lamp

Violation: (393.11) and (393.9) Local laws requirement.

- Any license plate lamp missing, defective or inoperable not resulting in an out-of service condition.

Overhead Loading Lamps

Violation:

- Any lens is cracked or broken not resulting in an out-of-service.

Out of Service when:

- Any overhead loading light that is inoperable.
- Any loading light or stop arm that remains in an activated position after being deactivated.
- Any loading light that is not the required color.
- Note: LED light assemblies are considered inoperable if less than 50% of diodes are illuminated.

Step Well Lamps

Violation:

- Any interior or exterior step well lamp missing, defective or inoperable.

Stop Arm Lamps

Violation:

- Any stop arm lamps missing, defective, or inoperable, not resulting in an out-of-service condition.

Out of Service when:

- Any stop arm that fails to activate with overhead lights.
- Any stop arm that remains in an activated position after being deactivated.
- Any stop arm of stop sign that is not the required color.
- Note: LED light assemblies are considered inoperable if less than 50% of diodes are illuminated.

Brake/ Tail Lamps

Violation:

- Any tail or brake lamp that is missing, defective or inoperable not resulting in an out-of service condition.

Out of Service when:

- Does not have at least one operable tail lamp on each side of the bus (two total).
- Does not have at least one operable brake light on each side of the bus (two total).

Turn Signals/ Hazard Lamps

Out of Service when: (393.11)

- Any inoperable turn signal - front or rear.
- Any inoperable hazard warning light – front or rear.

REFLECTORS

Reflective Tape/ Reflectors

Violation: (393.11)

- Any required reflector or reflective material missing or defective.
- Also see “emergency exit markings”.

MARKINGS

Color

Out of Service when:

- Bus is any color other than school bus yellow (Does not include a bus that meets the definition of a multifunction school activity bus).

Emergency Exit Markings

Violation when:

- Any emergency exit not properly labeled and marked both inside and outside the vehicle as specified in (49 CFR 571.217).
    - Each school bus emergency exit provided in accordance with S5.2.3.1 shall have the designation ‘‘Emergency Door’’ or ‘‘Emergency Exit,’’ as appropriate, in letters at least 5 centimeters high (two inches), of a color that contrasts with its background.
    - For emergency exit doors, the designation shall be located at the top of, or directly above, the emergency exit door on both the inside and outside surfaces of the bus. The designation for roof exits shall be located on an inside surface of the exit, or within 30 centimeters (twelve inches) of the roof exit opening.
    - For emergency window exits, the designation shall be located at the top of, or directly above, or at the bottom of the emergency window exit on both the inside and outside surfaces of the bus.
    - Concise operating instructions describing the motions necessary to unlatch and open the emergency exit shall be located within 15 centimeters (six inches) of the release mechanism on the inside surface of the bus. These instructions shall be in letters at least 1 centimeter (half inch) high and of a color that contrasts with its background. Examples: (1) Lift to Unlatch, Push to Open (2) Turn Handle, Push Out to Open
    - Each opening for a required emergency exit shall be outlined around its outside perimeter with a retroreflective tape with a minimum width of 2.5 centimeters (one inch) and either red, white, or yellow in color, that when tested under the conditions specified in S6.1 of Standard No. 131 (49 CFR 571.131), meets the criteria specified in Table 1 of that section.
    - On the inside surface of each school bus with one or more wheelchair anchorage positions, there shall be a label directly beneath or above each ‘‘Emergency Door’’ or ‘‘Emergency Exit’’ designation specified by paragraph (a) of S5.5.3 of this standard for an emergency exit door or window. The label shall state in letters at least 25 mm (one inch) high, the words ‘‘DO NOT BLOCK’’ in a color that contrasts with the background of the label.

School Bus Markings

Violation when: (390.21)

- No district name or school bus markings as required.
- Bus number is not clearly visible on all four sides.
- Privately owned buses must have company name, DOT number and registered weight clearly marked.

TIRES AND WHEELS

Tire Tread/Wear

Violation:

- Studded snow tires in violation of UCA 41-6a-1636 (Permitted between October 15th and March 31st).

Out of Service when: (392.2) and (393.75)

- Any steering axle tire that measures less than 4/32” in any major tread groove.
- Any drive axle tire that measures less than 2/32” in any major tread groove.
- Any tire contacts any part of the frame, body or suspension components.
- Dual tires are found to be in contact with adjacent tire.

Tire Damage/Cut

Violation:

- Any tire found to have a foreign item embedded in it (i.e. screw, nail etc.).

Out of Service when: (393.75).

- Any sidewall that is cut, worn or damaged to the extent that any ply cords are exposed.
- Any observable bump, bulge, or knot related to sidewall or tread separation.
- EXCEPTION: A bulge due to a section repair is allowed not to exceed 3/8 inch in height. This repair may sometimes be identified by a blue triangular label in the immediate vicinity.

Load Rating/Type

Out of Service when: (393.75)

- Not of proper type; including tire load rating, mismatched tire type/size, etc.

- Tire marked with restrictive markings such as; “Not for Highway Use” which would exclude use on public highways.
- Re-grooved, recapped or retreaded tire on steering axle.

Tire Pressure

Out of Service when: (393.75(a)(3))

- Tire is flat or has noticeable leak (Flat means 50% or less than recommended pressure.)

Wheels/Fasteners

Out of Service when: (393.205)

- Any wheel /rim is cracked, improperly seated, damaged or welded.
- Any nuts, bolts, studs or wheel fasteners are broken, missing, damaged or loose.
- Any visible elongated bolt/stud holes. 393.205(b).

Spoke (Dayton) Wheels

Out of Service when:

- Any spoke (Dayton Style) wheel in use on a school bus registered in the State of Utah.

Hubs

Violation:

- Any leaking inner or outer hub seal not resulting in an out of service.

Out of Service when:

- Any axle bearing cap is missing or broken allowing an open view into hub assembly.
- Smoking from wheel hub assembly due to bearing failure. (396.3(a) (1)).
- When any wheel seal is leaking. This must include evidence of wet contamination of the brake friction material and accompanied by evidence that further leaking will occur.
- Lubricant is leaking from hub and is present on the wheel surface accompanied by evidence that further leaking will occur.
- No visible or measurable amount of lubricant showing in hub.

EXTERIOR BODY

Battery Securement

Violation: (393.30)

- Batteries not secured as designed by bracket or other method.
- Signs of leaking or excessive corrosion.

Bumpers

Out of Service when: (393.203)

- Either front or rear bumper(s) are loose, missing or damaged creating a hazard.
- Altered creating a snag or entrapment hazard.

Cargo Door /Hood Securement/Other Door

Out of Service when: (393.203)

- Any door that does not open and close properly.
- Door control handle does not lock in the closed position.
- Any engine, battery or other door that is not properly secured.

Damage/Snag Hazard

Out of Service when: (393.203)

- Any school bus body part that is loose, torn, dislocated or protruding from the surface of the bus, creating a hazard.

License Plate

Violation:

- No front/rear plate as required or plate is not securely fastened.
- For “Apportioned” plates, only one is needed.

School Bus Inspection Sticker

Violation:

- Expired annual inspection.
- State school bus inspection sticker is not affixed or expired.

EXTERIOR MIRRORS AND WINDOWS

Rearview/Convex Mirrors

Out of Service when: (393.80)

- Any mirror required to provide the driver with the entire field of view is missing, damaged, clouded or otherwise obscured so as to place children in a hazardous position.
- Any crossover mirror system or portion thereof that fails to hold a set adjustment.
- Any crossover mirror directed to view any area other than for which they were intended; or any part of the required field of vision is obscured or not visible from the driver's seated position.
- Any broken mirror (inside or outside) that would create a hazard in or around the bus.

Windshield/Windows

Out of Service when:

- Any window or glass that is broken, creating a hazard (inside or outside).
- Any window, windshield or glass not of an approved type.
- Any window, windshield or glass that is missing.
- Windshield or windows to the left/right of the driver that are damaged, or in such condition that obstructs/interferes with driver's view (chips-clouding-cracks-sandpits-distortion-etc.). (393.60 (c)).

INTERIOR

When inspecting the interior of a school bus, the inspector shall inspect the following items for proper operation and condition:

INSTRUMENT PANEL/CONTROLS

ABS Warning

Violation: (393.55)

- ABS warning brake light remains on or does not function as required.

Air Pressure Gauge

Out of Service when:

Missing, inoperative or defective primary or secondary air pressure gauge (393.51).

Auxiliary Heater Unit

Out of Service when:

- Any component of an auxiliary heater system not properly secured.
- Any fluid leak from an auxiliary heater core assembly detected inside the passenger compartment.

Bus Pop-Off Valve/Parking Brake

Out of Service when: (393.43) and CVSA Bulletin Number 2012-04

- Parking brake pop off valve does not automatically set between 15-45 psi (plus or minus 5 psi).

Defroster

Out of Service when: (393.70)

- Defrost is inoperable or does not blow air on the windshield as required.

Doors

Out of Service when: (393.203)

- The service door does not open or close properly.
- The door control handle does not lock in the closed position.
- The door is equipped with a padlock or similar non-OEM locking device (excludes interlock systems).

Horns

Violation: (393.81)

- Does not have at least one horn that is inoperable.

Low Air Pressure Warning /Park Brake Indicator

Out of Service when: (393.51(c)) and 396.3 (a) (1)).

- Low pressure warning device missing, inoperative or does not operate between 45 and 70 PSI. *Note: If either an audible or visual warning device is working as required, the bus should not be placed out-of-service.*
- Parking brake warning light fails to function as designed.

Windshield Wipers/Washers

Violation:

- No washer fluid

Out of Service when:

- Any wiper or washer system that is inoperative, missing or damaged to the extent that renders it ineffective on the either side. (393.78 (a) (b)).
- Note: It is not OOS if washer fluid bottle is empty, but all other components function properly.

SEATS

Seats/Barriers/Spacing

Violation when:

- Any seat, cushion or barrier that is loose or damaged not resulting in an out-of-service condition.

Out of Service when:

- Any seat frame, cushion or barrier that is completely detached from the structure to which it is designed to be secured (must be completely separated from attachment point to be OOS).
- Any seat or barrier material(s) that are defective or missing which compromise the safety or the compartmentalization and occupant protection.
- Any seat assembly or barrier spacing that fails to comply with (571.222.).

Driver's Seat Restraint /Adjustment

Out of Service when: (393.93)

- Driver seat is not securely fastened to vehicle or fails to adjust/maintain proper adjustment.
- Any part of the driver's safety restraint system missing, not properly installed, or so defective as to prevent proper securement/restraint.

Wheelchair (inspected only by district personnel)

Out of Service when:

- Wheelchair lift is inoperable or does not function as designed.
- Any hydraulic line leaking during lift operation.
- Wheelchair securement missing, improperly secured, loose or damaged.
- Any required wheelchair restraint system not in compliance with FMVSS No. 122.

INTERIOR BODY

Electrical Wiring

Out of Service when: (393.28)

- Electrical Cable insulation is chafed, frayed, damaged, burnt, or causing bare cable to be exposed.
- Missing or damaged protective grommets insulating electrical cables through metal compartment panels
- Broken or unsecured mounting of electrical components
- Electrical cables unsupported, hanging or missing clamps that may cause a chafing or frayed condition (393.28) (396.3(a) (1)).

Floor

Out of Service when:

- Any floor condition that creates a hazard (integrity, tripping, slipping, etc.).

Hand Rails

Violation when:

- A loose handrail not resulting in an OOS condition.

Out of Service when:

- Any handrail that is missing or loose to the extent that a gap is created between mounting surfaces, thus causing a situation where an occupant's clothing, backpack, etc. could be snagged.
- Handrail does not meet OEM specifications.

Interior Panels

Out of Service when:

- Any panel (ceiling, side, wheel well, etc.) protruding, having sharp edges or not properly secured to the extent that it may cause injuries.

Prohibited Liquids/Materials

Out of Service when:

- **Gasoline, diesel, propane, motor oil, power steering fluid, antifreeze, hydraulic fluid, windshield wiper fluid, brake fluid, starting fluid (ether) or any other liquid or gas substance used in the mechanical operation of the school bus when located in the passenger compartment.**
- (NOTE: All other potentially hazardous materials not associated with the mechanical operation of the school bus will be determined and stored at the discretion of the LEA. Items located during UHP inspections that are of potential concern, but not amounting to an OOS condition, will be noted on the inspection report and the LEA notified.)

Step Well Integrity

Out of Service when:

- Any part of the step well or support structure is damaged.
- Any condition that creates hazard (tripping, slipping, etc.).

INTERIOR MIRRORS/WINDOWS

Interior Mirrors

Out of Service when:

- Interior mirror(s) are missing or damaged or are not constructed with rounded corners and protected edges. 6” X 16” minimum in size for type “A” buses and 6” X 30” minimum in size for type “C” and “D” buses
- Mirrors are not laminated or tempered.

Posters/Markings/ Decorations

Out of Service when:

- Any poster, markings or decorations forward of the forth row of occupants seating that obstructs any window, mirror or required markings (emergency exit markings, emergency equipment markings, etc.).
- Any poster, marking or decoration that obstructs required markings or creates a hazard.

Side/Rear Windows

Out of Service when:

- Any glass that is broken or missing which creates a hazard to any occupant.

EMERGENCY EQUIPMENT

Body Fluid Kit

Violation when:

- Any bus not equipped with a body fluid clean-up kit.

Fire Extinguisher

Out of Service when: 393.95

- Fire Extinguisher is discharged, missing, unsecured or not readily accessible for use within the driver compartment.

First Aid Kit

Violation when:

- Any bus not equipped with a first aid kit.

Triangles

Violation when: (393.95)

- Missing one or more of the three required emergency triangles.

AISLE EMERGENCY EXITS

Aisle Clearance/Obstruction/Center Strip

Out of Service when:

- Aisle does not have required clearance.
- Aisle or exit access is obstructed by any object.
- Center aisle strip is missing, damaged or not properly secured creating a hazard (integrity, tripping, slipping, etc.).

Exit Obstruction

Out of Service when:

- Any emergency exit that is equipped with a padlock or similar non-OEM locking device (excludes interlock systems).
- Aisle or exit access is obstructed by any object.
- Any self-retracting flip seat that does not retract on its own.

Window /Door Markings

Violation when:

- Any emergency exit not properly labeled and marked both inside and outside the vehicle as specified in (49 CFR 571.217).
- Also see “emergency exit markings”.

Window/Door Buzzers

Violation when:

- Any emergency exit window buzzer is inoperable.

Out of Service when:

- Any audible warning device on an emergency exit door is defective or fails to function (defective emergency window warning device is not an OOS condition).

Window/Door Instructions

Violation when:

- Any emergency exit marking or instructions missing, obscured or illegible.
- Also see “emergency exit markings”.

LIGHTS

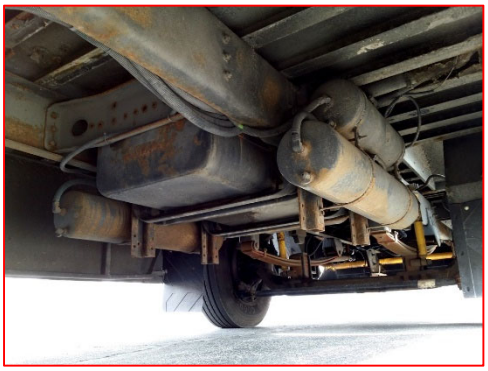
Dome Lights

Violation:

- Any interior dome lamp missing, defective or inoperable.

UNDERCARRIAGE

When inspecting the undercarriage of a school bus, the inspector shall inspect the following items for proper operation and condition:



STEERING

Ball/Socket Joints

Out of Service when: (393.207)

- Any movement under steering load of a stud nut.
- Any motion, other than rotational, between any linkage member and its attachment point of more than 1/8" measured with hand pressure only.
- Any obvious welded repair(s).

Securement Devices (Nuts)

Out of Service when: (393.207).

- Loose or missing fasteners or missing cotter pins on any tie rod/ends, pitman arm, drag link, or any other steering linkage component.

Pitman Arm

Out of Service when: (393.209).

- Any looseness of the pitman arm on the steering gear output shaft.
- Any obvious welded repair.

Power Steering Pump

Out of Service when: (393.209 (e)).

- Power steering pump inoperable.
- Auxiliary power assist cylinder loose (allowing movement of more than one inch in either direction) or inoperable.
- Any dripping leak in the power steering system.

Steering Column/Steering Wheel

Out of Service when: (393.209).

- Any absence or looseness of U-bolt(s) or positioning part(s).
- Worn, faulty or obviously repaired-welded universal joint(s).
- Steering wheel not properly secured.
- Telescopic Steering column does not lock into position.
- Tilt steering column does not lock in at least one position.

Steering Free Play

Out of Service when: (393.209)

- See Steering Wheel Free Play Chart – Bus will be placed out of service if any of the measurements for specific steering wheel size are exceeded based on the chart values. For steering wheel diameters not listed in chart, the steering wheel lash shall not exceed 14 degrees angular rotation for manual steering systems and 30 degrees angular rotation for power steering systems. For power steering system, the engine must be running.

Steering Wheel Free Play Chart

STEERING WHEEL SIZE	MANUAL SYSTEM MOVEMENT	POWER SYSTEM MOVEMENT
16" OR LESS	2 INCH	4 1/2 INCHES
18"	2 1/4 INCHES	4 3/4 INCHES
19"	2 3/8 INCHES	5 INCHES
20"	2 1/2 INCHES	5 1/4 INCHES

21"	2 5/8 INCHES	5 1/2 INCHES
22"	2 3/4 INCHES	5 3/4 INCHES

Steering Gear Box

Out of Service when: (393.209).

- Any mounting bolt(s) loose or missing.
- Any crack(s) in gear box or mounting brackets.
- Any obvious welded repair(s).

Tie Rods and Drag Links

Out of Service when: (396.3(a) (1)).

- Loose clamp(s) or clamp bolt(s) on tie rod or drag links.
- Any looseness in any threaded joint.
- Tire contacts draglink (Must be visually verified).

BRAKE SYSTEM

As it relates to Utah school bus inspections, a single defective brake will result in out-of-service (regardless of any fractional calculation that may exist utilizing the "half defect" charts).

Absence of effective braking action upon application of the service brakes (such as any brake lining/pad failing to move or contact braking surface upon application). (393.48(a)).

Audible air leak at air chamber. (e.g., ruptured diaphragm, loose chamber clamp, etc.). (396.3(a)(1)). NOTE: Refer to "Air Loss Rate."

Missing brake on any axle required to have brakes. (393.42(a))

Air Brake Adjustment Limits

Bring reservoir pressure between 90-100 psi (620-690 kPa), turn engine off and then fully apply the brakes. All brake measurements shall be made in 1/8 inch (3.2 mm) increments.

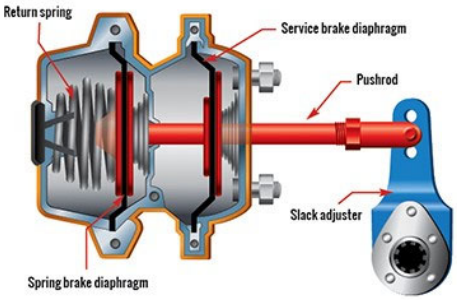
- One brake at 1/8 inch (3.2 mm) or more beyond the adjustment limit. (e.g., Type 30 clamp type air chamber pushrod measured at 2 1/8 inches (53.9 mm) = one defective brake.) (393.47(e))
- Any wedge brake where the combined brake lining movement of both top and bottom shoes exceeds 1/8 inch (3.2 mm). (393.47(f))

Clamp Type Brake Chamber Data

Type	Outside Diameter	Adjustment Limit	Defect
6 - A	4 1/2"	1 1/4"	1 3/8"
9 - B	5 1/4"	1 3/8"	1 1/2"
12 - B	5 11/16"	1 3/8"	1 1/2"
16 - D	6 3/8"	1 3/4"	1 7/8"
20 - D	6 25/32"	1 3/4"	1 7/8"
24 - D	7 7/32"	1 3/4"	1 7/8"
30 - E	8 3/32"	2"	2 1/8"
36	9"	2 1/4"	2 3/8"

Clamp Type Long Stroke Brake Chamber

Type	Outside Diameter	Adjustment Limit	Defect
12 - D	5 11/16"	1 3/4"	1 7/8"
16 - E	6 3/8"	2"	2 1/8"
20 - E (2 1/2 " rated stroke)	6 25/32"	2"	2 1/8"
20 - F (3 " rated stroke)	6 25/32"	2"	2 5/8"
24 - E (2 1/2 " rated stroke)	7 7/32"	2"	2 1/8"
24 - F (3 " rated stroke)	7 7/32"	2 1/2"	2 5/8"
30 - F	8 3/32"	2 1/2"	2 5/8"



Bolt Type Chamber Data

Type	Outside Diameter	Adjustment Limit	Defect
A	6 15/16"	1 3/8"	1 1/2"
B	9 3/16"	1 3/4"	1 7/8"
C	8 1/16"	1 3/4"	1 7/8"
D	5 1/4"	1 1/4"	1 3/8"
E	6 3/16"	1 3/8"	1 1/2"
F	11"	2 1/4"	2 3/8"
G	9 7/8"	2"	2 1/8"

Rotochamber Data

Type	Outside Diameter	Adjustment Limit	Defect
9	4 9/32"	1 1/2"	1 5/8"
12	4 13/16"	1 1/2"	1 5/8"
16	5 13/32"	2"	2 1/8"
20	5 15/16"	2"	2 1/8"
24	6 13/32"	2"	2 1/8"
30	7 1/16"	2 1/4"	2 3/8"
36	7 5/8"	2 3/4"	2 7/8"
50	8 7/8"	3"	3 1/8"

DD-3 Brake Chamber data

Type	Outside Diameter	Adjustment Limit	Defect
30	8 1/8"	2 1/4"	2 3/8"

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

Drum (Cam-Type and Wedge) Air Brake

Defective when:

- Any portion of the drum has any external crack or has any crack that opens upon brake application.
- Missing or broken brake shoe, lining, return spring (shoe or chamber), anchor pin, spider, cam roller, camshaft, pushrod, yoke, clevis pin, clevis pin retainer (e.g., cotter pin), brake adjuster, parking brake power spring or air chamber mounting bolt. (393.48(a))
- Camshaft Bushings -Loose air chamber, spider or camshaft support bracket. (393. 48(a)).
- Defective Lining Conditions
    - Lining cracks or voids that exceed 1/16 inch (1.6 mm) in width observable on the edge of the lining. (393.47(a)).
- Cracks/Rust Jacking -
    - Portion of a lining segment missing such that a fastening device (rivet or bolt) is exposed when viewing the lining from the edge (393.47(a)).
    - Crack that exceeds 1 1/2 inch (38.1 mm) in length. (393.47(a))
    - Loose lining segment. (Approximately 1/16 inch (1.6 mm) or more movement.)(393.47(a)).
    - Complete lining segment missing. (393.47(a))
    - The friction surface of the brake drum and the brake friction material are contaminated by oil or grease. (393.47(a)).
- Lining thickness less than 1/4 inch (6.4 mm) or worn into the wear indicator if lining is so marked, measured at the shoe center. (393.47(d)(2)).
- Cracks or voids that exceed 1/16 inch in width.
- Cracks that exceed 1 1/2 inches in length.
- Portion of lining missing that exposes a fastening device.

Air Disc Brakes (Exposed Pushrods and Direct Coupled – Air Chamber to Caliper)

Defective when:

- Missing or broken caliper, brake pad, pad retaining component, pushrod, yoke, clevis pin, clevis pin retainer (e.g., cotter pin), brake adjuster, parking brake power spring, chamber return spring, or air chamber mounting bolt. (393.48(a)).
- Loose or missing brake chamber or caliper mounting bolt. (393.48(a))
- Rotor has evidence of metal to metal contact on the friction surface. (393.47(d)(2))

- Rotor has severe rusting on the rotor friction surface on either side (light rusting on the friction surface is normal). (393.48(a))
- The friction surface of the brake rotor and the brake friction material are contaminated by oil or grease. (393.47(a))
- Brake pad thickness less than 1/16 inch (1.6 mm) or to wear indicator if pad is so marked. (393.47(d)(2))

Hydraulic and Electric Brakes

Defective when:

- Missing or broken caliper, pad retaining component, brake pad, shoe, or lining. (393.48(a))
- Loose or missing brake caliper mounting bolt. (393.48(a))
- Movement of the caliper within the anchor plate, in the direction of wheel rotation, exceeds 1/8 inch (3.2 mm). (393.48(a))
- Rotor or drum has evidence of metal to metal contact on the friction surface. (393.47(d)(2))
- Rotor has severe rusting on the rotor friction surface on either side (light rusting on the friction surface is normal). (393.48(a))
- Friction surface of the brake drum or rotor and the brake friction material are contaminated by oil, grease or brake fluid. (393.47(a))
- Lining or pad with a thickness 1/16 inch (1.6 mm) or less for disc or drum brakes. (393.47(d)(2))
- The fluid level in any master cylinder reservoir is less than ¼ full or below minimum marking.
- Hydraulic or vacuum lines, hoses or connections are restricted, crimped, broken or damaged through the outer reinforcement ply.
- Any observable seepage, bulge or swelling on a brake hose under application pressure.
- Improperly joined, such as a splice made by sliding a hose/tube end over the brake line and clamping the hose to the brake line.
- Any observable leaking hydraulic fluid in the brake system upon full application.
- No pedal travel reserve with engine running upon full application.
- Brake power assist unit is inoperable.
- Hydraulic power brake unit is inoperable.
- Brake failure warning system is missing, inoperative, disconnected, defective or activated while engine is running with or without brake application.
- Hydraulic brake backup system is inoperative.

Front Steering Axle(s) Brakes

Defective when:

- Any inoperative brake (such as any brake lining/pad failing to move or contact braking surface upon application) or missing brake on either wheel of any steering axle of any

vehicle equipped or required to be equipped with steering axle brakes (Missing - 393.42(a) or Inoperative - 393.48(a))

Drum (cam-Type and Wedge) Air Brakes (front steering axle)

Defective when:

- Mismatched air chamber sizes. (393.47(b)) NOTE: Mismatched air chamber size excludes long stroke air chamber versus regular stroke air chamber and excludes differences in design type such as type 20 clamp versus type 20 rotochamber. A bolt chamber with any other chamber type is a mismatch.
- Mismatched brake adjuster length. (393.47(c))
- Defective Lining Conditions
    - Lining cracks or voids that exceed 1/16 inch (1.6 mm) in width observable on the edge of the lining. (393.47(a))
    - Portion of a lining segment missing such that a fastening device (rivet or bolt) is exposed when viewing the lining from the edge. (393.47(a))
    - Crack that exceeds 1 1/2 inch (38.1 mm) in length. (393.47(a))
    - Loose lining segment. (Approximately 1/16 inch (1.6 mm) or more movement.) (393.47(a))
    - Complete lining segment missing. (393.47(a))
    - The friction surface of the brake drum and the brake friction material are contaminated by oil or grease. (393.47(a))
    - Lining with a thickness less than 3/16 inch (4.8 mm) for a shoe with a continuous strip of lining or 1/4 inch (6.4 mm) for a shoe with two lining blocks for drum brakes or worn into the wear indicator if lining is so marked. (393.47(d)(1))

Air Disc Brakes (Exposed Pushrods and Direct Coupled – Air Chamber to Caliper) (Front Steering Axle)

Defective when:

- Mismatched air chamber sizes. (393.47(b)). NOTE: Mismatched air chamber size excludes long stroke air chamber versus regular stroke air chamber. A mismatch on an air disc brake exists only when there is measurable difference in air chamber clamp sizes.
- Mismatched brake adjuster length. (393.47(c))
- Missing brake pad. (393.47(a))
- Rotor has evidence of metal to metal contact on the friction surface.(393.47(d)(1))
- Rotor has severe rusting on the rotor friction surface on either side (light rusting on the friction surface is normal). (393.48(a))
- The friction surface of the brake rotor and the brake friction material are contaminated by oil or grease. (393.47(a))
- Brake pad thickness less than 1/16 inch (1.6 mm) or to wear indicator if lining is so marked. (393.47(d)(1))

Hydraulic Brakes – (Front Steering Brakes)

Defective when:

- Missing lining or pad. (393.47(a))
- Loose or missing brake caliper mounting bolt. (393.48(a))
- Movement of the caliper within the anchor plate, in the direction of wheel rotation, exceeds 1/8 inch (3.2 mm). (393.48(a))
- Rotor has evidence of metal to metal contact on the friction surface. (393.47(d)(1))
- Rotor has severe rusting on the rotor friction surface on either side (light rusting on the friction surface is normal). (393.48(a))
- The friction surface of the brake drum or rotor and the brake friction material are contaminated by oil, grease or brake fluid. (393.47(a))
- Pad with a thickness 1/16 inch (1.6 mm) or less for disc brakes. (393.47(d)(1))

Spring Brake Chambers

Out of Service when:

- Any non-manufactured holes or cracks in the spring brake housing section of a parking brake. (396.3(a)(1))

Air Compressor

Out of Service when:

(Normally to be inspected when readily visible or when conditions indicate compressor problems.)

- Loose compressor mounting bolts. (396.3(a)(1))
- Cracked, broken or loose pulley. (396.3(a)(1))
- Cracked or broken mounting brackets, braces or adapters. (396.3(a)(1))

Brake Drums or Rotors

Out of Service when:

- Any rotor (disc) with a crack in length of more than 75% of the friction surface and passes completely through the rotor to the center vent from either side or completely through a solid rotor or completely through a structural support connecting the rotor friction surfaces.
- A rotor surface is worn to or through center vents.

- Any portion of the drum or rotor missing or in danger of falling away.
- Any portion of the drum has any external crack or has any crack that opens upon brake application. (393.47(a))
- Any rotor (disc) with a crack in length of more than 75% of the friction surface and passes completely through the rotor to the center vent from either side or completely through a solid rotor or completely through a structural support connecting the rotor friction surfaces. (393.47(a)) NOTE: Do not confuse short hairline heat check cracks with flexural cracks.
- A rotor surface is worn to or through center vents. (393.47(g))
- Any portion of the drum or rotor (discs) missing or in danger of falling away (393.47(a))

Parking Brake

- No brakes on the vehicle or combination are applied upon actuation of the parking brake control, including driveline hand-controlled parking brakes, and held solely by mechanical means. (393.41).
- Hydraulic brake system mechanical parking brake does not hold bus as required by test: engage park brake, put in drive, check for movement, put in reverse and check for movement.

Air Brake Hose/Tubing

Violation when:

- Any air hose or line that is chafing or otherwise damaged not resulting in an out-of-service condition.

Out of Service when: (393.45)

- Any Damage extending through the reinforcement ply.
- Bulge/swelling when air pressure is applied.
- Audible air leak at other than a proper connection.
- Improperly joined, such as a splice made by sliding a hose end over a piece of tubing and clamping the hose to the tube.
- Damaged by heat, broken or crimped in such a manner as to restrict air flow.

Vacuum Brakes

Out of Service when:

- Insufficient vacuum reserve to permit one full brake application after engine is shut off.
- Vacuum hose(s) or line(s) restricted, abraded through outer cover-to-cord ply, crimped, cracked, broken or has collapse of vacuum hose(s) when vacuum is applied.

Defective Linings

Out-of-Service when:

- Lining cracks or voids that exceed 1/16” in width observable on the edge of the lining.
- Portion of a lining segment missing such that a fastening device (rivet or bolt) is exposed when viewing the lining from the edge.
- Any lining thickness less than allowed by (393.47).
- Lining pad is cracked, broken, not firmly attached or missing (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.
- Loose components.
- Fails to make contact with drum.
- Absence of any braking action on any axle.
- Any portion of the drum or rotors (discs) missing, broken, misplaced or cracked through rotor to center vent.

System Air Leaks

Violation:

- Audible air leak at any location not resulting in an out-of-service condition. This shall include other systems operated by air.

Out of Service when:

- Audible air leak at the chamber.
- System fails to maintain pressure as described in (393.3).

Air Loss Rate

Out of Service when:

- If an air leak is discovered and the reservoir pressure is not maintained when:
    - Governor is cut-in;
    - Reservoir pressure is between 80 & 90 PSI;
    - Engine is at idle, and;
    - Service brakes applied, leakage exceeds 3 psi/min.
    - Service brakes released, leakage exceeds 2 psi/min.
    - Fails to recover sufficient air pressure.

Air Reservoir Securement

Violation when:

- Any movement is detected.

Out of Service when:

- Air reservoir is not securely fastened (movement exceeding 1”).

SUSPENSION

Air Ride System

Out of Service when:

- Deflated air suspension (i.e., system failure, leak, etc.). (393.207(f)).
- Loose, missing or detached air bag.

Axle/Front

Out of Service when:

- Any crack(s) or obvious welded repair(s).

Axle Part/Member

Out of Service when:

- Any U-bolt or other spring to axle clamp bolt(s) cracked, broken, loose, or missing.
- Any spring hanger(s), or other axle positioning parts cracked, broken, loose, or missing.

King Pins/ Ball Joint

Out of service when:

- Any king pin or ball joint is worn beyond manufacture’s specifications or improperly installed.

Shock Absorbers

Violation when:

- Shock absorber is loose, broken, missing or wet with a dripping leak.
- A shock absorber is leaking with evidence of a dripping leak will not result in an out-of-service condition.

Spring Assembly

Out of Service when:

- Any spring hanger, assembly part or leaf, broken or missing.

Suspension Mounts

Out of Service when:

- Any component that violates specifications found in (393.207 (a) (c) or (d)).

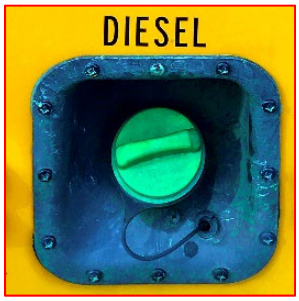
Sway Bar/Tracking Components

Out of Service when:

- Any component that violates specifications found in (393.207 (a) (c) or (d)).

FUEL SYSTEM

Fuel Tank Securement/ Leaks/ Fuel Cap



Out of Service When: (393.27)

- Any liquid fuel system with a dripping leak at any point.
- Any fuel tank not securely attached to the vehicle.
- The fuel tank filler cap is missing.

Gaseous Fuels

Out of Service When:

CNG or LPG

- Any fuel leakage from the CNG or LPG system detected by smell and verified by either a bubble test using non- ammonia, non-corrosive soap solution or a flammable gas detection meter.
- 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 manifolded (tanks) or a leak in the air brake system.

LNG

Out of Service When:

- A cloud of water vapor coming from any component of the fuel system.
- Any fuel leakage from the LNG system dectected visibly or audibly and verified by either a bubble test using non-ammonia, non-corrosive soap solution or a reading of more than 5,000 ppm on a fammable gas detection meter.
- Dripping liquid that boils or vaporizes in the air.
- Note: it is normal, particularly in humid conditions, for water vapor to collect around many portions of a LNG fuel system.

Educational entities will ensure that all gaseous fuel tanks are inspected (every three years) and decommissioned (upon expiration of manufacture's stamped expiration date) by certified personnel.

ENGINE/POWERTRAIN

Coolant Leaks

Violation:

- Any dripping fluid leaks from the cooling system not resulting in an out-of-service condition.

Out of Service when:

- Any fluid leak from an auxiliary heater core assembly detected inside the passenger compartment.

Differential Cracks/Leaks

Out of Service when:

- Cracked housing or dripping leak.

Drive Line/Drive Shaft

Yoke Ends (Including Slip Yoke, Yoke Shaft, Tube Yoke and End Fitting Yoke)

Out of Service when:

- Any visible crack in a yoke end (396.3(a) (1)).
- Any yoke-mounting hardware loose (with hand pressure only), broken or missing.
- Any horizontal or vertical movement of slip joint yoke shaft of greater than ½ inch with hand pressure only.
- Any loose, broken or missing end fitting fastener. (396.3)

Universal Joint

Out of Service when:

- Any independent vertical movement between opposing yoke ends greater than 1/8 inch (3.2 mm), with hand pressure only. (396.3(a)(1))
- Any missing universal joint bearing cap. (Also see item 4.b.(1)) (396.3(a)(1))
- Any missing, broken or loose universal joint bearing cap bolt or retainer bolt. (396.3(a)(1))
- Any bearing cap retainer clip is missing. (396.3(a)(1))

Center Bearing (Carrier Bearing)

Out of Service when:

- Any broken or loose center bearing bracket, bracket bolts or mounting hardware. (396.3(a)(1))
- Any center bearing bracket crack equaling 50 percent or more of the original bracket width. (396.3(a)(1))
- More than 1/2 inch (12.7 mm) vertical movement (with hand pressure only) of the shaft in the center bearing carrier. (396.3(a)(1))

Driveshaft Tube

Out of Service when: Inspection Bulletin 2014-01 – Driveline/Driveshaft Inspections

- Any original metal crack in the shaft tube greater than 1/4 inch (6.4 mm) in length. (396.3(a)(1))
- Obvious cracked weld at shaft tube end. (396.3(a)(1)).
- Any shaft tube with obvious twist. (396.3(a)(1)).

Drive Line Guard

Out of Service when:

- Drive line guard missing, loose, improper placement or bent to the extent it is out of position.

Engine Fluid Leaks

Violation:

- Any dripping fluid leaks from engine not resulting in an out-of-service condition.

Out of Service when:

- Any defect which may cause an imminent hazard or potential fire.

Engine/Transmission Mounts

Out of Service when:

- Any critical component fails to function as designed (396.3)
- Any cracked, loose, or broken frame member adversely affecting support of functional components, such as steering gear, engine, transmission, body parts and suspension. (393.201(a))

Exhaust System

Out of Service when:

- Any exhaust system leaking or discharging under the chassis.
- No part of the exhaust system of any bus shall be so located as to be likely to result in burning, charring or damaging the electrical wiring, fuel supply or any combustible part of the bus.
- Note: Expansion clamps may allow some leakage when cold. If evidence of leakage is present, allow the system to warm up and re-check prior to documenting a violation.

Frame

Violation when:

- Any frame component is broken, missing or damaged not resulting in an out-of-service.

Out of Service when:

- Any cross member, outrigger or other structural support is missing, cracked, shifted or damaged to the extent it affects the structural integrity or safe operation of the bus.
- Any area of the floor that is sagging or soft due to broken cross member or would present a hazard.
- Three or more adjacent cross members or outriggers broken or detached.

Transmission Fluid Leak

Violation when:

- Any dripping fluid leaks from the transmission not resulting in an out-of-service condition.

Out of Service when:

- Any defect which may cause an imminent hazard or potential fire.

GENERAL

Any Fire/Crash/Failure Hazard

Out of Service when:

- Any defect which may cause an imminent hazard or potential fire.
- Any condition that is likely to cause a crash or breakdown of the vehicle.