

4501-52-03

**Annual inspection criteria.**

[Comment: Information regarding availability, as well as the date or applicable version of the materials incorporated by reference in this rule, can be found in paragraphs (C) and (D) of rule 4501-52-01 of the Administrative Code.]

(A) Lighting requirements

(1) All exterior lighting devices shall be:

- (a) Electric;
- (b) Permanently and securely mounted except as provided in paragraph (A)(3)(e) of this rule;
- (c) Visible as to be capable of being seen at all distances between five hundred feet and fifty feet under clear atmospheric conditions during the time lamps are required to be lighted; and
- (d) Steadily burning except turn signals, stop lamps when used as turn signals, vehicular hazard warning flashing lamps, or warning lamps on school buses when used as such.

(2) Combination of lighting devices and reflectors

- (a) Except as provided in paragraph (A)(2)(b) of this rule, two or more lighting devices and reflectors, whether or not required by these rules, may be combined optically if:
  - (i) Each required lighting device and reflector conforms to the applicable rules in this chapter; and
  - (ii) Neither the mounting nor the use of a non-required lighting device or reflector impairs the effectiveness of a required lighting device or reflector or causes that device or reflector to be inconsistent with the applicable rules in 49 C.F.R. part 393.

(b) Prohibited combinations

- (i) A turn signal shall not be combined optically with either a head lamp or other lighting device or combination of lighting devices that produces a greater intensity of light than the turn signal lamp;

- (ii) A turn signal shall not be combined optically with a stop lamp unless the stop lamp function is always deactivated when the turn signal function is activated; or
- (iii) A clearance lamp shall not be combined optically with a tail lamp or identification lamp.

(3) Requirements for headlamps

- (a) Each bus shall be equipped with a headlighting system located at the front and composed of at least two headlamps, not including fog or other auxiliary lamps, with an equal number on each side of the vehicle.
- (b) Headlamps shall be white in color.
- (c) The height of the center point of the headlights shall be not less than twenty-two inches or more than fifty-four inches above the road surface.
- (d) Headlamps shall be constructed and installed so as to provide adequate and reliable illumination.
- (e) Each headlamp shall be mounted so that the beams are readily adjustable, both vertically and horizontally, and the mounting shall be such that the aim is not readily disturbed by ordinary conditions or service.
- (f) Each headlighting system shall provide an upper and lower distribution of light, selectable at the driver's will.

(4) Requirements for turn signals

- (a) Every bus shall be equipped with a directional signaling system capable of clearly indicating an intention to turn, or move, to either the right or left.
- (b) Every directional signaling system shall be visible from both the front and the rear.
- (c) Requirements for front turn signals

- (i) Each bus shall be equipped with at least two turn signals at or near the front, located and equally distributed on each side of the vertical center-line at the same height and as far apart as practicable.
- (ii) Front turn signals, while being operated as a turn signal, shall be amber in color.
- (iii) Front turn signals so constructed (double-faced) and located as to be visible from the front or the back of the bus shall have the front-facing lens amber in color and the rear-facing lens red in color.
- (iv) The height of the center point of each front turn signal shall be not less than fifteen inches or more than eighty-three inches above the road surface.

(d) Requirements for rear turn signals

- (i) Each bus shall be equipped, at the rear, with at least two turn signals, red or amber in color, located and equally distributed on each side of the vertical center-line at the same height and as far apart as practicable.

If the lighting device used as a rear turn signal is amber in color, the lighting device shall have no other function than that of a turn signal or vehicular hazard warning flashing lamps.

- (ii) The height of the center point of each rear turn signal shall be not less than fifteen inches or more than eighty-three inches above the road surface.

(e) Vehicular hazard warning flashing lamps

- (i) Every bus shall be equipped with a signaling system that, in addition to signaling turning movements, shall have a switch or combination of switches that will cause the two front turn signals and the two rear turn signals to flash simultaneously as a vehicular traffic hazard warning.

- (ii) The vehicular traffic hazard warning flashing lamps shall be capable

of flashing simultaneously with the ignition of the vehicle on or off.

(iii) The front vehicular traffic hazard warning flashing lamps shall be amber in color when operated as the vehicular traffic hazard warning flashing lamps.

(iv) The rear vehicular traffic hazard warning flashing lamps shall be either amber or red in color.

(5) Requirements for identification lamps

For the purposes of those provisions within this rule applying to buses having a specific minimum width, overall bus width measurements are to be made from a point on one side or end of a commercial motor vehicle to the same point on the opposite side or end of the vehicle. The following shall be excluded from the measured width of commercial motor vehicles, as applicable: rear view mirrors, turn signal lamps, handholds for cab entry/egress, splash and spray suppressant devices, load induced tire bulge; and all non-property carrying devices, or components thereof that do not extend more than three inches beyond each side of the vehicle.

(a) Front identification lamps

(i) Each bus eighty inches or more in overall width shall be equipped with three identification lamps, amber in color, mounted with the center lamp on the vertical centerline on the front of the bus.

(ii) All three identification lamps shall be on the same level and as close to the top of the bus as practicable with lamp centers spaced not less than six inches or more than twelve inches apart.

(iii) No bus may be equipped with lamps that are in a horizontal line with the required lamps specified in paragraphs (A)(5)(a)(i) and (A)(5)(a)(ii) of this rule unless those lamps are required by this rule.

(b) Rear identification lamps

(i) Each bus eighty inches or more in overall width shall be equipped with three identification lamps, red in color, mounted with the

center lamp as close a practicable to the vertical centerline on the rear of the bus.

(ii) All three identification lamps shall be on the same level and as close to the top of the bus as practicable with lamp centers spaced not less than six inches or more than twelve inches apart.

(iii) No bus may be equipped with lamps that are in a horizontal line with the required lamps specified in paragraphs (A)(5)(b)(i) and (A)(5)(b)(ii) of this rule unless those lamps are required by this rule.

(6) Requirements for clearance lamps

For the purposes of those provisions within this rule applying to buses having a specific minimum width, overall bus width measurements are to be made from a point on one side or end of a commercial motor vehicle to the same point on the opposite side or end of the vehicle. The following shall be excluded from the measured width of commercial motor vehicles, as applicable: rear view mirrors, turn signal lamps, handholds for cab entry/egress, splash and spray suppressant devices, load induced tire bulge; and all non-property carrying devices, or components thereof that do not extend more than three inches beyond each side of the vehicle.

(a) Front clearance lamps

Each bus eighty inches or more in overall width shall be equipped with two clearance lamps, amber in color, mounted one on each side of the vertical centerline to indicate overall width. The front clearance lamps shall be on the same level and as high as practicable.

(b) Rear clearance lamps

Each bus eighty inches or more in overall width shall be equipped with two clearance lamps, red in color, mounted one on each side of the vertical centerline to indicate overall width. The rear clearance lamps shall be on the same level and as high as practicable.

(c) Requirements for side marker lamps

(i) Front side marker lamps

Each bus shall be equipped with two side marker lamps, amber in color, mounted one on each side and located as far to the front as practicable.

Front side marker lamps shall not be located less than fifteen inches above the road surface.

(ii) Intermediate side marker lamps

Each bus, with an overall length greater than thirty feet, shall be equipped with two side marker lamps, amber in color, mounted one on each side, at or near the midpoint between the front and rear side marker lamps.

Intermediate side marker lamps shall not be located less than fifteen inches above the road surface.

(iii) Rear side marker lamps

Each bus shall be equipped with two side marker lamps, red in color, mounted one on each side and located as far to the rear as practicable.

Rear side marker lamps shall not be located less than fifteen inches above the road surface.

(d) Requirements for reflectors

(i) Front side reflectors

Each bus shall be equipped with two reflectors, amber in color, mounted one on each side as far to the front as practicable.

Front side reflectors shall not be located less than fifteen inches or more than sixty inches above the road surface.

(ii) Intermediate side reflectors

Each bus, with an overall length greater than thirty feet, shall be equipped with two side reflectors, amber in color, mounted one on each side, at or near the midpoint between the front and rear side reflectors.

Intermediate side reflectors shall not be located less than fifteen

inches or more than sixty inches above the road surface.

(iii) Rear side reflectors

Each bus shall be equipped with two side reflectors, red in color, mounted one on each side and located as far to the rear as practicable.

Rear side reflectors shall not be located less than fifteen inches or more than sixty inches above the road surface.

(iv) Rear reflectors

Each bus shall be equipped with two reflectors, red in color, mounted one on each side of the vertical centerline as far apart as practicable.

The rear reflectors shall be on the same level and located not less than fifteen inches or more than sixty inches above the road surface.

(e) Requirements for tail lamps

(i) Each bus shall be equipped with at least two tail lamps, red in color, mounted and equally distributed, on each side of the vertical centerline, at the rear of the bus.

(ii) The tail lamps shall be located as far apart as practicable and at the same level but not less than fifteen inches or more than seventy-two inches above the road surface.

(f) Requirements for stop lamps

(i) Each bus shall be equipped with at least two stop lamps, red in color, mounted and equally distributed, on each side of the vertical centerline, at the rear of the bus.

(ii) The stop lamps shall be located as far apart as practicable and at the same level but not less than fifteen inches or more than seventy-two inches above the road surface.

(iii) The stop lamps shall be actuated upon application of the bus

service brakes.

(g) Requirements for license plate lamp

- (i) Each bus shall be equipped with at least one license plate lamp, white in color, located at the rear license plate.
- (ii) The license plate lamp shall illuminate the license plate from either the top or the sides.
- (iii) The license plate lamp shall be illuminated when the bus headlamps are illuminated.

(h) Requirements for back-up lamp

- (i) Each bus shall be equipped with at least one back-up lamp, white in color, located on the rear of the bus.
- (ii) The back-up lamp shall operate when the bus is in reverse gear.

(B) Requirements for electrical system

(1) The electrical wiring shall:

- (a) Be systematically arranged and installed in a workmanlike manner. The presence of bare, loose, dangling, chafing, or poorly connected wires is prohibited.
- (b) Be so installed that connections are protected from weather, abrasion, road splash, grease, oil, fuel and chafing;
  - (i) Battery ground on a grounded electrical system shall be readily accessible.
  - (ii) Electrical contact surfaces shall be clean and free of oxide, paint, or other non-conductive coating.
- (c) Be grouped together, when possible, and protected by nonconductive tape, braid, or other covering capable of withstanding severe abrasion or shall

be protected by being enclosed in a sheath or tube;

- (d) Be properly supported in a manner to prevent chafing;
  - (e) Not be so located as to be likely to be charred, overheated, or enmeshed in moving parts;
  - (f) Not have terminals or splices located above the fuel tank except for the fuel sender wiring and terminal; and
  - (g) Be protected when passing through holes in metal by a grommet, or other means, or the wiring shall be encased in a protective covering.
- (2) The electrical current to all low tension circuits shall pass through overload protective devices except that this requirement shall not apply to battery-to-starting motor or battery-to-generator circuits, ignition and engine control circuits, horn circuits, electrically-operated fuel pump circuits, or electric brake circuits.

Buses manufactured after June 30, 1953, shall have protective devices for electrical circuits arranged so that:

- (a) The headlamp circuit or circuits shall not be affected by a short circuit in any other lighting circuits; or
  - (b) The protective device shall be an automatic reset overload circuit breaker if the headlight circuit is protected in common with other circuits.
- (3) Every storage battery, unless located in the engine compartment, shall be covered by a removable cover or enclosure.
- (a) Removable covers, or enclosures shall be substantial and shall be securely latched or fastened.
  - (b) The storage battery compartment and adjacent metal parts which might corrode by reason of battery leakage shall be painted or coated with an acid-resisting paint or coating and shall have openings to provide ample battery ventilation and drainage.
  - (c) Whenever the cable to the starting motor passes through a metal compartment, the cable shall be protected against grounding by an acid

and waterproof insulating bushing.

- (d) Whenever a battery and a fuel tank are both placed under the driver's seat, they shall be partitioned from each other, and each compartment shall be provided with an independent cover, ventilation, and drainage.

(C) Requirements for braking systems

- (1) All buses shall be equipped with brakes acting on all wheels.
- (2) All brakes shall at all times be capable of operating.
- (3) All components in the braking system shall be properly maintained, properly secured and free of leaks, cracks, loose or broken parts.
  - (a) The service brake chambers and spring brake chambers on each end of an axle shall be the same size.
  - (b) The effective length of the slack adjuster on each end of an axle shall be the same.
  - (c) Brake linings and pads

(i) Air drum brakes

Steering axle brake linings or pads shall have a thickness of not less than three-sixteenth inch at the shoe center for a shoe with a continuous strip of lining; less than one-quarter inch at the shoe center for a shoe with two pads; or worn to the wear indicator if the lining is so marked.

Non-steering axle brake linings or pads shall have a thickness of not less than one-quarter inch or to the wear indicator if the lining is so marked.

(ii) Air disc brakes

Brake linings or pads shall have a thickness of not less than one-eighth inch.

(iii) Hydraulic brakes

Brake linings or pads shall have a thickness of not less than one-sixteenth inch.

(iv) Electric brakes

Brake linings or pads shall have a thickness of not less than one-sixteenth inch.

(4) All buses shall have:

(a) A service brake system so arranged that one application valve shall when applied operate all the service brakes; and

(b) Brake system warning devices and gauges as follows:

(i) Every bus shall be equipped with a signal that provides a warning to the driver when a failure occurs in the vehicle's service brake system.

(a) Hydraulic brake systems

A bus manufactured on or after July 1, 1973, and having service brakes activated by hydraulic fluid shall be equipped with a warning signal that performs as follows:

(i) If federal motor vehicle safety standard number 105, 49 C.F.R. section 571.105 was applicable at the time the bus was manufactured, the warning signal shall conform to the requirements of that standard.

(ii) If federal motor vehicle safety standard number 105, 49 C.F.R. section 571.105 was not applicable to the bus at the time the bus was manufactured, the warning signal shall become operative, before or upon application of the brakes in the event of a hydraulic-type complete failure of a partial system. The signal shall be readily audible or visible to the driver.

(b) Air brake systems

A bus having service brakes activated by compressed air

shall be equipped, and perform as follows:

(i) The bus shall have a low air pressure warning device that conforms to the following requirements:

(A) If federal motor vehicle safety standard number 121, 49 C.F.R. section 571.121 was applicable to the vehicle at the time it was manufactured, the warning device shall conform to the requirements of that standard.

(B) If federal motor vehicle safety standard number 121, 49 C.F.R. section 571.121 was not applicable to the vehicle at the time it was manufactured, the vehicle shall have a device that provides a readily audible or visible continuous warning to the driver whenever the pressure of the compressed air in the braking system is below a specified pressure, which shall be at least one-half of the compressor governor cutout pressure.

(ii) The bus shall have a pressure gauge which indicates to the driver the pressure in pounds per square inch available for braking.

(c) Vacuum brake systems

Every bus having service brakes activated by vacuum shall be equipped with:

(i) A device that provides a readily audible or visible continuous warning to the driver whenever the vacuum in the bus supply reservoir is less than eight inches of mercury; and

(ii) A vacuum gauge which indicates to the driver the vacuum in inches of mercury available for braking.

(d) Hydraulic brakes applied or assisted by air or vacuum

A bus having a braking system in which hydraulically

activated service brakes are applied or assisted by compressed air or vacuum shall be equipped with both a warning signal that conforms to the requirements of paragraph (C)(4)(b)(i)(a) and paragraph (C)(4)(b)(i)(b) of this rule or paragraph (C)(4)(b)(i)(c) of this rule.

- (ii) The warning signals, devices and gauges required by this rule shall be maintained in operative condition.

(c) A parking brake system

- (i) All buses shall be equipped with a parking brake system adequate to hold the vehicle under any condition of loading.
- (ii) The parking brake system shall at all times be capable of being applied either by the driver's muscular effort, or by spring action, or by other energy, provided, that if such other energy is depended on for application of the parking brake, then an accumulation of such energy shall be isolated from any common source and used exclusively for the operation of the parking brake.
- (iii) The parking brake system shall be held in the applied position by energy other than fluid pressure, air pressure, or electric energy.

(d) Emergency brake system

- (i) A bus manufactured on or after July 1, 1973, shall have an emergency brake system consisting of either:
  - (a) Emergency features of the service brake system; or
  - (b) A system separate from the service brake system.

A control by which the driver applies the emergency brake system shall be located so that the driver can readily operate it when properly restrained by any seat belt assembly provided for the driver's use. The control for applying the emergency brake system may be combined with either the control for applying the service brake system or the control for applying the parking brake system. However, all three controls may not be combined.

- (5) All buses, if equipped with air brakes, shall have the braking system so constructed that in the event any brake line to any of the front wheels is broken, the driver can apply the brakes on the rear wheels despite such breakage.

The means used to apply the brakes may be located forward of the driver's seat as long as it can be operated manually by the driver when the driver is properly restrained by any seat belt assembly provided for use.

Every bus shall meet this requirement or comply with the rules and regulations in effect at the time of its manufacturer.

(6) Requirements for brake tubing and brake hose

- (a) All brake tubing and brake hoses shall:

- (i) Be free of leaks;
- (ii) Be long and flexible enough to accommodate without damage all normal motions of the parts to which it is attached;
- (iii) Be suitably secured against chafing, kinking, or other mechanical damage; and
- (iv) Be installed in a manner that prevents it from contacting the vehicle's exhaust system or any other source of high temperatures.

- (b) All connections for air, vacuum, or hydraulic braking systems shall:

- (i) Be properly connected;
- (ii) Be free of leaks, constrictions, or other conditions which would adversely affect the performance of the brake system.

(7) Reservoirs required

- (a) All air or vacuum braking systems shall be equipped with a reservoir(s) sufficient to ensure a full service brake application with the engine stopped without depleting the air pressure or vacuum below seventy per cent of that pressure or degree of vacuum indicated by the gauge immediately before the brake application is made. For the purpose of

this section, a full service brake application is considered to be made when the service brake pedal is pushed to the limit of its travel.

- (b) All reservoirs shall be secured and free of leaks.
- (c) Each service reservoir system shall be protected against a loss of air pressure or vacuum due to a failure or leakage in the system between the service reservoir and the source of air pressure or vacuum, by check valves or equivalent devices whose proper functioning can be checked without disconnecting any air or vacuum line or fitting.
- (d) Each reservoir shall have a condensate drain valve that can be manually operated.

Automatic condensate drain valves may be used provided the automatic feature may be operated manually or manual means of draining the reservoir(s) is retained.

- (8) All brakes shall be in proper adjustment for the size and type of brake and shall not meet or exceed the specifications contained in the following tables relating to "adjustment limit." (Dimensions are in inches.)

Clamp type brake chamber data

| Type | Outside diameter (inches) | Adjustment limit (inches) |
|------|---------------------------|---------------------------|
| 6    | 4-1/2                     | 1-1/4                     |
| 9    | 5-1/4                     | 1-3/8                     |
| 12   | 5-11/16                   | 1-3/8                     |
| 16   | 6-3/8                     | 1-3/4                     |
| 20   | 6-25/32                   | 1-3/4                     |
| 24   | 7-7/32                    | 1-3/4                     |
| 30   | 8-3/32                    | 2                         |
| 36   | 9                         | 2-1/4                     |

"Long stroke" clamp type brake chamber data

| Type | Outside diameter (inches) | Adjustment limit (inches) |
|------|---------------------------|---------------------------|
|------|---------------------------|---------------------------|

|                          |         |       |
|--------------------------|---------|-------|
| 12                       | 5-11/16 | 1-3/4 |
| 16                       | 6-3/8   | 2     |
| 20 (2-1/2" rated stroke) | 6-25/32 | 2     |
| 20 (3" rated stroke)     | 6-25/32 | 2-1/2 |
| 24 (2-1/2" rated stroke) | 7-7/32  | 2     |
| 24 (3" rated stroke)     | 7-7/32  | 2-1/2 |
| 30                       | 8-3/32  | 2-1/2 |

Bolt type brake chamber data

| Type | Outside diameter (inches) | Adjustment limit (inches) |
|------|---------------------------|---------------------------|
| A    | 6-15/16                   | 1-3/8                     |
| B    | 9-3/16                    | 1-3/4                     |
| C    | 8-1/16                    | 1-3/4                     |
| D    | 5-1/4                     | 1-1/4                     |
| E    | 6-3/16                    | 1-3/8                     |
| F    | 11                        | 2-1/4                     |
| G    | 9-7/8                     | 2                         |

Rotochamber data

| Type | Outside diameter (inches) | Adjustment limit (inches) |
|------|---------------------------|---------------------------|
| 9    | 4-9/32                    | 1-1/2                     |
| 12   | 4-13/16                   | 1-1/2                     |
| 16   | 5-13/32                   | 2                         |
| 20   | 5-15/16                   | 2                         |
| 24   | 6-13/32                   | 2                         |
| 30   | 7-1/16                    | 2-1/4                     |
| 36   | 7-5/8                     | 2-3/4                     |

|    |       |   |
|----|-------|---|
| 50 | 8-7/8 | 3 |
|----|-------|---|

DD-3 brake chamber data

| Type  | Outside diameter (inches) | Adjustment limit (inches) |
|---|---------------------------|---------------------------|
| 30*   | 8-1/8                     | 2-1/4                     |
| * This chamber has three air lines and is found on motor coaches. |                           |                           |

Wedge brake data

Combined movement of both brake shoe lining scribe marks shall not exceed one-eighth inch.

(D) Requirements for steering systems

- (1) All bus steering system components shall be securely mounted, not leaking, not cracked or broken.
- (2) Steering system components shall not contain any welded repairs, modifications or other conditions that interfere with free movement of any steering component.
- (3) The steering wheel shall be securely attached and operate freely through the limit of travel in both directions.

The steering wheel shall not have any spokes cracked through or missing.

- (4) The steering column shall be securely fastened.

Steering column U-bolts or other positioning parts shall not be loose or missing.

- (5) The steering universal joints shall not be worn, faulty or obviously repaired by welding.

- (6) The steering gear box shall not have loose or missing mounting bolts or cracks in the gear box or mounting brackets.

- (7) The pitman arm on the steering gear output shaft shall not be loose on the

steering gear output shaft.

(8) Ball and socket joints

(a) There shall not be any movement, under steering load, of a stud nut.

(b) There shall not be any motion, other than rotational, between any linkage member and its attachment point of more than one-eighth inch measured with hand pressure only.

(9) There shall not be loose or missing nuts on tie rods, pitman arm, drag link, steering arm, or tie rod arm.

(10) Steering wheel lash shall not exceed the following parameters:

Steering wheel lash parameters

| Steering wheel diameter | Manual steering system | Power steering system |
|-------------------------|------------------------|-----------------------|
| 16" or less             | 2"+                    | 4 1/2"+               |
| 18"                     | 2 1/4"+                | 4 3/4"+               |
| 19"                     | 2 3/8"+                | 5"+                   |
| 20"                     | 2 1/2"+                | 5 1/4"+               |
| 21"                     | 2 5/8"+                | 5 1/2"+               |
| 22"                     | 2 3/4"+                | 5 3/4"+               |

(11) Power steering systems

(a) All components of the power system shall be in operating condition.

(b) No parts shall be loose, broken or missing.

(c) Belts shall not be frayed, cracked or slipping.

(d) Power steering systems shall not leak.

(e) Power steering systems shall have sufficient fluid in the reservoir.

(E) Requirements for suspension systems

- (1) No axle positioning part shall be cracked, broken, loose or missing.
- (2) Axles shall be in proper alignment.
- (3) No leaf spring shall be cracked, broken, or missing or shifted out of position.
- (4) No coil spring shall be cracked or broken.
- (5) No torsion bar or torsion bar suspension shall be cracked or broken.
- (6) Air suspension
  - (a) The air pressure regulator valve shall not allow air into the suspension system until at least fifty-five pounds per square inch (psi) is in the braking system.
  - (b) The vehicle shall be level (not tilting to the left or right).
  - (c) Air leakage shall not be greater than three psi in a five-minute time period when the vehicle's air pressure gauge shows normal operating pressure (between ninety and one hundred psi).
  - (d) Air suspension components shall be capable of maintaining air pressure

(F) Requirements for tires

- (1) Tires shall not have:
  - (a) Body ply or belt material exposed through the tread or sidewall;
  - (b) Any tread or sidewall separation;
  - (c) Be flat, under-inflated or have an audible leak; or

- (d) Any cut(s) to the extent that the ply or belt material is exposed.
- (2) The steering axle shall not be equipped with any tire that is regrooved, recapped or retreaded.
- (3) Steering axle tires shall have a tread depth of at least four thirty-seconds of an inch when measured at any major tread groove. Measurements shall not be made where tie bars, humps, or fillets are located.
- (4) Non-steering axle tires shall have a tread depth of at least two thirty-seconds of an inch when measured at any major tread groove. Measurements shall not be made where tie bars, humps, or fillets are located.

(G) Requirements for wheels

Wheels or rims shall not:

- (1) Be cracked or broken;
- (2) Have stud or bolt holes elongated (out of round); or
- (3) Have missing or loose nuts or bolts.

(H) Requirements for frames

- (1) Frames shall not be cracked, loose, sagging or broken.
- (2) Bolts or brackets securing the body to the frame shall not be loose, broken, or missing.
- (3) Frame rail flanges between the axles shall not be bent, cut or notched, except as specified by the manufacturer.
- (4) All repairs to any frame member shall be done in a workmanlike manner and contain no cracked or broken repairs.

(I) Requirements for cab and body components

- (1) Door and door parts used as an entrance or exit shall not be missing or broken.

- (2) Doors shall not sag so that they cannot be properly opened or closed.
- (3) No door shall be wired shut or otherwise secured in the closed position so that it cannot be readily opened.
- (4) All bolts or brackets securing body components to the frame shall not be loose, broken, or missing.
- (5) The hood shall be securely fastened.
- (6) All seats shall be securely mounted.
- (7) The front bumper shall not be missing, loosely attached, or protruding beyond the outside edges of the bus.

(J) Requirements for exhaust systems

- (1) Every bus having a device capable of expelling harmful combustion fumes shall have a system to direct the discharge of such fumes.
- (2) Every exhaust system shall:
  - (a) Have no part located where its location would likely result in burning, charring, or damaging the electrical wiring, the fuel supply, or any combustible part of the bus;
  - (b) Not discharge to the atmosphere at a location immediately below the fuel tank or the fuel tank filler pipe;
  - (c) For gasoline engine powered buses, discharge to the atmosphere at or within six inches forward of the rearmost part of the bus;
  - (d) For other than gasoline engine powered buses, discharge to the atmosphere either:
    - (i) At or within fifteen inches forward of the rearmost part of the vehicle; or
    - (ii) To the rear of all doors or windows designed to be open, except

windows designed to be opened solely as emergency exits;

- (e) Be securely fastened to the bus;
  - (f) Not be temporarily repaired with wrap or patches; and
  - (g) Not have any leak or discharge at a point forward of the discharge locations prescribed in paragraph (J)(2)(c) or paragraph (J)(2)(d) of this rule.
- (3) The exhaust system may use hangers which permit required movement due to expansion and contraction caused by heat of the exhaust and relative motion between engine and chassis of the vehicle.

(K) Requirements for fuel systems

- (1) The rules in this section apply to systems for containing and supplying fuel for the operation of a bus and for the operation of auxiliary equipment installed on, or used in connection with a bus.

(2) Location of fuel system

Each fuel system shall be located on the bus so that:

- (a) No part of the system extends beyond the widest part of the bus;
- (b) No part of a fuel tank is forward of the front axle;
- (c) Fuel spilled vertically from a fuel tank while it is being filled will not contact any part of the exhaust or electrical systems, except the fuel level indicator assembly;
- (d) Fill pipe openings are located outside the vehicle's passenger compartment and its cargo compartment; and
- (e) No part of the fuel system of a bus manufactured on or after January 1, 1973, is located within or above the passenger compartment.

(3) Fuel tank installation

Each fuel tank shall be securely attached to the bus in a workmanlike manner.

- (4) The fuel system shall not supply fuel by gravity or siphon feed directly to the carburetor or injector.
- (5) If the fuel system includes a selection control valve which is operable by the driver to regulate the flow of fuel from two or more fuel tanks, the valve shall be installed so that either:
  - (a) The driver may operate the control valve while watching the roadway without leaving the driver's seat; or
  - (b) The driver shall stop the bus and leave the driver's seat in order to operate the control valve.

(6) Fuel tank certification and markings

Each liquid fuel tank shall be legibly and permanently marked by the manufacturer with the following minimum information:

- (a) The month and year of manufacture;
- (b) The manufacturer's name on tanks manufactured on and after July 1, 1988, and a means of identifying the facility at which the tank was manufactured; and
- (c) A certificate that it conforms to 49 C.F.R. 393.67.

(7) Fuel lines

- (a) A fuel line not completely enclosed in a protective housing shall not extend more than two inches below the fuel tank or its sump.
- (b) Diesel fuel crossover, return, and withdrawal lines which extend below the bottom of the tank or sump shall be protected against damage from impact.
- (c) Every fuel line shall be:
  - (i) Long enough and flexible enough to accommodate normal

movements of the parts to which it is attached without incurring damage; and

- (ii) Secured against chafing, kinking, or other causes of mechanical damage.

(d) Excess flow valve

When pressure devices are used to force fuel from a fuel tank, a device which prevents the flow of fuel from the fuel tank if the fuel feed line is broken shall be installed in the fuel system.

(8) Liquid fuel tanks

- (a) A diesel fuel tank manufactured before January 1, 1973, shall:

Have each fill pipe fitted with a cap that can be fastened securely over the opening in the fill pipe. (Screw threads or a bayonet-type joint are examples of methods of conforming to the requirements of this paragraph.)

- (b) A gasoline tank, other than a side-mounted gasoline tank shall:

- (i) Have joints closed by arc-, gas-, seam-, or spot-welding, by brazing, by silver soldering, or by techniques which provide heat resistance and mechanical securement at least equal to those specifically named.

Joints shall not be closed solely by crimping or by soldering with a lead-based or other soft solder;

- (ii) The fuel tank body shall have flanges or studs suitable for the installation of all fittings;

- (iii) Have at least four full threads in engagement in each fitting;

- (iv) Not have drains or other bottom fittings extend more than three-fourths of an inch below the lowest part of the fuel tank or sump;

- (v) Have drains or other bottom fittings protected against damage from

impact;

- (vi) If a fuel tank has drains the drain fittings shall permit substantially complete drainage of the tank;
- (vii) Have drains or other bottom fittings shall be installed in a flange or spud designed to accommodate it;
- (viii) Have the fittings through which fuel is withdrawn from a fuel tank located above the normal level of fuel in the tank when the tank is full;
- (ix) Have the fill pipe designed and constructed to minimize the risk of fuel spillage during fueling operations and when the vehicle is involved in a crash;
- (x) Have each fill pipe fitted with a cap that can be fastened securely over the opening in the fill pipe. (Screw threads or a bayonet-type joint are examples of methods of conforming to the requirements of this paragraph);
- (xi) If the fuel tank has a capacity greater than twenty-five gallons, have a venting system which, in the event the tank is subjected to fire, will prevent internal tank pressure from rupturing the tank's body, seams, or bottom opening;
- (xii) Have a non-spill air vent (such as a ball check)

The air vent may be combined with the fill-pipe cap or safety vent, or it may be a separate unit installed on the fuel tank;

- (xiii) If the body of the fuel tank is readily visible when the tank is installed on the vehicle, the tank shall be plainly marked with its liquid capacity and marked with a warning against filling it to more than ninety-five per cent of its liquid capacity;
- (xiv) A liquid fuel tank manufactured on or after January 1, 1973, shall be designed and constructed so that:
  - (a) The tank cannot be filled, in a normal filling operation, with a quantity of fuel that exceeds ninety-five per cent of the

tank's liquid capacity; and

(b) When the tank is filled, normal expansion of the fuel will not cause fuel spillage.

(9) Liquefied petroleum gas systems

A fuel system that uses liquefied petroleum gas as a fuel for the operation of a motor vehicle or for the operation of auxiliary equipment installed on, or used in connection with a bus shall conform as follows:

- (a) Fuel tank shall be marked to indicate that the system conforms to the applicable standards;
- (b) Shall be securely mounted;
- (c) Shall have a properly fitted filler cap; and
- (d) Shall not be leaking.

(10) A private motor carrier of passengers may continue to operate a bus which was not subject to 49 C.F.R. 393.67 or federal motor vehicle safety standard number 301, 49 C.F.R. 571.301 in effect at the time of its manufacture, provided the fuel tank is maintained to the original manufacturer's standards.

(L) Requirements for rear-impact guard(s)

- (1) Every bus manufactured after December 31, 1952 in which the vertical distance between the rear bottom edge of the body (or the chassis assembly if the chassis is the rearmost part of the vehicle) and the ground is greater than thirty inches when the bus is empty, shall be equipped with a rear impact guard(s).
- (2) If required, the rear-impact guard(s) shall be installed and maintained in such a manner that:
  - (a) The vertical distance between the bottom of the guard(s) and the ground does not exceed thirty inches when the bus is empty;
  - (b) The maximum lateral distance between the closest points between guards, if more than one is used, does not exceed twenty-four inches.

(c) The outermost surfaces of the horizontal member of the guard are no more than eighteen inches from each side extremity of the bus; and

(d) The impact guard(s) are no more than twenty-four inches forward of the rear extremity of the bus.

(3) Construction and attachment of rear-impact guard(s).

The rear-impact guard(s) shall be substantially constructed and attached by means of bolts, welding, or other comparable means.

(4) Bus components and structures may be used to satisfy the requirements of paragraph (L)(1) of this rule if the components and structures provide the rear end protection comparable to impact guard(s) conforming to the requirements of paragraph (L)(2) of this rule.

(M) Requirements for window glass, window construction and glazing

(1) Glazing material used in windshields, windows, and doors on a bus manufactured on or after December 25, 1968, shall at a minimum meet the requirements of federal motor vehicle safety standard number 205, 49 C.F.R. 571.205 in effect on the date of manufacture of the bus.

The glazing material shall be marked in accordance with federal motor vehicle safety standard number 205, 49 C.F.R. 571.205, (S6).

(2) Every bus shall be equipped with a windshield.

(a) Every windshield or portion of a multi-piece windshield shall be mounted using the full periphery of the glazing material.

(b) Every windshield shall be free of discoloration or damage except as follows:

(i) Coloring or tinting of windshields and the windows to the immediate right and left of the driver is allowed, provided the parallel luminous transmittance through the colored or tinted glazing is not less than seventy per cent of the light at normal incidence in those portions of the windshield or windows which are marked as having a parallel luminous transmittance of not less than seventy per cent.

- (ii) A strip of sunscreening applied along the top edge of the windshield so long as such material is transparent, is in compliance with federal motor vehicle safety standard number 205, 49 C.F.R. 571.205, or other applicable federal standards and does not extend downward beyond five inches from the top of the windshield.

The transmittance of not less than seventy per cent does not apply to other windows on the bus.

- (c) Antennas, transponders, and similar devices shall not be mounted more than six inches below the upper edge of the windshield.

These devices shall be located outside the area swept by the windshield wipers, and outside the driver's sight lines to the road and highway signs and signals.

- (d) Decals and stickers required under federal or state laws may be placed at the bottom or sides of the windshield provided such decals or stickers do not extend more the four and one-half inches from the bottom of the windshield and are located outside the area swept by the windshield wipers, and outside the driver's sight lines to the road and highway signs or signals.

### (3) Window construction

- (a) A bus manufactured before September 1, 1973, having a seating capacity of more than eight persons shall have, in addition to the area provided by the windshield, adequate means of escape for passengers through windows.

The adequacy of such means of escape shall be determined in accordance with the following standards:

- (i) For each seated passenger space provided, inclusive of the driver that shall be at least sixty-seven square inches of glazing if such glazing is not contained in a push-out window; or
- (ii) At least sixty-seven square inches of free opening resulting from opening of a push-out type window.

- (iii) No area shall be included in this minimum prescribed area unless:

- (a) It will provide an unobstructed opening sufficient to contain an ellipse having a major axis of eighteen inches and a minor axis of thirteen inches; or
  - (b) An opening containing two hundred square inches formed by a rectangle thirteen inches by seventeen and three-fourths inches with corner arcs of six inch radius.
  - (c) The major axis of the ellipse and the long axis of the rectangle shall make an angle of not more than forty-five degrees with the surface on which the unladen bus stands.
  - (d) The area shall be measured either by removal of the glazing if not of the push-out type or of the movable sash if of the push-out type, and it shall be either glazed with laminated safety glass or comply with paragraph (M)(4) of this rule.
  - (e) No less than forty per cent of such prescribed glazing or opening shall be on one side of any bus.
- (b) A bus manufactured on or after September 1, 1973, having a seating capacity of more than ten persons, inclusive of the driver, shall have emergency exits in conformity with federal motor vehicle safety standard number 217, 49 C.F.R. 571.217.
  - (c) A bus manufactured before September 1, 1973 may conform to the requirements of paragraph (M)(3)(b) of this rule in lieu of conforming to paragraph (M)(3)(a) of this rule.

(4) Push-out window requirements

- (a) Except as provided in paragraph (M)(3)(c) of this rule, every glazed opening in a bus manufactured before September 1, 1973, and having a seating capacity of more than eight persons, used to satisfy the requirements of paragraph (M)(1) of this rule, if not glazed with laminated safety glass, shall have a frame or sash so designed, constructed, and maintained that it will yield outwardly to provide the required free opening when subjected to the drop test specified in test 25 of the standard referred to in paragraph (M)(1) of this rule. The height of drop required to open such push-out windows shall not exceed the height of drop required to break the glass in the same window when glazed with the type of laminated glass specified in test 25 of this

standard. The sash for such windows shall be constructed of such material and be of such design and construction as to be continuously capable of complying with the above requirement.

Buses required to meet the requirements of this section may conform to the requirements of paragraph (M)(4)(b) of this rule.

- (b) On a bus manufactured on or after September 1, 1973, and having a seating capacity of more than ten persons, inclusive of the driver, each push-out window shall conform to federal motor vehicle safety standard 217, 49 C.F.R. 571.217.

(5) Window obstructions

Windows, if otherwise capable of complying with paragraph (M)(3) of this rule, shall not be obstructed by bars or other such means located either inside or outside such windows such as would hinder the escape of occupants unless such bars or other such means are so constructed as to provide a clear opening, at least equal to the opening provided by the window to which it is adjacent when subjected to the same test specified in paragraph (M)(4)(a) of this rule. The point of application of such test force shall be such as will be most likely to result in the removal of the obstruction.

(6) Emergency exits

(a) Window markings

- (i) On a bus manufactured before September 1, 1973, each bus push-out window and any other bus escape window glazed with laminated safety glass required in paragraph (M)(3) of this rule, shall be identified as such by clearly legible signs, lettering, or decaling.
- (ii) Such marking shall include appropriate wording to indicate that it is an escape window and also the method to be used for obtaining emergency exit.
- (iii) A bus required to comply with this section may instead comply with paragraph (M)(6)(b) of this rule.
- (iv) A bus manufactured on or after September 1, 1973, shall mark emergency exits required by paragraph (M)(4)(b) of this rule to conform to federal motor vehicle safety standard number 217, 49

C.F.R. 571.217.

(b) Door markings

Each emergency door shall have such door clearly marked in letters at least one inch in height with the words:

(i) Emergency door; or

(ii) Emergency exit.

(N) Requirements for windshield wipers and washing systems

- (1) Every bus shall be equipped with at least two automatically-operating windshield wiper blades, one on each side of the centerline of the windshield, and a windshield washing system for cleaning rain, snow, or other moisture from the windshield.

Windshield wiper blades shall be in such condition as to provide clear vision for the driver, unless one such blade be so arranged as to clean an area of the windshield extending to within one inch of the limit of vision through the windshield at each side.

- (2) Every bus manufactured after June 30, 1953, which depends upon vacuum to operate the windshield wipers, shall be so constructed that the operation of the wipers will not be materially impaired by change in the intake manifold pressure.

(O) Requirements for heaters

- (1) Every heater on a bus shall be capable, at all times, of providing a reasonable amount of heat and comply with the requirements as set forth in paragraphs (O)(2) to (O)(9) of this rule.

The installation and use of the following types of heaters is prohibited:

(a) Exhaust heaters

Any type of exhaust heater in which the engine exhaust gases are conducted into or through any space occupied by persons or any heater which conducts engine compartment air into any such space;

(b) Unenclosed flame heaters

Any type of heater employing a flame which is not fully enclosed;

(c) Heaters permitting fuel leakage

Any type of heater from the burner of which there could be spillage or leakage of fuel upon the tilting or overturning of the vehicle in which it is mounted;

(d) Heaters permitting air contamination

(i) Any heater taking air, heated or to be heated, from the engine compartment or from direct contact with any portion of the exhaust system;

(ii) Any heater taking air in ducts from the outside atmosphere to be conveyed through the engine compartment unless said ducts are so constructed and installed as to prevent contamination of the air so conveyed by exhaust or engine compartment gases;

(e) Solid fuel heaters

Any stove or other heater employing solid fuel;

(f) Portable heaters

Portable heaters shall not be used in any space normally occupied by persons;

(2) Heater specifications

Every heater shall be so located or protected as to prevent contact therewith by occupants, unless the surface temperature of the protecting grilles or of any exposed portions of the heaters, inclusive of exhaust stacks, pipes, or conduits shall be lower than would cause contact burns.

(a) Adequate protection shall be afforded against igniting parts of the vehicle or burning occupants by direct radiation.

(b) Effective guards shall be provided for the protection of passengers or occupants against injury by fans, belts, or any other moving part.

- (c) Every heater and every heater enclosure shall be securely fastened to the vehicle in a substantial manner so as to provide against relative motion within the vehicle during normal usage or in the event the vehicle overturns.
- (d) Every heater shall be so designed, constructed, and mounted as to minimize the likelihood of disassembly of any of its parts, including exhaust stacks, pipes, or conduits upon overturn of the vehicle in or on which it is mounted.
- (e) When either in normal operation or in the event of overturn, there is or is likely to be relative motion between the fuel tank for a heater and the heater, or between either of such units and the fuel lines between them, a suitable means shall be provided at the point of greatest relative motion so as to allow this motion without causing failure of the fuel lines.
- (f) For every bus designed to transport more than fifteen passengers, including the driver, means shall be provided to prevent unauthorized persons from tampering with the operating controls. Such means may include:
  - (i) Remote control by the driver;
  - (ii) Installation of controls at inaccessible places
  - (iii) Control of adjustments by key or keys;
  - (iv) Enclosure of controls in a locked space;
  - (v) Locking of controls; or
  - (vi) Other means of accomplishing this purpose.
- (3) Hoses for all hot water and steam heater systems shall be specifically designed and constructed for that purpose.
- (4) Every heater employing any electrical apparatus shall be equipped with electrical conductors, switches, connectors, and other electrical parts of ample current-carrying capacity to provide against overheating.

- (5) Every electric motor employed in any heater shall be of adequate size and so located that it will not be overheated.
- (6) Electrical circuits shall be provided with fuses and/or circuit breakers to provide against electrical overloading.
- (7) All electrical conductors employed in or leading to any heater shall be secured against dangling, chafing, and rubbing and shall have suitable protection against any other condition likely to produce short or open circuits.
- (8) If a separate storage battery is located within the personnel or cargo space, such battery shall be securely mounted and equipped with non-spill filler caps.
- (9) Every heater employing the combustion of oil, gas, liquefied petroleum gas, or any other combustible material shall be provided with substantial means of conducting the products of combustion to the outside of the vehicle.
  - (a) The exhaust pipe, stack, or conduit if required shall:
    - (i) Be sufficiently substantial and so secured;
    - (ii) Shall not leak or discharge products of combustion within the vehicle; and
    - (iii) Shall be so insulated as to make unlikely the burning or charring of parts of the vehicle by radiation or by direct contact.
  - (b) The place of discharge to the atmosphere and the means of discharge of such products shall be such as to minimize the likelihood of their re-entry into the vehicle under all operating conditions.
  - (c) Combustion chamber design, construction and installation:
    - (i) Combustion chambers shall be designed, constructed and installed to prohibit against the leakage of products of combustion into the air to be heated and circulated.
    - (ii) Material used in combustion chambers shall be such as to provide against leakage because of corrosion, oxidation or other deterioration.

- (iii) Joints between combustion chambers and the air chambers with which they are in thermal and mechanical contact shall:
  - (a) Be so designed and constructed as to prevent leakage between the chambers; and
  - (b) The materials used in such joints shall have melting points substantially higher than the maximum temperatures likely to be attained at the points of jointure.
- (iv) Every fuel tank for heaters of the combustion type shall be located outside of and lower than the passenger space.
  - (a) When necessary, suitable protection shall be afforded by shielding or other means against the puncturing of any such tank or its connection by flying stones or other objects.
  - (b) Gravity or siphon feed is prohibited for heaters using liquid fuels.
  - (c) Heaters using liquid fuels shall be equipped with automatic means for shutting off the fuel or for reducing such flow of fuel to the smallest practicable magnitude, in the event of overturn of the vehicle.
  - (v) Heaters using liquefied petroleum gas as fuel shall have the fuel line equipped with automatic means at the source of supply for shutting off the fuel in the event of separation, breakage, or disconnection of any of the fuel lines between the supply source and the heater.
- (d) Automatic means, or manual means if the control is readily accessible to the driver without moving from the driver's seat, shall be provided to shut off the fuel and electrical supply in case of failure of the heater to function for any reason, or in case the heater should function improperly or overheat.

Heaters subject to this section and not provided with automatic controls shall be provided with "tell-tale" means to indicate to the driver that the heater is functioning properly.

(e) Every combustion-type heater manufactured after December 31, 1952, shall be clearly marked with:

(i) Information to indicate the type of service for which such heater is designed; and

(ii) A certification by the manufacturer that the heater meets the applicable requirements for such use.

(P) Requirements for defrosting devices

Every bus shall be equipped with a means for preventing and/or removing the accumulation of ice, snow, frost or condensation that could obstruct the driver's view through the windshield.

(Q) Requirements for rear-vision mirrors

(1) Every bus shall be equipped with two rear-vision mirrors, one at each side, firmly attached to the outside of the bus, free of cracks or discoloration and so located as to reflect to the driver a view of the highway to the rear, along both sides of the bus.

All rear-vision mirrors must be easily adjustable and must be capable of holding, during normal operations, any adjustment.

(2) All rear-vision mirrors and their replacements shall meet, as a minimum, the requirements of federal motor vehicle safety standard number 111, 49 C.F.R. 571.111.

Mirrors installed on a bus manufactured prior to January 1, 1981, may be continued in service, provided that if the mirrors are replaced they shall be replaced with mirrors meeting, as a minimum, the requirements of federal motor vehicle safety standard number 111, 49 C.F.R. 571.111.

(R) Requirements for horns

Every bus shall be equipped with a horn and actuating elements which shall be in such condition as to give an adequate and reliable warning signal.

(S) Requirements for speedometers

(1) Every bus shall be equipped with a speedometer indicating vehicle speed in

miles per hour.

- (2) Every speedometer shall be accurate to within plus or minus five miles per hour at a speed of fifty miles per hour.

(T) Requirements for floors

All flooring in all buses shall:

- (1) Be substantially constructed;
- (2) Be free of unnecessary holes and openings;
- (3) Be maintained so as to minimize the entrance of fumes, exhaust gases, or fire; and
- (4) Not be permeated with oil or other substances likely to cause injury to persons using the floor as a traction surface.

(U) Requirements for driveshaft protection

Any driveshaft extending lengthways under the floor of the passenger compartment shall be protected by means of at least one guard or bracket at that end of the driveshaft which is provided with a sliding connection (spline or other such device) to prevent the whipping of the shaft in the event of failure of the connection or any of its component parts.

A driveshaft contained within a torque tube shall not require any such protective device.

(V) Requirements for standee line or bar

- (1) Except as provided below, every bus which is designed and constructed with grab handles, straps, or bars so as to allow standees, shall be plainly marked with a line of contrasting color at least two inches wide or equipped with some other means so as to indicate to any person that he/she is prohibited from occupying a space forward of a perpendicular plane drawn through the rear of the driver's seat perpendicular to the longitudinal axis of the bus.
- (2) Every bus shall have clearly posted at or near the front, a sign with letters at least one-half inch high stating that it is a violation of the federal motor

carrier safety regulations for a bus to be operated with persons occupying the prohibited area.

(3) Exception

(a) The requirements of paragraph (V) of this rule shall not apply to any level of the bus other than that level in which the driver is located; nor

(b) Shall this paragraph prohibit any seated person from occupying permanent seats located in the prohibited area provided such seats are so located that person sitting therein will not interfere with the driver's safe operation of the bus.

(W) Requirements for seats

(1) Aisle seats are prohibited.

No bus shall be equipped with aisle seats unless such seats are so designed and installed as to automatically fold and leave a clear aisle when they are unoccupied.

(2) Every seat shall be securely fastened to the vehicle.

Exception: paragraph (W)(2) of this rule shall not apply to a custom-built bus with flooring and/or seating so designed and installed as to prevent self-movement of the seating during normal operations of the bus.

(3) Adjustable seats shall be movable throughout the entire range of their adjustment and shall lock in the desired position.

(4) Seat cushions or backrests shall be present, in good condition, and securely attached.

(5) If seats were originally equipped with headrests, the headrests shall not be missing, damaged or not securely attached.

(X) Requirements for the driver's seat

(1) Driver's seat shall be securely fastened to the vehicle.

(2) If adjustable, the seat shall be movable throughout the entire range of its adjustment and shall lock in the desired position.

(3) Seat belt assemblies

(a) Buses manufactured on or after January 1, 1965, and before July 1, 1971, shall be equipped with:

(i) A lap belt or a lap and torso belt seat belt assembly that conforms to federal motor vehicle safety standard number 209, 49 C.F.R. 571.209 installed at the driver's seat; and

(ii) Seat belt anchorages that conform to the location and geometric requirements of federal motor vehicle safety standard number 210, 49 C.F.R. 571.210.

(b) Buses manufactured on or after July 1, 1971 shall conform to the requirements of:

(i) Federal motor vehicle safety standard number 208, 49 C.F.R. 571.208 (relating to seat belt assemblies); and

(ii) Federal motor vehicle safety standard number 210, 49 C.F.R. 571.210 (relating to installation of seat belt anchorages).

(c) Buses manufactured on or after January 1, 1972 shall conform to the requirements of federal motor vehicle safety standard number 207, 49 C.F.R. 571.207 (relating to seating systems).

(Y) Requirements for television receivers

(1) Any bus equipped with a television viewer(s), screen(s) or other means of visually receiving a television broadcast or a video system capable of playing visual recordings shall:

(a) Have the viewer(s) or screen(s) located in the bus at a point to the rear of the back of the driver's seat if such viewer(s) or screen(s) are in the same compartment as the driver;

(b) Shall be so located as not to be visible to the driver, while he/she is

driving the bus.

- (2) This section does not apply to vehicular closed-circuit video systems designed and used for the safe operation of the bus.

(Z) Requirements for emergency equipment

Every bus shall be equipped as follows:

(1) Fire extinguishers

Every bus shall have at least one fire extinguisher that:

- (a) Is properly filled;
- (b) Is located so it is readily accessible inside the driver's and/or the passengers' compartment;
- (c) Is securely mounted to the vehicle;
- (d) Is designed, constructed, and maintained to permit visual determination of whether it is fully charged;
- (e) Has an extinguishing agent that does not need protection from freezing;
- (f) Does not use a vaporizing liquid that gives off vapors more toxic than substances shown as having a toxicity rating of five or six in the underwriters' laboratories "classification of comparative life hazard of gases and vapors"; and
- (g) Has an underwriters' laboratories rating of 5 B:C except two fire extinguishers with an underwriters' laboratories rating of a least 4 B:C may replace on 5 B:C rated fire extinguisher.

(2) Reflective warning devices

- (a) Every bus shall be equipped with at least three bi-directional emergency reflective triangles that conform to the requirements of federal motor vehicle safety standard number 125, 49 C.F.R. 571.125.

(b) The reflective warning devices required by this section shall:

- (i) Be maintained in good condition;
- (ii) Not have broken or missing pieces; and
- (iii) Be capable of being properly set up and remain standing under normal conditions.

(3) Spare fuses

Every bus shall have at least one spare fuse or other overload protective device, if the devices used are not of a reset type, for each kind and size used.

(AA) Marking of buses

Buses required to comply with the rules and regulations of the federal motor carrier administration or the public utilities commission of Ohio shall display their company name on both sides of the bus:

- (1) In addition to the company name, for-hire intrastate motor carriers of passengers shall display, on both sides of the vehicle, the company's unique identification number issued by the public utilities commission of Ohio preceded by the letters, "PUCO," or the identification number issued by the federal motor carrier safety administration preceded by the letters, "USDOT";
- (2) In addition to the company name, interstate motor carriers of passengers shall display, on both sides of the bus, the motor carrier identification number issued by the federal motor carrier safety administration, preceded by the letters "USDOT."

(BB) Insurance requirements

- (1) Every bus, as defined in section 4513.50 of the Revised Code, shall contain evidence of proper liability insurance coverage as required in Chapter 4901:2-13 of the Administrative Code.

(CC) Other

- (1) All other vehicle components not otherwise specifically mentioned in this rule shall:

- (a) Be in proper working condition; and
  - (b) Not be loose, broken, missing or otherwise defective.
- (2) Any bus that previously was registered as a school bus that is used or is to be used exclusively for purposes other than the transportation of children:
- (a) Shall be painted a color different from that prescribed for school buses by section 4511.77 of the Revised Code and;
  - (b) Shall have:
    - (i) The words, "STOP," "STATE LAW," and "SCHOOL BUS," removed or obliterated;
    - (ii) The automatically extending stop warning sign, required by section 4511.75 of the Revised Code, removed; and
    - (iii) The flashing red amber lights, required by section 4511.771 of the Revised Code, disabled and covered, or removed.