

**STATE OF NEVADA  
DEPARTMENT OF EDUCATION**



**2011 - 2012  
OUT-OF-SERVICE  
MANUAL**

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### INTRODUCTION

The purpose of the Nevada Out-of-Service Manual is to identify items on a school bus that would require the bus be placed out-of-service.

The Nevada School Bus Out-of-Service Inspection Manual utilized the *Commercial Vehicle Safety Alliance's 2011 Out-of-Service Criteria* to produce this manual. The regulations cited in this document are from the Federal Motor Carrier Safety Administration, Code of Federal Regulations. The department would also like to thank all the Nevada Highway Patrol and statewide school district transportation personnel for their assistance in developing and updating this manual. This document was approved by the Nevada State Board of Education during the August 10<sup>th</sup> and 11<sup>th</sup>, 2011 State Board of Education meeting and is effective as of that date.

NRS §392.400 gives authority to the Nevada Highway Patrol to inspect school buses in Nevada semiannually. The Nevada Highway Patrol has the authority to place any bus out-of-service for any violation listed in this manual. If the specific item is not listed in this manual, the violation is noted as a deficiency on the School Bus Inspection Form. School buses are inspected according to the Nevada State School Bus Standards, approved by the State Board of Education.

School buses that have an Out-of-Service condition while transporting students are allowed to return to the safest spot or destination, whichever comes first as long as the violation is not a serious mechanical failure and does not immediately impact the safe transportation of the students.

If you have questions regarding this document, please contact Diana Hollander, Program Officer, Nevada Department of Education. 9890 S. Maryland Pkwy, Suite 224, Room 221, Las Vegas, Nevada 89183. Phone number is 702-668-4319 and email address at [dhollander@doe.nv.gov](mailto:dhollander@doe.nv.gov).

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# **PART I**

## **DRIVER OUT-OF-SERVICE CRITERIA**

1. **DRIVER'S AGE:** Driver not at least 21 years of age. (§391.11(b)(1)).
2. **COMMERCIAL DRIVER'S LICENSE (CDL)**
  - a. **License**

Does not possess a valid CDL issued by his/her state or jurisdiction of domicile. (§383.23(a)(2))

NOTE: "Does not possess a valid CDL" includes, but is not limited to: improper class, expired, cancelled, revoked, disqualified, suspended, or withdrawn.
  - b. **Learner's Permit**
    - (1) Is not accompanied by the holder of a valid CDL. (§383.23(c)(1))
    - (2) Does not hold a valid automobile drivers license or have a valid operator's status allowed by licensing jurisdiction. (§383.23(c)(2))
  - c. **Endorsements and Restrictions**

Operating a commercial vehicle without proper endorsements or in violation of restrictions. (§383.23(a)(2))
  - d. **Classification**

Does not possess the proper class of license for vehicle being operated. (§383.91(a))
3. **DRIVER MEDICAL/PHYSICAL REQUIREMENTS:**
  - a. **Medical Certificate**
    - (1) Operating a commercial vehicle without corrective lenses or hearing aid as indicated on the driver's medical certificate. (§391.11(b)(4))
    - (2) When an inspector has knowledge and/or evidence that a driver is/is not in possession of a valid medical certificate, and is not in possession of any and all required exemptions for the following conditions: vision, hearing, insulin-using diabetes, epilepsy or any

other conditions which is likely to cause loss of consciousness or any loss of ability to control a commercial motor vehicle. (§391.41(a)(1))

- (3) Operating a passenger-carrying vehicle without possessing a valid medical certificate. (§391.41(a))

4. **SICKNESS**

- a. When so impaired that the driver should not continue on the trip. Declare driver out-of-service until no longer impaired. (§392.3)

5. **FATIGUE**

- a. When so fatigued that the driver of a passenger-carrying vehicle should not continue the trip. Declare driver out-of-service for 10 consecutive hours. (§392.3)

6. **COMMUNICATION**

- a. Driver is unable to communicate sufficiently to understand and respond to official inquiries and directions. (§391.11(b)(2))

7. **DRIVER DISQUALIFICATION**

a. General

- (1) A driver or holder of a CDL who is disqualified must not drive a Commercial Motor Vehicle (CMV).
- (2) An employer must not knowingly allow, require, permit, or authorize a driver who is disqualified to drive a CMV.
- (3) A driver is subject to disqualification sanctions as designated in paragraphs (b), Disqualification for Major Offenses, and (c) Disqualification for Serious Traffic Violations, if the holder of a CDL drives a CMV or non-CMV and is convicted of the violations.
- (4) For purposes of determining first and subsequent violations of the offenses specified in this subpart, each conviction for any offense listed in Tables 1 through 3 of this section resulting from a separate incident, whether committed in a CMV or non-CMV, must be counted.
- (5) A state may reinstate any driver disqualified for life for offenses described in Table 1 (§383.51) after 10 years if that person has

voluntarily entered and successfully completed an appropriate rehabilitation program approved by the State. Any person who has been reinstated in accordance with this provision and who is subsequently convicted of a disqualifying offense described in paragraphs Table 1 must not be reinstated.

b. Disqualification for Major Offenses

Table 1 contains a list of the offenses and period for which a driver must be disqualified, depending upon the type of vehicle the driver is operating at the time of the violation, as follows:

<b>TABLE 1 (§383.51)</b>				
If a driver operates a motor vehicle and is convicted of:	For a first conviction or refusal to be tested while operating a CMV, a person required to have a CDL and a CDL holder must be disqualified from operating a CMV for....	For a first conviction or refusal to be tested while operating a non-CMV, a CDL holder must be disqualified from operating a CMV for.....	For a second conviction or refusal to be tested in a separate incident of any combination of offenses in this Table while operating a CMV, a person required to have a CDL and a CDL holder must be disqualified from operating a CMV for.....	For a second conviction or refusal to be tested in a separate incident of any combination of offenses in this Table while operating a non-CMV, a CDL holder must be disqualified from operating a CMV for .....
1. Being under the influence of alcohol as prescribed by state law.	1 Year	1 Year	Life	Life
2. Being under the influence of a controlled substance.	1 Year	1 Year	Life	Life
3. Having an alcohol concentration of 0.04 or greater while operating a CMV.	1 Year	Not Applicable	Life	Not Applicable
4. Refusing to take an alcohol test as required by a State or jurisdiction under its implied consent laws or regulations as defined in §383.72.	1 Year	1 Year	Life	Life
5. Leaving the scene of an accident.	1 Year	1 Year	Life	Life
6. Using the vehicle to commit a felony.	1 Year	1 Year	Life	Life
7. Driving a CMV when, as a result of prior violations committed operating a CMV, the driver's CDL is revoked, suspended, or canceled, or the driver is disqualified from operating a CMV.	1 Year	Not Applicable	Life	Not Applicable
8. Causing a fatality through the negligent operation of a CMV, including but not limited to the crimes of motor vehicle manslaughter, homicide by motor vehicle and negligent homicide.	1 Year	Not Applicable	Life	Not Applicable

9. Using the vehicle in the commission of a felony involving manufacturing, distributing, or dispensing a controlled substance.	Life-not eligible for 10-year reinstatement			
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c. Disqualification for serious traffic violations

Table 2 contains a list of the offenses and the period for which a driver must be disqualified, depending upon the type of vehicle the driver is operating at the time of the violation, as follows:

<b>TABLE 2 (§383.51)</b>				
If a driver operates a motor vehicle and is convicted of:	For a second conviction of any combination of offenses in this Table in a separate incident within a 3-year period while operating a CMV, a person required to have a CDL and a CDL holder must be disqualified from operating a CMV for...	For a second conviction of any combination of offenses in this Table in a separate incident within a 3-year period while operating a non-CMV, a CDL hold must be disqualified from operating a CMV, if the conviction results in the revocation, cancelation, or suspension of the CDL holder's license or non-CMV driving privileges, for...	For a third or subsequent conviction of any combination of offenses in this Table in a separate incident within a 3-year period while operating a CMV, a person required to have a CDL and a CDL holder must be disqualified from operating a CMV for...	For a third or subsequent conviction of any combination of offenses in this Table in a separate incident within a 3-year period while operating a non-CMV, a CDL holder must be disqualified from operating a CMV, if the conviction results in the revocation, cancellation, or suspension of the CDL holder's license or non-CMV driving privileges, for...
1. Speeding excessively, involving any speed of 24.1 KMPH (15 mph) or more above the posted speed limit.	60 Days	60 Days	120 Days	120 Days
2. Driving recklessly, as defined by State or local law or regulation, including but, not limited to, offenses of driving a motor vehicle in willful or wanton disregard for the safety of person or property.	60 Days	60 Days	120 Days	120 Days
3. Making an improper or erratic traffic lane changes.	60 Days	60 Days	120 Days	120 Days
4. Following the vehicle ahead too closely.	60 Days	60 Days	120 Days	120 Days
5. Violating State or local law relating to motor vehicle traffic control (other than a parking violation) arising in connection with a fatal accident.	60 Days	60 Days	120 Days	120 Days
6. Driving a CMV without obtaining a CDL.	60 Days	Not Applicable	120 Days	Not Applicable
7. Driving a CMV without a	60 Days	Not Applicable	120 Days	Not Applicable

CDL in the driver's possession.				
8. Driving a CMV without the proper class of CDL and/or endorsements for the specific vehicle group being operated or for the passengers or type of cargo being transported.	60 Days	Not Applicable	120 Days	Not Applicable
9. Violating a State or local law or ordinance on motor vehicle traffic control prohibiting texting while driving.	60 Days	Not Applicable	120 Days	Not Applicable

d. **Disqualification for Railroad-Highway Grade Crossing Offenses.**

Table 3 contains a list of the offenses and the periods for which a driver must be disqualified, when the driver is operating a CMV at the time of the violation.

<b>TABLE 3 (§383.51)</b>			
If the driver is convicted of operating a CMV in violation of a Federal, State or local law because...	For a first conviction a person required to have a CDL and a CDL holder must be disqualified from operating a CMV for....	For a second conviction of any combination of offenses in this Table in a separate incident within a 3-year period, a person required to have a CDL and a CDK holder must be disqualified from operating a CMV for.....	For a third or subsequent conviction of any combination of offenses in this Table in a separate incident within a 3-year period, a person required to have a CDL and a CDL holder must be disqualified from operating a CMV for....
1. The driver is always required to stop, but fails to stop before driving onto the crossing.	No less than 60 days	No less than 120 days	No less than 1 year
2. The driver fails to have sufficient space to drive completely through the crossing without stopping.	No less than 60 days	No less than 120 days	No less than 1 year
3. The driver fails to obey a traffic control device or the directions of an enforcement officer at the crossing.	No less than 60 days	No less than 120 days	No less than 1 year
4. The driver fails to negotiate a crossing because of insufficient undercarriage clearance.	No less than 60 days	No less than 120 Days	No less than 1 year

**8. DRUGS AND OTHER SUBSTANCES**

a. **Shall not be in possession**

- (1) Is in possession. Declare driver out-of-service for twenty-four (24) consecutive hours. (§392.4(a))

b. **Shall not be under the influence**

- (1) Is under the influence, with probable cause. (§392.4(a)) Declare

driver out-of-service for twenty-four (24) consecutive hours.

**9. INTOXICATING BEVERAGES**

Any driver who is under the influence of intoxicating beverage, consumes an intoxicating beverage regardless of its alcohol content, or have any measured alcohol concentration or any detected presence of alcohol while on duty, or operating or in physical control of a motor vehicle. (Consumption – §392.5(a)(1) or Presence/Influence – §392.5(a)(2)) Declare driver out-of-service for twenty-four (24) consecutive hours.

Be on duty or operate a motor vehicle while the driver possesses an intoxicating beverage, regardless of its alcohol content. (Possession – §392.5(a)(3)) Declare driver out-of-service for twenty-four (24) consecutive hours.

Driver violating any roadside out-of-service order regarding intoxicating beverages. (§392.5(c)(2)) Declare driver out-of-service for twenty-four consecutive hours.

Note: The driver would not be declared out-of-service, if the driver has taken time off equivalent to the original out-of-service order.

**10. DRIVER'S RECORD OF DUTY STATUS**

**a. Passenger Carrying Vehicles**

- (1) Ten (10) Hour Rule (see footnotes 1 and 3)

Driving more than ten (10) hours following ten (10) consecutive hours off duty. (§395.5(a)(1)) Declare driver out-of-service until such time as eligibility to drive is re-established.

- (2) Fifteen (15) Hour Rule (see footnotes 1 and 3)

Driving for any period after having been on duty fifteen (15) hours following ten (10) consecutive hours off duty. (§395.5(a)(2)) Declare driver out-of-service until eligibility to drive is re-established.

- (3) 60/70 Hour Rule (See Footnote 1)

Driving after being on duty for more than 60 hours in seven (7) consecutive days or 70 hours in eight (8) consecutive days. (60 Hour Rule – §395(b)(1) or 70 Hour Rule – §395.5(b)(2)) Declare driver out-of-service until such time as eligibility to drive is re-established.

(4) No Record of Duty Status (Log Book)

No record of duty status in possession when one is required. (§395.8(a)) Declare driver out-of-service for ten (10) consecutive hours.

(5) No Previous Seven (7) Days (See Footnotes 4)

Failing to have in possession a record of duty status for the previous seven (7) consecutive days. (§395.8(k)(2)), see exception (§395.12(b)(3)) Declare driver out-of-service for ten (10) consecutive hours.

(6) False Record of Duty Status (Log Book)

A required record of duty status that does not accurately reflect the driver's actual activities and duty status (including time and location of each duty status change and the time spent in each duty status) in an apparent attempt to conceal a violation of an hours of service limitation. (§395.13(d)(1)) Declare driver out-of-service for ten (10) consecutive hours.

(7) Hours of Service Out-of-Service Order

Driver violating any roadside out-of-service order regarding hours of service. (§395.13(d)(1)) Declare driver out-of-service for ten (10) consecutive hours.

b. Footnotes

(1) Drivers must comply with the hours of services rules of the country (Canada, United States or Mexico) that the driver is operating (driving) in.

(2) Thirty-four (34) Hour Restart (§395.3(c)(1) or (2)). Any period of seven (7) or eight (8) consecutive days may end with the beginning of any off duty period of twenty-three (23) or more consecutive hours.

(3) Travel time (§395.1(j)(1) & (2)). When a driver at the direction of the motor carrier is traveling, but has no direct responsibility to the carrier, the time is counted as on-duty time unless the driver is afforded at least ten (10) consecutive hour's off-duty when arriving at the destination. In this case the driver is off-duty for the entire period.

(4) A driver who utilizes an electronic device other than those described

in §395.15 shall not be declared out-of-service if the driver has the ability to print and sign previously completed record of duty status that comply with §395.8 upon demand.

# **PART II**

## **VEHICLE OUT-OF-SERVICE CRITERIA**

### **1. BRAKE SYSTEMS**

#### **a. Defective Brakes**

The number of defective brakes is equal to or greater than 20 percent of the service brakes on the vehicle. A defective brake includes any brake that meets one of the following criteria.

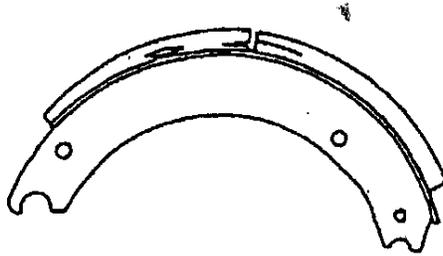
NOTE: Steering axle brakes under “Front Steering Axle(s) Brakes”, are to be included in the 20 percent criterion.

- (1) Absence of effective braking action upon application of the service brakes (such as brake linings failing to move or contact braking surface upon application.) (§393.48(a))
- (2) Drum (Cam-Type and Wedge) Air brakes
  - (a) Missing or broken brake shoe, lining, return spring (shoe or chamber), anchor pin, spider, cam roller, camshaft, pushrod, yoke, clevis pin, brake adjustment, parking brake power spring, or air chamber mounting bolt. (§393.48(a))
  - (b) Loose air chambers, spiders, or camshaft support brackets. (§393.48(a))
  - (c) Defective lining conditions. (§393.47)
    - i. Lining cracks or voids that exceed 1/16 inch (1.6 mm) in width observable on the edge of the lining. (§393.47(a))
    - ii. 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))
    - iii. Crack exceeds 1-1/2 inch (38.1mm) in length. (§393.47(a))
    - iv. Loose lining segment. (Approximately 1/16 inch (1.6 mm) or more movement.) (§393.47(a))

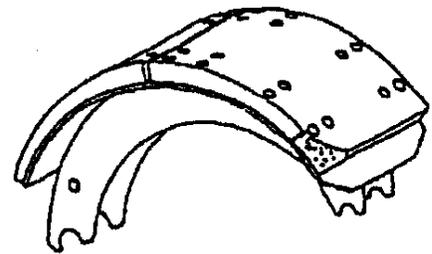
- v. Complete lining segment missing. (§393.47(a))
- vi. The friction surface of the brake drum and the brake friction material are contaminated by oil, grease, or brake fluid. (§393.47(a))

NOTE: Also refer to “Wheels, Rims and Hubs” if wheel seal is actively leaking.

- vii. Lining thickness less than ¼ inch (6.5 mm) or to wear indicator if lining is so marked, measured at the shoe center. (§393.47(d)(2))



**Out-of-Service**  
Cracks or voids that exceed 1/16" in width  
Cracks that exceed 1 1/2 " in length



**Out-of-Service**  
Portion of lining missing that exposes a fastening device.

- (3) Air Disc Brakes (Exposed Pushrods and Direct Coupled – Air Chamber to Caliper)
  - (a) Missing or broken caliper, brake pad, pad retaining component, pushrod, yoke, clevis pin, brake adjuster, parking brake power spring, chamber return spring, or air chamber mounting bolt. (§393.48(a))
  - (b) Loose or missing brake chamber or caliper mounting bolt. (§393.48(a))
  - (c) Rotor has evidence of metal to metal contact over the rotor friction surface on either side. (§393.48(a))
  - (d) Rotor has severe rusting on the rotor friction surface on either side (light rusting on the friction surface is normal). (§393.49(a))

- (e) The friction surface of the brake rotor and the brake friction material are contaminated by oil or grease. (§393.47(a))

NOTE: Also refer to “Wheels, Rims and Hubs” if wheel seal is actively leaking.

- (f) Brake pad thickness less than 1/16 inch (1.6mm) or to wear indicator if pad is so marked. (§393.47(d)(2))
- (4) Audible Air Leak at Air Chamber. (Example: ruptured diaphragm, loose chamber clamp, etc.) (§396.3(a)(1))

Note: Refer to “Air Loss Rate”.

- (5) Brake Adjustment Limits. Bring reservoir pressure between 90 – 100 psi (620 – 690 kPa), turn engine off and then fully apply the brakes. All brake measurement shall be made in 1/8 inch (3.2 mm) increments.
- (a) One brake at ¼ inch (6.5mm) or more beyond the adjustment limit. (Example: Type 30 clamp type air chamber pushrod measured at 2-1/4 inches (57.15mm) would be one defective brake.) (§393.47(e))

**b. Brake Adjustment Limit Reference Charts**

<b>CLAMP TYPE BRAKE CHAMBER DATA</b>		
<b>TYPE</b>	<b>OUTSIDE DIAMETER</b>	<b>BRAKE ADJUSTMENT LIMIT</b>
6	4-1/2 (114mm)	1-1/4 (31.75mm)
9	5-1/4 (133mm)	1-3/8 (34.93mm)
12	5-11/16 (145mm)	1-3/8 (34.93mm)
16	6-3/8 (162mm)	1-3/4 (44.45mm)
20	6-25/32 (172mm)	1-3/4 (44.45mm)
24	7-7/32 (184mm)	1-3/4 (44.45mm)
30	8-3/32 (206mm)	2 (50.80mm)
36	9 (229mm)	2-1/4 (57.15mm)

NOTE: Service chambers with housings that are permanently crimped and sealed together are considered clamp type chambers even though they do not have a separate clamp band.

NOTE: A brake found at the adjustment limit is not a defect for the purposes of the 20 percent rule.

<b>'LONG STROKE' CLAMP TYPE BRAKE CHAMBER DATA</b>		
<b>TYPE</b>	<b>OUTSIDE DIAMETER</b>	<b>BRAKE ADJUSTMENT LIMIT</b>
12	5-11/16 (145mm)	1-3/4 (44.45mm)
16	6-3/8 (162mm)	2 (50.80mm)
20 (2-1/2" rated stroke)	6-25/32 (172mm)	2 (50.80mm)
20 (3" rated stroke)	6-25/32 (172mm)	2-1/2 (63.50mm)
24 (2-1/2" rated stroke)	7-7/32 (184mm)	2 (50.80mm)
24 (3" rated stroke)	7-7/32 (184mm)	2 -1/2 (63.50mm)
30	8-3/32 (206mm)	2 -1/2(63.50mm)

NOTE: Rated stroke is indicated on a tag and is only used to identify chamber size.

NOTE: Service chambers with housings that are permanently crimped and sealed together are considered clamp type chambers even though they do not have a separate clamp band.

NOTE: A brake found at the adjustment limit is not a defect for the purposes of the 20 percent rule.

<b>BOLT TYPE BRAKE CHAMBER DATA</b>		
<b>TYPE</b>	<b>OUTSIDE DIAMETER</b>	<b>BRAKE ADJUSTMENT LIMIT</b>
A	6-15/16 (176mm)	1-3/8 (34.93mm)
B	9-3/16 (234mm)	1-3/4 (44.45mm)

C	8-1/16 (205mm)	1-3/4 (44.45mm)
D	5-1/4 (133mm)	1-1/4 (31.75mm)
E	6-3/16 (157mm)	1-3/8 (34.93mm)
F	11 (279mm)	2-1/4 (57.15mm)
G	9-7/8 (251mm)	2 (50.80mm)

NOTE: A brake found at the adjustment limit is not a defect for the purposes of the 20 percent rule.

<b>ROTOCHAMBER DATA</b>		
<b>TYPE</b>	<b>OUTSIDE DIAMETER</b>	<b>BRAKE ADJUSTMENT LIMIT</b>
9	4-9/32 (109mm)	1-1/2 (38.10mm)
12	4-13/16 (122mm)	1-1/2 (38.10mm)
16	5-13/32 (138mm)	2 (50.80mm)
20	5-15/16 (151mm)	2 (50.80mm)
24	6-13/32 (163mm)	2 (50.80mm)
30	7-1/16 (180mm)	2-1/4 (57.15mm)
36	7-5/8 (194mm)	2-3/4 (69.85mm)
50	8-7/8 (226mm)	3 (76.20mm)

NOTE: A brake found at the adjustment limit is not a defect for the purposes of the 20 percent rule.

<b>DD-3 BRAKE CHAMBER DATA</b>		
<b>TYPE</b>	<b>OUTSIDE DIAMETER</b>	<b>BRAKE ADJUSTMENT LIMIT</b>
30	8-1/8 (206mm)	2-1/4 (57.15mm)

NOTE: This chamber has three air lines and is found on motor coaches.

NOTE: A brake found at the adjustment limit is not a defect for the purposes of the 20 percent rule.

c. **Wedge Brake Data**

The combined movement of both brake shoe lining scribe marks shall not exceed 1/8 inch (3.20mm).

- (1) A brake found at 1/8 inch (3.2mm) beyond the brake adjustment limit shall be considered .5 (1/2) a defective brake for determining the number of defective brakes per the 20 percent defective brake criterion. (Example: Type 30 clamp type brake chamber pushrods measure – Two (2) at 2 -1/8 inches (54 mm) equal 1 defective brake). (§393.47(e))

NOTE: When the vehicle, or combination of vehicles, is out-of-service for 20 percent brake violations, all brakes found beyond the brake adjustment limit must be repaired.

NOTE: When calculating/determining the number of defective brakes, round all fractions down to the next whole number (e.g. 4.5 brake violations = 4 defective brakes).

- (2) Any wedge brake where the combined brake lining movement of both top and bottom shoes exceeds 1/8 inch (3.2mm). (§393.47(f))

d. **Front Steering Axle(s) Brakes**

In addition to being included in the 20 percent criterion, the following criteria place a vehicle in an out-of-service condition:

- (1) Any inoperative or missing brake on either wheel of any steering axle of any vehicle equipped or required to be equipped with steering axle brake. (Missing - §393.42, §393.48(a) or Inoperative – §393.48(a))

- (2) Drum (Cam-type and Wedge) Air Brakes

- (a) 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.

- (b) Mismatched brake adjustment length. (§393.47(c))

- (c) Defective lining conditions

- i. Lining cracks or voids exceed 1/16 inch (1.6mm) in width observable on the edge of the lining. (§393.47(a))
- ii. 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))
- iii. Crack that exceeds 1-1/2 inch (38.1mm) in length. (§393.47(a))
- iv. Loose lining segment. (Approximately 1/16 inch (1.6mm) or more movement.) (§393.47(a))
- v. Complete lining segment missing. (§393.47(a))
- vi. The friction surface of the brake drum and the brake friction material are contaminated by oil or grease. (§393.47(a))

NOTE: Also refer to “Wheels, Rims and Hubs” if wheel is actively leaking.

- vii. Lining with a thickness less than 3/16 inch (4.8mm) for a shoe with a continuous strip of lining or ¼ inch (6.5mm) for a shoe with two lining blocks for drum brakes or to wear indicator if lining is so marked. (§393.47(d)(1))

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

- (a) Mismatched air chamber sizes. (§393.47(b))  
NOTE: Mismatched air chamber size exclude 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.
- (b) Mismatched brake adjuster length. (§393.47(c))
- (c) Missing brake pad. (§393.47(a))
- (d) Rotor has evidence of metal to metal contact over the rotor friction surface on either side. (§393.48(a))

(e) Rotor has severe rusting on the rotor friction surface on either side (light rusting on the friction surface is normal). (§393.48(a))

(f) The friction surface of the brake rotor and the brake friction material are contaminated by oil or grease. (§393.47(a))

NOTE: Also refer to “Wheels, Rims and Hubs” if wheel seal is actively leaking.

(g) Brake pad thickness less than 1/16 inch (1.6mm) or to wear indicator if lining is so marked. (§393.47(d)(1))

(4) **Hydraulic Brakes**

(a) Missing lining or pad. (§393.47(a))

(b) Movement of the caliper within the anchor plate, in the direction of wheel rotation, exceeds 1/8 inches (3.2mm). (§393.48(a))

(c) Rotor has evidence of metal to metal contact over the rotor friction surface on either side. (§393.48(a))

(d) Rotor has severe rusting on the rotor friction surface on either side (light rusting on the friction surface is normal). (§393.48(a))

(e) 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))

NOTE: Also refer to “Wheels, Rims and Hubs” if wheel seal is actively leaking.

(f) Lining with a thickness of 1/16 inch (1.6mm) or less at the shoe center for disc or drum brakes. (§393.47(d)(1))

e. **Spring Brake Chamber**

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

f. **Parking Brake**

No brakes on the vehicle are applied upon actuation of the parking brake control, including driveline hand controlled parking brakes. (§393.41)

g. **Brake Smoke/Fire**

Brake malfunction causing smoke or fire to emit from the wheel end. (§393.48)(a))

Example: Brake lining continuously in contact with brake drum or rotor.

NOTE: This does not include overheating due to severe brake use.

NOTE: Refer to “Wheels, Rims and Hubs”; as the cause may either be the brakes or a problem in the hub and bearing area.

h. **Brake Drums or Rotors (Discs)**

(1) Any portion of the drum has any external crack, or has any crack that opens upon brake application. (§393.47(a))

(2) Any rotor (disc) with a crack in length of more than 75 percent of the friction surface and passes completely through the rotor to the center vent from either side or completely through a solid rotor. (§393.47(a))

(3) Any portion of the drum or rotor (discs) missing or in danger of falling away. (§393.47(a))

NOTE: Do not confuse short hairline heat check cracks with flexural cracks. (§393.47(a))

i. **Brake Hose/Tubing**

(1) Any damage extending through the outer reinforcement ply. (§393.45(a))

NOTE: Rubber impregnated fabric cover is not a reinforcement ply.

NOTE: Thermoplastic nylon tube may have braid reinforcement or color difference between cover and inner tube. Exposure of second color is out-of-service condition.

- (2) Bulge/swelling when air pressure is applied. (§393.45(a))
- (3) Audible leak at other than a proper connection. (§393.45(a))
- (4) Improperly joined such as a splice made by sliding the hose ends over a piece of tubing and clamping the hose to the tube. (§393.45(a))
- (5) Damaged by heat, broken, or crimped in such a manner as to restrict air flow. (§393.45(a))

j. **Air Pressure Gauge**

Inoperative or defective primary or secondary pressure gauge. (§393.51(c))

k. **Low pressure warning device**

Low pressure warning device missing, inoperative, or does not operate if either the primary or secondary reservoir is at 55 psi (379 kPa) and below, or 1/2 of the governor cut-out pressure, whichever is less. (§393.51(c))

NOTE: If either an audible or visual warning device is working as required, vehicle should not be declared out-of-service.

l. **Air Loss Rate**

If an air leak is discovered and either the primary or secondary reservoir pressure is not maintained when: (§396.3(a)(1))

- (1) Governor is cut-in;
- (2) Reservoir pressure is between 80 - 90 psi (551-620 kPa);
- (3) Engine is at idle; **and**
- (4) Service brakes are fully applied.

m. **Air Reservoir**

Air reservoir security; separated from its original attachment points. (§396.3(a)(1))

n. **Air Compressor** (Normally to be inspected when readily visible or when conditions indicate compressor problems.)

- (1) Loose compressor mounting bolts. (§396.3(a)(1))

- (2) Cracked, broken, or loose pulley. (§396.3(a)(1))
- (3) Cracked or broken mounting brackets, braces, or adapters. (§396.3(a)(1))

o. **Hydraulic Brakes** (Including: Power Assist over Hydraulic and Engine Driven Hydraulic Booster.)

- (1) No pedal reserve with engine running. (§393.40(b))
- (2) Master cylinder less than 1/4 full. (§396.3(a)(1))

NOTE: Normally to be inspected when readily visible or problems are apparent.

- (3) Power assist unit fails to operate. (§396.3(a)(1))
- (4) Seeping or swelling brake hose(s) under application of pressure. (§393.45(a))
- (5) Hydraulic hose(s) abraded (chafed) through outer cover-to-fabric layer. (§393.45(b)(2))
- (6) Fluid lines or connections restricted, crimped, cracked, or broken. (§393.45(a))
- (7) Any visually observed leaking hydraulic fluid in the brake system upon full application. (§393.45(a))
- (8) Brake failure light/low fluid warning light on and/or inoperative. (§393.51(b))

p. **Vacuum System**

- (1) Insufficient vacuum reserve to permit one full brake application after engine is shut off. (§393.50(b))
- (2) Vacuum hose(s) or line(s) restricted, abraded (chafed) through outer cover-to-cord ply, crimped, cracked, broken, or has collapse of vacuum hose(s) when vacuum is applied. (§393.45(b)(2))

## 2. ELECTRICAL CABLES AND SYSTEMS IN ENGINE AND BATTERY COMPARTMENTS

- a. Electrical cable insulation chafed, frayed, damaged, burnt, causing bare cable to be exposed. (§393.28)
- b. Loose or corroded connections at battery posts or unsuitable insulated protection to electronic components. (§393.28)
- c. Missing or damaged protective grommets insulating electrical cables through metal compartments panels. (§393.28)
- d. Broken or unsecured mounting of electrical components. (§396.3(a)(1))
- e. Electrical cables unsupported, hanging or missing clamps that may cause a chafing or frayed condition. (§393.28)
- f. Any visible leaking of lubricant (i.e., engine supplied oil pressure) from electrical component such as alternator, auxiliary heater, etc. (§396.5(b))

Note: A cable is the power-conveying part of a high wattage/voltage electrical system. It usually has no circuit overload protection included in the system (i.e. battery to electrical starter or alternator to battery).

## 3. EMERGENCY EQUIPMENT - (All emergency equipment must be readily accessible to the driver.)

### a. **Fire Extinguisher**

Any vehicle not equipped with at least one type 2a10bc, 5 pound pressurized, dry chemical fire extinguisher with current certification tag.

### b. **First Aid and Body Fluid Kit**

Any vehicle that does not have a first aid kit and body fluid kit that is readily accessible and labeled

### c. **Emergency Warning Devices**

Any vehicle not equipped with at least three reflectorized triangle road warning devices.

#### **4. EMERGENCY EXITS**

- a. Emergency exits that are missing, inoperable, or obstructed. (§392.62)
- b. All emergency doors shall be accessible by a 12 inch minimum aisle. Aisle shall be unobstructed at all times by any type of barrier, seat, wheelchair or tie down, unless a flip seat is installed and occupied. A flip seat in the unoccupied (up) position shall not obstruct the 12 inch minimum aisle to any side emergency door and must be fully operational and flip up with slight hand pressure.
- c. The seat backs shall be slanted sufficiently to give aisle clearance of 15 inches at top of seat backs at center line.
- d. Any vehicle equipped with a buzzer or bell which does not operate when raised to an open position.
- e. Any emergency exit equipped with a starter interlock that is non-operational.
- f. Any vehicle whose emergency doors and windows are not marked according to the standards that were in effect at the time the bus was ordered.

NOTE: Exterior emergency window markings were required after November 2<sup>nd</sup>, 1992.

NOTE: Does not include operating instructions.

#### **5. EXHAUST SYSTEM**

- a. Any bus exhaust system leaking or discharging under the chassis more than 6 inches (15.24cm) forward of the rear most part of the bus when powered by a gasoline engine, or more than 15 inches (38.1cm) forward of the rear most part of the bus when powered by other than a gasoline or diesel engine. (§393.83)(d))

NOTE: Engine must be running to verify exhaust leaks.

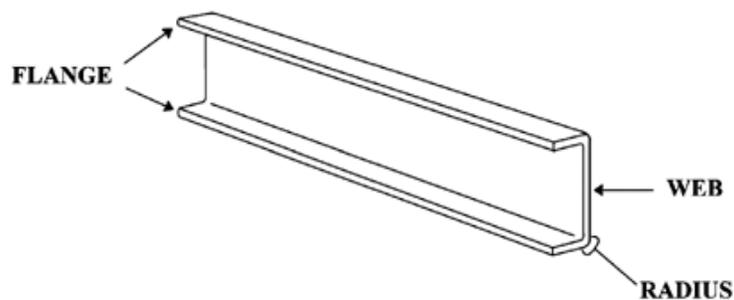
- b. No part of the exhaust system of any motor vehicle shall be so located as to be likely to result in burning, charring, or damaging the electrical wiring, the fuel supply, or any combustible part of the motor vehicle. (§393.83(a))

## 6. FRAME & BODY

### a. Frame members

- (1) Any cracked, loose, sagging, or broken frame side rail permitting shifting of the body onto moving parts or other condition indicating an imminent collapse of the frame. (§393.201(a))
- (2) 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))
- (3) One and one-half inches (38mm) or longer crack in frame side rail web which is directed toward bottom flange. (§393.201(a))
- (4) Any crack extending from the frame side rail web around the radius and into the bottom flange. (§393.201(a))
- (5) One inch (25mm) or longer crack in side rail bottom flange. (§393.201(a))

NOTE: Items (1) and (2) above apply to all buses, including those having unitized (monocoque) construction. Items (3) and (4) apply only to buses having a body-on-chassis design, such as most school buses.



b. **Tire and Wheel Clearance**

Any condition, including loading, that causes the body or frame to be in contact with a tire or any part of the wheel assemblies, at the time of inspection (§396.3(a)(1))

c. **Roof/Body Structure (Applicable only to Carpenter School Buses).**

- (1) Any body structure area (roof bow/Carlin rail/window post) that is cracked.
- (2) Any body structure area (roof bow/Carlin rail/window post) that has been welded and has cracked again, or additional cracks appear in the structural area after initial welding has occurred, is permanently scrapped.
- (3) Any body structure area (roof bow/Carlin rail/window post) where 20 percent or more of the structural area is cracked, will be scrapped.
- (4) Any lower Carlin rail that is cracked all the way through will be scrapped.

NOTE: Carpenter buses roof/body structure will be required to be inspected yearly.

## 7. **FUEL SYSTEM**

a. **Liquid Fuels**

- (1) A fuel system with a dripping leak at any point (including refrigerator or heater fuel systems). (§396.3(a)(1))
- (2) A fuel tank not securely attached to the vehicle. (§393.65(c))

NOTE: Some fuel tanks use spring or rubber bushings to permit movement.

- (3) Vehicle missing fuel cap. (§393.67(c)(7)(v))

b. **Gaseous Fuels**

Compressed Natural Gas (CNG), Liquefied Petroleum Gas (LPG) and Liquefied Natural Gas (LNG)

OCCUPATIONAL SAFETY NOTE: Personnel must exercise extreme caution whenever checking a gaseous fuel system for leaks. Any possibility of creating sparks, static electricity, friction, etc., must be avoided as they could cause a fire or explosion.

OCCUPATIONAL SAFETY NOTE: Vehicles with leaking gaseous fuel systems must be parked carefully. Gases escaping from CNG and LNG systems will rise. If the vehicle is parked inside a building or under a canopy, roof or similar cover, combustible gasses can collect beneath the ceiling. Escaping LPG falls and can form a “pool” of combustible gas near the ground and displaces air including oxygen. LPG and liquid LNG will flow into open drains. Combustible gases can explode when ignited by an open flame or spark.

(1) **CNG or LPG**

- (a) 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. (§396.3(a)(1))
- (b) Any fuel leakage from the CNG or LPG system detected audibly and verified by either a bubble test using non-ammonia, non-corrosive soap solution or 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.

- (c) Any fuel leakage from the CNG or LPG system detected visibly (evidence such as ice buildup or 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.(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.

(2) **LNG**

OCCUAPTIONAL SAFETY NOTE: LNG is a cryogenic material and presents a potential safety hazard due both to the extremely cold temperature of its liquid and the flammability of its vapor. Personnel inspecting such systems should exercise utmost caution including the wearing of proper eye protection, gloves and clothing.

NOTE: LNG liquid and vaporized gas is odorless and undetectable by the human sense of smell. Frost buildup is not necessarily evidence of leakage. Many components of LNG fuel systems are extremely cold and will exhibit an even coat of frost produced by moisture in the surrounding air condensing and freezing on them.

- (a) A cloud of water vapor coming from any component of the fuel system. (§396.3(a)(1))

NOTE: It is normal, particularly in humid conditions, for water vapor to collect around many portions of a LNG fuel system.

- (b) Any leak detected by a methane detection meter. (§396.3(a)(1))
- (c) Dripping liquid that boils or vaporizes in the air. (§396.3(a)(1))

**8. LIGHTING DEVICES (HEADLAMPS, TAIL LAMPS, STOP LAMPS, TURN SIGNALS, LAMPS AND BACK-UP WARNING ALARM)**

**a. Headlamps**

The bus does not have at least one head lamp operating on low beam. (Inoperative – (§393.9(a)); Obscured – (§393.9(b)); Missing – (§393.11(a)(1)); or, Driveaway – (§393.17(a)(1))

**b. Lamps on Rear**

The bus does not have at least one steady burning tail lamp on the rear of the vehicle, visible from 500 feet (152.4m). (Inoperative – (§393.9(a)); Obscured – (§393.9(b)); Missing – (§393.11(a)(1)); or, Driveaway – (§393.17(b)(2));

c. **Stop Lamp**

The bus does not have at least one operative stop lamp on the rear of a vehicle, visible at 500 feet (152.4m). (Inoperative – (§393.9(a)); Obscured – (§393.9(b)); Missing – (§393.11(a)(1)); or, Driveaway – (§393.17(b)(2))

d. **Turn Signals**

The bus does not have *an* operative turn signal visible on each side of the rear of the vehicle. (Inoperative – (§393.9(a)); Obscured – (§393.9(b)); Missing – (§393.11(a)(1)); or, Driveaway – (§393.17(b)(2))

e. **Four-Way Hazard Lights**

Four-way hazard lights do not fully operate in the front and rear of the vehicle.

f. **Overhead Amber Flashing Lights**

Overhead amber flashing lights do not fully operate when door is closed.

g. **Overhead Red Flashing Lights**

Overhead red flashing lights do not fully operate when vehicle is stopped and the loading/unloading door is open.

h. **Back-Up Warning Alarm**

The back-up warning alarm is not operating.

## 9. MISCELLANEOUS

a. **Aisle**

Any aisle that is obstructed or has objects blocking the exits.

b. **Child Safety Restraint Systems (CSRSs)**

Any installed CSRS that moves more than one inch forward or side-to-side when tested by grasping the seat at the belt path. (National Congress on School Transportation (NCST) page 245)

c. **Crossing Control Arm**

Any vehicle not equipped with a crossing control arm, or any vehicle whose crossing control arm is non-operational.

NOTE: Crossing control arms are not required for a school bus which is used solely to transport pupils with special needs who are individually loaded and unloaded in a manner which does not require them to walk in front of the bus.

d. **Defrosters**

Any vehicle whose defrosters are not operational in inclement weather.

e. **Handicap Wheelchair Lift**

(1) Wheelchair lift does not function as designed or is inoperable.

NOTE: Only applicable when transporting special needs students who would require the use of a handicapped lift.

(2) Any hydraulic line leaking during operation.

(3) Any wheelchair tie down that is missing or improperly installed, loose or damaged.

(4) Any wheelchair tie down this is not secure.

(5) Any lift with a platform barrier/roll stop that is non-operational.

(6) Any wheelchair lift whose brake interlock system, if equipped, is non-operational.

f. **Handrails**

Any vehicle whose handrails have not been modified to ensure that hood cords, back pack straps or belts will not become entangled.

g. **Horn**

Any vehicle whose horn does not work.

h. **Interior and Exterior Mirrors**

Any vehicle whose interior and exterior mirrors are cracked, broken or missing.

i. **Seats**

(1) Any vehicle with a seat that has been placed in the aisle.

- (2) Any seat/cushion that is not secured properly.
- (3) Any seat/barrier material so defective that it compromises the integrity of occupant protection and compartmentalization.

**j. Seat Belts**

When required, all seat belts and restraining devices shall be free from defects.

**k. Stop Signal Arm(s)**

- (1) Any vehicle manufactured after October 13<sup>th</sup>, 1987, whose stop signal arm(s) does not fully extend either automatically or manually when activated, or does not have at least one operable warning lamp.
- (2) Any vehicle manufactured after October 13<sup>th</sup>, 1987 and equipped with a LED light system, where at least 15 percent of the LED lights are inoperable.

**l. Windows**

- (1) Any vehicle whose windows are cracked with edges protruding on the inside of the bus.
- (2) Any vehicle whose windshield glass or driver side window has multiple cracks which obscure the driver's view.

**10. STEERING MECHANISM**

**a. Steering Wheel Lash (Free Play)**

See chart below: When any of these values - inch movement or degrees - are met or exceeded, vehicle shall be placed out-of-service. (§393.209(b))

**For power steering systems, the engine must be running.**

Steering Wheel Diameter	Manual System Movement 30°	Power System Movement 45°
16" (40.6cm)	4 1/2" (11.cm)(or more)	6 3/4" (17.1cm)(or more)
18" (45.7cm)	4 3/4" (12.7cm)(or more)	7 1/8" (18.1cm) (or more)

19" (48.2cm)	5" (12.7cm)(or more)	7 1/2" (19cm)(or more)
20" (50.8cm)	5 1/4" (13.3cm)(or more)	7 7/8" (20cm)(or more)
21" (53.3cm)	5 1/2" (13.9cm)(or more)	8 1/4" (20.9cm) (or more)
22" (55.8cm)	5 3/4" (14.6cm)(or more)	8 5/8" (21.9cm)(or more)

For power systems, if steering wheel movement exceeds 45 degrees before steering axle tires move, proceed as follows: Rock steering wheel left to right between points of power steering valve resistance. If that motion exceeds 30 degrees (or the inch movement values shown for manual steering) vehicle shall be placed out-of-service. This test is to differentiate between excessive lash and power systems designed to avoid providing steering assistance when the steering wheel is turned while the vehicle is motionless (not moving forward or backward).

**b. Steering Column**

- (1) Any absence or looseness of U-bolt(s) or positioning part(s). (§393.209(c))
- (2) Obviously repair-welded universal joint(s). (§393.209(d))
- (3) Steering wheel not properly secured. (§393.209(a))
- (4) Telescopic steering column does not lock into position. (§396.3(a)(1))
- (5) Tilt steering column does not lock in at least one position. (§396.3(a)(1))

**c. Front Axle Beam and all Steering Components other than Steering Column: (Including hub)**

- (1) Any crack(s). (§396.3(a)(1))
- (2) Any obvious welded repair(s). (§396.3(a)(1))

**d. Steering Gear Box (Including Rack and Pinion)**

- (1) Any mounting bolt(s) loose or missing. (§393.209(d))
- (2) Any crack(s) in gear box or mounting brackets. (§393.209(d))

- (3) Any obvious welded repairs. (§396.3(a)(1))
- (4) Any looseness of the yoke-coupling to the steering gear input shaft. (§393.209(d))

**e. Pitman Arm**

- (1) Any looseness of the pitman arm on the steering gear output shaft. (§393.209(d))
- (2) Any obvious welded repairs(s). (§396.3(a)(1))

**f. Power Steering**

Auxiliary power assist cylinder loose. (§393.209(e))

- (1) Evidence of power steering fluid leaking steadily (showing little variation or fluctuation) from any component in the system. This includes any component that shares the reservoir to the power steering system.

**g. Ball and Socket Joints**

- (1) Any movement under steering load of a stud nut. (§393.209(d))
- (2) Any motion, other than rotational, between any linkage member and its attachment point of more than 1/8 inch (3.2mm) measured with hand pressure only. (§393.209(d))
- (3) Any obvious welded repair(s). (§393.209(d))

**h. Tie Rods and Drag Links**

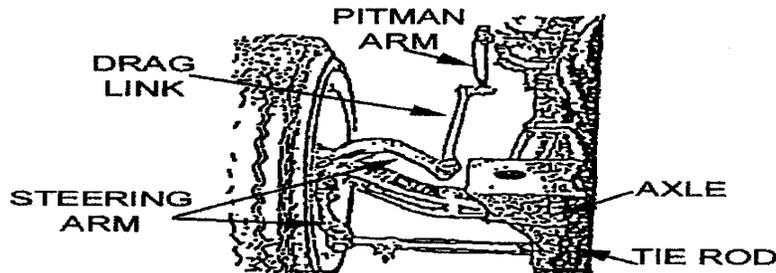
- (1) Loose clamp(s) or clamp bolt(s) on tie rods or drag links. (§396.3(a)(1))
- (2) Any looseness in any threaded joint. (§396.3(a)(1))

**i. Nuts**

Loose or missing on tie rods, pitman arm, drag link, steering arm, or tie rod arm. (§396.3(a)(1))

**j. Steering System**

Any modification or other condition that interferes with the free movement of any steering component. (§393.209(d))



## 11. SUSPENSION

### a. Axle Parts/Members

- (1) Any u-bolt(s) or other spring to axle clamp bolt(s) cracked, broken, loose, or missing. (§393.207(a))
- (2) Any axle, axle housing, spring hanger(s), or other axle positioning part(s) cracked, broken, loose, or missing resulting in shifting of an axle from its normal position. (§393.207(a))

NOTE: After a turn, lateral axle displacement is normal with some suspensions including composite springs mounted on steering axles.

### b. Spring Assembly

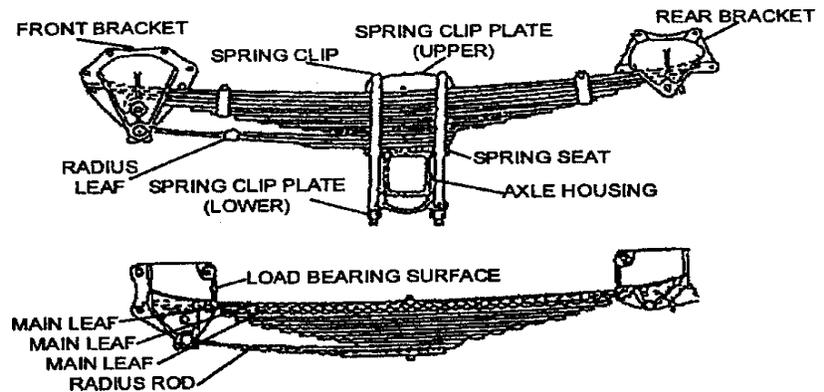
- (1) One-fourth or more of the leaves in any spring assembly broken. (§393.207(c))
- (2) Any leaf or portion of any leaf in any spring assembly is missing or separated. (§393.207(c))
- (3) Any broken main leaf in a leaf spring. (§393.207(c))

NOTES:

1. Any leaf of leaf spring assembly is a main leaf if it extends, at both ends, to or beyond:
  - a. The load bearing surface of a spring hanger or

equalizer.

- b. The spring end cap or insulator box mounted on the axle.
  - c. A spring eye, further: Any leaf or a helper spring assembly is a helper main leaf if it extends, at both ends, to or beyond the load bearing surface of its contact pad, hanger, or equalizer.
2. The radius rod leaf, in springs having such a leaf, has the same function as the torque or radius components referenced in “Suspensions - Torque, Radius, Tracking or Sway Bar Components” and should be treated as such a component for purposes of out-of-service.



- (4) Coil spring broken. (§393.207(d))
- (5) Rubber spring missing. (§393.207(a))
- (6) One or more leaves displaced in a manner that could result in contact with a tire, rim, brake, drum, or frame. (§393.207(c))
- (7) Broken torsion bar spring in torsion bar suspension. (§393.207(e))
- (8) Deflated air suspension (one or more deflated air spring/bag). (§393.207(f))

**c. Composite Springs**

- (1) Intersecting cracks of any length. (§393.207(c))

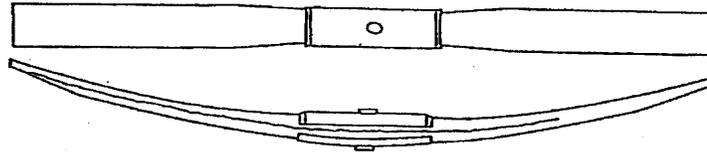
- (2) A crack that extends beyond  $3/4$  the length of the spring.  
(§393.207(c))

NOTE: A crack is a separation in any axis which passes completely through the spring.

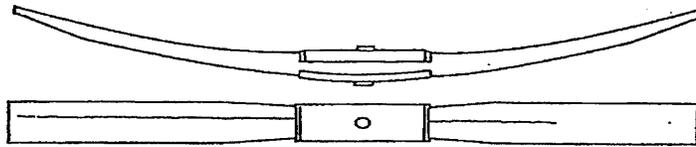
**d. Torque, Radius or Tracking Components**

Any part of a torque, radius, or tracking component assembly or any part used for attaching same to the vehicle frame or axle that is cracked, loose, broken, or missing (including spring leaves used as a radius or torque rod, missing bushings but not loose bushings in torque, track rods or sway bars). (§393.207(a))

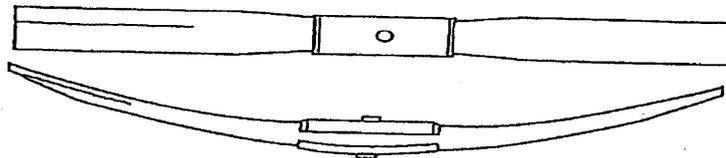
**Out-of-Service Conditions**



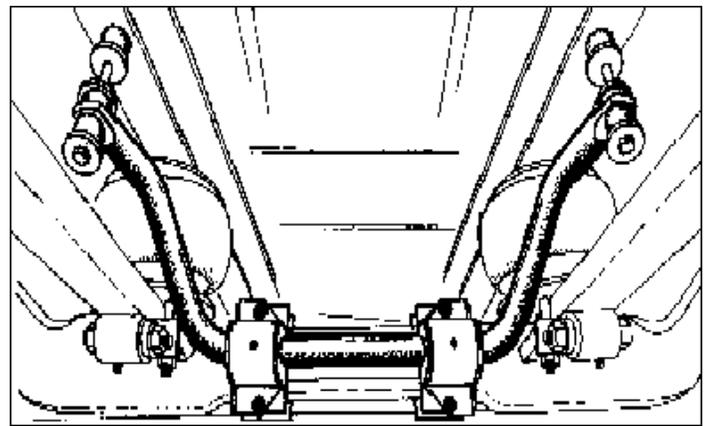
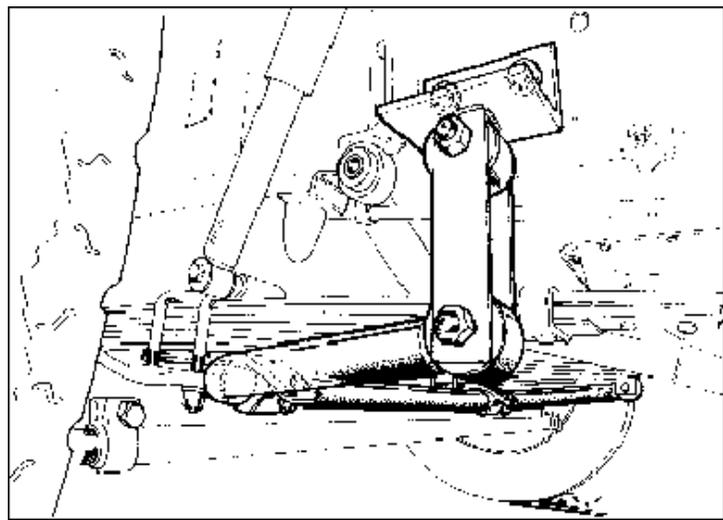
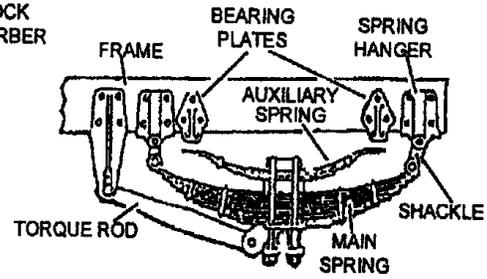
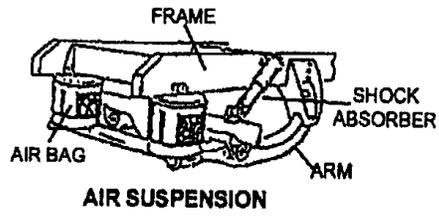
a) Side to side crack extending beyond  $3/4$  of the length of the spring. (A crack that extends beyond  $3/4$  the length of the spring.)

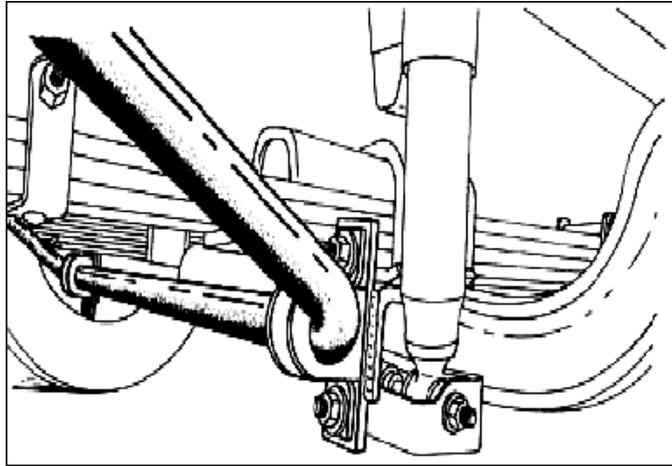


b) Top to bottom crack extending beyond  $3/4$  of the length of the spring. (A crack that extends beyond  $3/4$  the length of the spring.)



c) Intersecting cracks of any length.





## 12. TIRES

### a. Any Tire on any Front Steering Axle

- (1) With less than  $\frac{4}{32}$  inch tread when measured in any two adjacent major tread grooves (typically any groove containing a tread wear indicator) at any location on the tire. (§393.75(b))

NOTE: Measurements should not be made on stone ejectors or tread wear indicators.

- (2) When any part of the belt material, breaker strip or casing ply is showing in the tread. (§393.75(a)(1))
- (3) When sidewall is cut, worn, or damaged to the extent that the steel or fabric ply cord is exposed. (§393.75(a)(1))
- (4) Labeled “Not For Highway Use” or carrying other markings that indicate excluded use on steering axles. (§396.3(a)(1))
- (5) Visually observable bump, bulge, or knot apparently related to tread or sidewall separation. (§393.75(a)(2))

EXCEPTION: A bulge (due to a repair) of up to  $\frac{3}{8}$  inch (9.5mm) in height is allowed. This bulge may sometimes be identified by a blue triangular label in the immediate vicinity.

- (6) Tire has noticeable (e.g., can be heard or felt) leak, or has 50 percent or less of the maximum inflation marked on the tire sidewall. (§393.75(a)(3))

NOTE: Measure tire air pressure only if there is evidence the tire is under-inflated.

- (7) So mounted or inflated that it comes in contact with any part of the vehicle. (§396.3(a)(1))
- (8) Weight carried exceeds tire load limit. This includes overloaded tire resulting from low air pressure. (Load Limit—(§393.75(f) or Inflation Pressure—(§393.75(h))
- (9) Any vehicle that bias and radial tires have been combined.
- (10) Any vehicle with regrooved, recapped, or retread tires. (§393.75(d))

**b. All Tires Other than Those Found on the Front Steering Axle**

- (1) Tire has noticeable (e.g., can be heard or felt) leak, or has *fifty* (50) percent or less of the maximum inflation pressure marked on the tire sidewall. (§393.75(a)(3))

NOTE: Measure tire air pressure only if there is evidence the tire is under-inflated.

- (2) Any tire with visually observable bump or knot apparently related to tread or sidewall separation. (§393.75(a)(2))

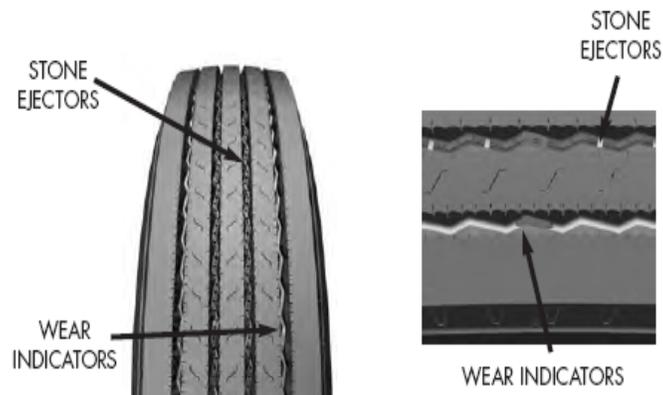
EXCEPTION: A bulge (due to a repair) of up to 3/8 inch (9.5mm) in height is allowed. The bulge may sometimes be identified by a blue triangular label in the immediate vicinity.

- (3) So mounted or inflated that it comes in contact with any part if the vehicle. (§396.3(a)(1))

NOTE: This includes any tire contacting its mate in a dual set.

- (4) Weight carried exceeds tire load limit. This includes overloaded tire resulting from low air pressure. (Load Limit—(§393.75(f)); (§393.75(g)(1)); (§393.75(g)(2)); or, Inflation Pressure—(§393.75(h))
- (5) Seventy-five (75) percent or more of the tread width loose or missing, in excess of 12 inches (30.4cm) in circumference. (§393.75(a)(2))
- (6) Bias Ply Tire: When more than one ply is exposed in the sidewall and the area exceeds 2 square inches (12.9 sq. cm). (§393.75(a)(1))

- (7) Radial Ply Tire: When more than one ply is exposed in the sidewall and the area exceeds 2 square inches (12.9 sq cm.). (§393.75(a)(1))
- (8) So worn that less than 2/32 inch tread remains when measured in any two adjacent major tread grooves (typically any groove containing a tread wear indicator) at 3 separate locations around the circumference of the tire at least 8 inches apart. (§393.75(c))
- (9) Any vehicle where bias and radial tires have been combined.



### 13. WHEELS, RIMS and HUBS

**a. Lock or Side Ring**

Bent, broken, cracked, improperly seated, sprung, or mismatched ring(s). (§393.205(a))

**b. Rim Cracks**

Any circumferential crack. (§393.205(a))

**c. Disc Wheel Cracks**

- (1) Any crack exceeding 3 inches (76.2mm) in length. (§393.205(a))
- (2) A crack extending between any two holes (hand holes, stud holes and center holes). (§393.205(a)).
- (3) Two or more cracks anyplace on the wheel. (§393.205(a))

**d. Bolt/Stud Holes (Disc Wheels)**

Any visible elongated bolt/stud hole. (§393.205(b))

**e. Spoke Wheel Cracks**

(1) Two or more cracks more than 1 inch (25.4mm) long across spoke or hub section. (§393.205(a))

(2) Two or more web areas with cracks. (§393.205(a))

**f. Tubeless Demountable Adapter Cracks**

(1) A crack exceeding 3 inches (76.2mm). (§393.205(a))

(2) Cracks at three or more spokes. (§393.205(a))

**g. Wheel Fasteners**

Loose, missing, broken, cracked, or stripped wheel fasteners that are ineffective as follows: for 10 fastener positions - 3 anywhere or 2 adjacent; for 8 fastener positions or less - 2 anywhere (this applies to both spoke and disc wheels). (§393.205(c))

**h. Welds**

(1) Any cracks in welds attaching disc wheel disc to rim. (§393.205(a))

(2) Any crack in welds attaching tubeless demountable rim to adapter. (§393.205(a))

(3) Any welded repair on any aluminum wheel(s). (§396.3(a)(1))

(4) Any welded repair other than disc to rim attachment on steel disc wheel(s). (§396.3(a)(1))

**i. Hubs**

(1) When any axle bearing (hub) cap, plug or filler plug is missing or broken allowing an open view into hub assembly. (§396.3(a)(1))

(2) Smoking from wheel hub assembly due to bearing failure. (§396.3(a)(1))

NOTE: Also refer to “Brake Systems – Brake Smoke/Fire”; as the cause may either be the brakes or a problem in the hub and bearing area.

- (3) 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. (§396.5(b))

NOTE: Also refer to the applicable contaminated friction material criterion in “*Brake Systems*”, when condition is present.

NOTE: Grease/oil on the brake lining edge, back of shoe, or drum edge and oil stain with no evidence of fresh oil leakage are not conditions for out-of-service.

- (4) Lubricant is leaking from the hub and is present on the wheel surface (caused by a loose hub cap or hub cap bolts, or hub cap damage) accompanied by evidence that further leakage will occur. (§396.5(b))

- (5) No visible or measurable amount of lubricant showing in hub. (§396.5(a))

## **14. WINDSHIELD WIPERS**

Any school bus that has an inoperable wiper or missing, or damaged parts that renders it ineffective. (§393.78(a) or (§393.78(b))