COLORADO DEPARTMENT OF EDUCATION

Transportation Unit

Minimum Standards Governing School Transportation Vehicles

1 CCR 301-25 2014 Proposed Revisions

March 2014

COLORADO DEPARTMENT *of* EDUCATION cde

Agenda

- Review each section and highlight any additions and/or deletions in the language compared to current minimum standards. Additions to current rules will be in blue, deletions to current rules will be in ~~red~~, and TAC changes to proposed rules will be in purple.
- Answer Questions and have Open Discussion.

General Changes

- The sections on the bus chassis and the bus body have been consolidated. As a result, numbering throughout the rules have changed significantly. The rule numbers in the following section represent the new numbers for the proposed ruled, unless specified otherwise.
- All proposed rule changes are highlighted in this presentation, except in the case of minor wording changes which clearly did not substantively alter the rule.
- In November 2013, the Transportation Advisory Committee reviewed and approved the proposed rules. This document also highlights decisions by TAC.

Major Regulatory Changes

- 1.00 – Exemptions
- 4.04 – Small Vehicle Acquisition
- 11.01/11.02/11.03 – Battery
- 14.01/32.03 – Maximum Design Capacity
- 16.07 – Kentucky Pole Test
- 23.05 – Body Fluid Clean-up Kit
- 23.06 – Emergency Equipment Securely Mounted
- 26.05 – Allow Yellow Nosing on Step Tread
- 32.06 – Stop and Flashing Warning Signal
- 32.08 – Advertising
- 37.05 – Front Turn Signal

SCHOOL BUS MINIMUM STANDARDS

Statement of Basis and Purpose

2251-R-1.00

ADDITION:

The Commissioner, or designee, may provide exemptions to these Minimum Standards Governing School Transportation Vehicles to the extent the Commissioner finds an exemption to be appropriate.

References

2251-R-2.00

DELETION:

SAE, UL, FED. SPEC., NBS, SAHS, NFPA

RETAINED:

FMVSS –References to FMVSS throughout the rules were proposed to be deleted, but many were retained by TAC.

These will only be highlighted below if other changes were made to a rule.

2251-R-3.00 No Change

Responsibility of Suppliers

2251-R-3.00

No Change

Effective Date of Specification

2251-R-4.00

RETAINED:

4.03 Only used school transportation vehicles that were manufactured per the date listed on the certification plate, within the previous 20 years, may be purchased, leased, contracted, or otherwise obtained for the purpose of transporting Colorado students. The buses must meet Colorado minimum standards that were in effect at the time of manufacture.

This rule was proposed to change 20 years to 15 years, but was the existing language was retained by TAC.

Effective Date of Specification
(continued)

Current Rule <u>DELETION:</u>

~~**4.04 Only those small vehicles manufactured after September 1, 1994, may be purchased, leased, contracted, or otherwise obtained for the purpose of transporting Colorado students.**~~

School Transportation Vehicle Definitions

2251-R-5.00

5.02 Definitions of Type A, B, C, and D were updated to coincide with national definitions. Several citations throughout the rules for Type A buses have been limited to those under 14,500 GWVR.

5.03 Small Vehicle shall be a motor vehicle ~~with motive power~~, which does not meet the requirements of a Type A, B, C, or D school bus. ~~These~~ Designated for general purpose use, small vehicles shall not transport more than the manufacturer's designated capacity. A small vehicle shall meet or exceed section 23.05 ~~59.05~~ of these rules. ~~These vehicles may be used to carry students on route or activity trips.~~

School Transportation Vehicle Definitions (continued)

~~The preceding definition is not intended to include private motor vehicles used exclusively to carry members of the owner's household.~~

5.04 Multifunction bus shall be a motor vehicle ~~with motive power~~, built to federal multifunctional school activity bus standards, designed for transporting ~~carrying~~ students. ~~These buses may be used to carry students on activity trips. Multifunction buses of 15 or less capacity may also be used on route.~~

ADDITION:

5.04(a)(6) White retro-reflective material, at least 1 ¾" in width, may be used in place of NSBY reflective material.

Testing and Certification

2251-R-6.00

Proposed Rule REJECTED:

~~6.02(a) The district/service provider shall report on a CDE approved form information to CDE Transportation Unit concerning all used vehicles purchased for transporting students within 10 days of the completion of the first annual inspection of each vehicle.~~

This proposed rule was rejected by TAC.

6.05 All school transportation vehicles must meet and ~~shall~~ continue to meet all applicable FMVSS. ~~the Colorado Minimum Standards in effect at the time of manufacture.~~

This proposed rule was reworded after TAC decision to retain FMVSS references.

Bus Delivery Requirements

2251-R-7.00

No Change

Air Cleaner

2251-R-8.00

Current Rule DELETION:

~~12.01 The engine intake air cleaner shall be furnished and properly installed by the chassis manufacturer to meet engine specifications.~~

Aisle

2251-R-9.00

9.01 Minimum aisle clearance between seats shall be 12 inches at seat level and 15 inches at top of seats. ~~This includes the aisles to all emergency doors.~~

Current Rule DELETION:

~~50.02 The aisle to any side emergency exit door shall be unobstructed at all times by any type of barrier, seat, wheelchair or tiedown, 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 exit door. The track of a track seating system shall be exempt from this requirement.~~

Axles

2251-R-10.00

Current Rule DELETION:

~~13.01 The front axle and rear differential, including suspension assemblies, shall have a gross axle weight rating at ground, at least equal to that portion of the load as would be imposed by the chassis manufacturer's maximum gross vehicle weight rating.~~

Battery

2251-R-11.00

11.01 On Type B,C and D a ~~A~~ drawer-type pullout tray to facilitate servicing or removal of battery(ies)not used for the motive propulsion of the bus shall be provided. The battery(ies) shall be enclosed by a vented compartment constructed of mill-applied zinc steel provided with drain ports, hold down carrier mounted so as to avoid blocking filler ports, and a latching device to prevent accidental opening. Under-coating shall be provided and applied to battery box. Battery tray is to be equipped with a safety device to keep tray from sliding completely out ~~to prevent battery from being dropped~~.

Battery
(continued)

11.02 On Type A buses equipped with more than one battery, all batteries should be positioned in one location. ~~two batteries, both shall be mounted on a tray.~~

This proposed rule language was changed as shown following TAC to provide clarity to proposed change.

11.03 Batteries should be equipped with sufficient battery cable to allow the drawer-type pull out tray to fully extend.

-Proposed Rule REJECTED:

~~11.04 An emergency electrical shutoff shall be located in the battery compartment with the location labeled on the outside of the compartment door.~~

This proposed rule was rejected by TAC.

Brakes

2251-R-12.00

Current Rules <u>DELETION:</u>

~~14.01 All braking systems shall comply with FMVSS.~~

~~14.01 (a) The braking system capacity shall be comenserate with the braking requirements of the GVWR.~~

~~14.03 (b) Three reservoirs or chambers (wet, primary, secondary) with a total capacity, which is equal to or greater than 12 times the total volume of all brake actuators at full travel.~~

~~14.04 Anti-lock brake system shall control all four wheel positions individually.~~

Bumpers

2251-R-13.00 Current Rules DELETION/ADDITION:

~~15.01 Front bumper on all Type A, B and C school buses shall be furnished by the chassis manufacturer.~~

~~15.02 Front bumper of Type D school buses shall be furnished by the body manufacturer.~~

15.03 Front bumper shall be at least 3/16 inch thick of pressed steel channel, one piece construction ~~or optional 3-piece breakaway construction and~~ with a minimum of eight inches wide (high) except Type A buses under 14,500 GWVR.

15.04 Front bumper shall be of extended design to offer ~~maximum~~ protection of fender lines without permitting snagging or hooking.

Capacity

2251-R-14.00

ADDITION:

14.01 The manufacturer's maximum design capacity must be listed on the certification plate.

Current Rule DELETION:

~~53.01 Capacities and seat spacing shall conform to and be in full compliance with applicable FMVSS.~~

Color

2251-R-15.00

15.02 Retro-Reflective material shall be installed on the bus meeting NCST~~. Material shall be of reflective NSBY~~ and conform~~ing~~ to the requirements of FMVSS 571.131.~~ Table 1. Retro-Reflective materials and markings shall include the following:~~

15.02 (a) Rear of bus body: strips of ~~at least 1.75~~ between 1 and 2 inch Retro-Reflective NSBY material shall be applied horizontally above the rear windows and above the rear bumper extending from the rear emergency exit perimeter marking outward to the left and right rear corners of the bus with vertical strips applied at the corners connecting these horizontal strips.

Construction

2251-R-16.00

ADDITION:

16.07 The bus body shall meet the test standards of the Kentucky Pole test.

Cooling System

2251-R-17.00

17.01 Permanent ethylene-glycol base or environmentally safe equivalent anti-freeze shall be provided ~~by chassis manufacturer~~ to protect the cooling system to -30 degrees Fahrenheit (F) when tested at normal engine temperature ~~and shall not be diluted by body company~~.

Current Rule DELETION:

~~17.02 Cooling system shall be equipped with a coolant recovery system.~~

Defrosters – Doors –Drive Shaft

2251-R-18.00

Current Rule DELETION:

~~56.03 The defrosting system shall conform to SAE Standards.~~

2251-R-19.00

No Change

2251-R-20.00

No Change

Electrical System

2251-R-21.00

Current Rules <u>DELETION:</u>

~~19.01 The electrical system {including battery(ies) and alternator} shall be commensurate with all electrical needs of the bus, including accessories.~~

~~19.02 Battery and all cable required to complete circuits without splicing, even when drawer is extended for battery servicing, shall be provided by the chassis manufacturer and mounted for delivery to body plant.~~

Emergency Exits

2251-R-22.00

22.03 (a) Emergency door(s) shall be equipped with a 3-point latch mechanism. The inside door handle shall be designed with a guard for protection against accidental release. ~~Emergency door latch shall be equipped with suitable electric plunger-type switch connected with buzzer located in driver's compartment. Switch shall be enclosed in metal case and wires leading from switch shall be concealed in bus body. Switch shall be so installed that plunger contacts farthest edge of slide bar in such manner that any movement of slide bar will immediately close circuit on switch and activate buzzer.~~

Emergency Exits
(continued)

Current Rules DELETION:

~~**58.02 (e) Operation instructions for opening of door shall be lettered or decaled on the inside of the emergency door.**~~

~~**58.02 (f) Emergency door shall bear words either "EMERGENCY EXIT" or "EMERGENCY DOOR" both inside and outside clearly visible in letters at least 2 inches high. Words shall be placed directly above the door or on the upper portion of the door.**~~

~~**58.02 (g) On all buses except rear engine transit school buses (Type D), and buses with a raised rear storage compartment, an emergency door shall be located in the rear of the bus body and centered with respect to the body. Door shall have a minimum horizontal opening of 24 inches and minimum vertical opening of 48 inches measured from floor level. Rear emergency door shall be hinged on right side and shall open outward.**~~

Emergency Exits
(continued)

Current Rules DELETION:

~~**58.02 (h) Rear emergency door shall contain upper and lower glass panels that comply with FMVSS 205. Glass in emergency door shall provide maximum area of visibility for safe operation of bus.**~~

~~**58.02 (j) Side emergency door: If engine or storage compartment is so located as to make it impossible to place door in center of rear end, the emergency door shall be located in the rear half of the left side of the bus body. The door shall not be located to reduce size of opening by wheel well. The door shall be hinged on the front side.**~~

~~**58.03 Rear emergency window: If engine or storage compartment is so located as to require a side emergency door, an emergency window shall be installed in the rear of the bus.**~~

~~**58.03 (a) The emergency window glass shall meet FMVSS 205. Glass shall be tempered unless specified laminated by the purchaser.**~~

Emergency Exits
(continued)

Current Rules DELETION:

~~**58.03 (b) The rear emergency window shall be hinged from top and provided with a hold open control to insure against accidental closing during an emergency.**~~

~~**58.03 (c) Emergency window in rear shall be equipped with latch on the inside and with a handle of hitch proof design that will permit opening from the outside.**~~

~~**58.04 All designated emergency windows shall bear words "EMERGENCY EXIT" in letters at least 2 inches high both inside and outside the window. Lettering shall be placed so as to be clearly visible both inside the bus and outside directly above, below, or on the window.**~~

~~**58.04 (a) All designated emergency windows, when not fully latched, shall activate a signal audible to the driver.**~~

Emergency Exits
(continued)

Proposed Rules REJECTED:

~~22.02 (e) Opening the rear emergency door shall automatically activate the backup lamps.~~

~~22.02 (f) Side emergency door: a minimum 24" wide staging area shall be provided Flip seats will not be accepted in the side emergency door staging area.~~

These proposed rules were rejected by TAC.

Emergency Equipment

2251-R-23.00

23.01 The bus shall be equipped with at least one pressurized 5-pound dry-chemical fire extinguisher ~~of a type approved by UL~~, with a total rating of not less than 2A10BC. The operating mechanism shall be sealed with a type of seal that will not interfere with use of the fire extinguisher.

23.03 Emergency Reflectors ~~(Section 42-4-230, C.R.S.)~~: All buses shall carry three (3) emergency triangle reflectors in compliance with 42-4-230, C.R.S. and FMVSS 125, contained in a securely mounted case easily accessible to the driver ~~or a location plainly indicated by appropriate markings~~.

Emergency Equipment
(continued)

23.05(c) One securely mounted 2 1/2 pound dry chemical fire extinguisher ~~of a type approved by UL,~~ with a minimum rating of 1A10BC,

23.05(d) One durable, full hand-held webbing cutter should be provided and mounted with easy accessibility to the driver,

23.05(e) One Basic Body Fluid Clean-up kit as found in 23.04.

23.06 Emergency equipment should be securely mounted in a container, in the trunk, or back of the small vehicle. The location of the emergency equipment should be provided on a label visible to the driver.

Exhaust System

2251-R-24.00

Current Rules DELETION/CHANGES:

~~20.01 Exhaust pipe, muffler, and tail pipe shall not pass through the passenger portion of the bus body.~~

~~20.02 Exhaust system must meet federal standards.~~

20.04 Exhaust system shall be insulated in a manner to prevent any damage to any fuel system component. ~~from fuel tank and fuel tank connections by securely attached metal shield at any point where it is 12 inches or less from the fuel tank or fuel tank connections, except diesel fuel.~~

Exhaust System (continued) - Fenders

Current Rule <u>RETAINED:</u>

20.05 There shall be a switch inaccessible to the driver to manually start the diesel particulate filter regeneration process.

This rule was proposed to change "inaccessible" to "accessible", but the existing language was retained by TAC.

2251-R-25.00

No Change

Floor Coverings – Frame

2251-R-26.00

26.05 The entrance step treads, including the edge at floor level, shall be of the same quality as the aisle material. Step treads shall have an integral white or yellow nosing of 1-1/2 inch or more or use diagonal stripes. Treads shall be permanently bonded to the metal steps and sealed to prevent water from getting underneath the step tread.

2251-R-27.00

No Change

Fuel Fill Cap Cover – Fuel System

2251-R-28.00

No Change

2251-R-29.00

29.02 Fuel filter with replaceable element shall be installed between fuel tank and engine [except when not needed by an alternative powered bus.]

Heating

2251-R-30.00

30.01(a) Lift equipped buses may place the rear heater under the last row of seats or wall mount. The front heater may be wall mounted.

Proposed Rule REJECTED:

~~30.01(b) One of the two heaters shall be located aft of the front barrier on the bus.~~

This proposed rule was rejected by TAC.

Heating
(continued)

Current Rules <u>DELETION:</u>

~~**24.01 Engine design shall provide inlet and outlet holes in accessible locations for attachment of bus heating system water lines. Heater outlets shall be of sufficient size to accommodate circulation of all coolant with no reduction of coolant lines.**~~

~~**62.03 Multi-speed switches shall operate all heater fans independently.**~~

Horn

2251-R-31.00

Current Rule <u>DELETION:</u>

~~25.01 Bus shall be equipped with horn(s) of standard make, each horn capable of producing complex sound in band of audio frequencies from 250 to 2000 cycles per second and having total sound level of 110 decibels as rated by horn manufacturer.~~

Identification

2251-R-32.00

32.01 Body shall bear words "SCHOOL BUS" in black letters at least 8 inches high on both front and rear of body. Lettering shall be placed ~~as high as possible~~ without impairment of its visibility. Lettering shall have a retro-reflective NSBY material background (see 15.02B) ~~conform to SAHS.~~

32.02 School buses shall bear name of school district/service provider on each side of the bus ~~in the beltline~~. The lettering must be black, standard unshaded letters, 5 inches in height. If there is insufficient space due to the length of the name of the school district, terms such as community, consolidated, and district may be abbreviated.

Identification
(continued)

32.03 The manufacturer's rated maximum designed ~~pupil~~ seating capacity shall be printed to the left of the entrance door on the lower skirt in 2 inch characters. The word capacity may be abbreviated. (Example: Cap. 48)

32.06 "STOP" shall be printed on the rear of the bus in letters at least 8 inches high. "ON FLASHNG RED" shall be printed below "STOP," in letters at least ~~5~~ 4 ½ inches high. Letters shall be placed in area(s) visible to the approaching motorist or a LED message panel giving both a caution and a stop warning in sequence to the alternately flashing warning signal lamps may be used instead of the above lettering.

Identification
(continued)

32.08 (a)(1) The location and securement of the advertising shall have prior CDE written approval.

32.08(a)(5) Advertising signs shall not interfere with retro-reflective tape on the side of the bus.

Inside Height

2251-R-33.00

33.01 Inside body height shall be 72 inches or more, measured metal to metal at any point on longitudinal center line from front vertical bow to rear vertical bow. Type A school buses of 14,500 GVWR or less, shall have 62 inches or more inside height, measured metal to metal. Neither measurement shall include air conditioning units.

Instruments and Instrument Panel

2251-R-34.00

Current Rules DELETION:

~~26.01 Chassis shall be equipped with the following non-glare instruments and gauges. Lights in lieu of gauges are not acceptable.~~

~~26.01 (a) Standard speedometer with seven digit odometer,~~

~~26.01 (b) Voltmeter with a graduated scale to 16 volts.~~

~~26.01 (c) Oil pressure gauge.~~

~~26.01 (d) Water temperature gauge.~~

~~26.01 (e) Fuel gauge.~~

~~26.01 (f) Upper-beam headlamp indicator.~~

~~26.01 (g) Tachometer. The tachometer is not required for Type A and B school buses.~~

Instruments and Instrument Panel
(continued)

Current Rules DELETION continued:

- ~~26.01 (h) Left and right turn-signal indicator.~~
- ~~26.01 (i) Chassis with air brake systems shall be equipped with a visible gauge and audible low-pressure indicator to warn driver if air pressure in brake system falls below 60 PSI.~~
- ~~26.01 (j) Chassis with air brake systems shall have a labeled visual indicator of park brake application visible to driver.~~
- ~~26.01 (k) Chassis with a hydraulic assist-brake system shall be equipped with warning signals, readily audible and visible to the driver, that will provide continuous warning in the event of a loss of fluid flow from primary source or loss of electric source powering the back-up system.~~

Insulation – Interior

2251-R-35.00

No Change

2251-R-36.00

Current Rule DELETION :

~~27.01 All lamps and their installation shall conform to current standards and recommended practices of applicable SAE and FMVSS standards.~~

Lamps and Signals

2251-R-37

37.01 ~~All lamps, signals, reflectors and their installation shall conform to standards and recommendations of SAE and meet FMVSS. There shall be n~~ No lettering, symbols or arrows, except manufacturer's markings, shall be on any lens.

37.02 Tail and stop (brake) lamps:

37.02(a) Bus shall be equipped with four combination red stop/tail lamps. Two combination stop lamps shall have a lens diameter of at least 7 inches or 38.48 square inches~~, and shall have light intensity at least equal to Class A, Type I turn-signal units as established by SAE~~. Two combination tail lamps shall have a lens diameter of at least 4 inches or 12.50 square inches.

Lamps and Signals
(continued)

Current Rule DELETION:

~~67.03 License plate lamp: Bus shall be equipped with rear license plate illuminator. This lamp may be combined with one of the tail lamps.~~

37.05 Turn signal lamps:

37.05(a) The bus shall be equipped with two amber turn signals in front and two amber turn signals in the rear. ~~Both front and~~ Rear signals shall be at least 7 inches or a total of 38.48 square inches in diameter~~ and meet the specifications of SAE~~. Type A and Type C buses may be equipped with chassis manufacturer's front turn signal lamps.

37.05(b) Type D buses will still be required to be equipped with two amber turn signals in front with a minimum diameter of 7 inches or 38.48 square inches.

Lamps and Signals
(continued)

Current Rules DELETION:

~~**67.07 (a) All school buses shall be equipped with four red warning signal lamps designed to conform to SAE standards, and four amber warning signal lamps designed to conform to FMVSS.**~~

~~**67.07 (b) Right and left lamps shall flash alternately. Each lamp shall flash not less than 60 nor more than 120 flashes per minute.**~~

~~**67.07 (c) Flashing warning lamps are to have a signal area of not less than 7 inch (38.48 square inches) diameter per lens. The lamps shall give a distinct warning illumination of entire lens area when lighted for a distance of 500 feet when the bus is in bright sunlight.**~~

Lamps and Signals
(continued)

37.06 (a) The amber flashing warning signal lamps shall be energized manually by a switch mounted on the driver control panel. ~~The red flashing warning signal lamps shall be energized as set forth by FMVSS. The lamp units and switch systems shall also comply with the above standard.~~ The flashing warning signal lamp system shall be a sequential mode type.

Current Rule DELETION:

~~67.07 (f) The vision of the front signal lamps to the front and rear signal lamps to the rear shall be unobstructed by any part of the vehicle.~~

Lamps and Signals
(continued)

37.08 A white flashing strobe light ~~meeting SAE standards~~ may be installed on the roof of a school bus. Amber lens may be used upon approval of local traffic regulatory authority. Light shall have a single clear lens emitting light 360 degrees around its vertical axis and may not extend above the roof more than 8 inches. A manual switch and a pilot light must be included to indicate when light is in operation. Lamp must not be capable of activating emergency traffic control light switches.

Mirrors

2251-R-38.00

Current Rules DELETION:

~~68.01 Interior mirror: Interior mirror shall be either laminated glass or glass bonded to a backing that retains the glass in the event of breakage. Mirror shall have rounded corners and protected edges. Type A bus shall have a minimum of 6" x 16" mirror and Type B, C, and D buses shall have a minimum of a 6" x 30" mirror.~~

~~68.02 Exterior mirrors: Each school bus shall be equipped with a system of exterior mirrors including crossover mirrors in compliance with FMVSS 111. This system of mirrors shall be rigidly braced so as to reduce vibration.~~

Mounting, Body and Chassis - Overall Length

2251-R-39.00

Current Rules DELETION:

~~69.01 Chassis frame shall support rear body cross member. Bus body shall be attached to chassis frame at each main floor sill, except where chassis components interfere, in such manner as to prevent shifting or separation of the body from the chassis under severe operating conditions.~~

2251-R-40.00

No Change

Overall Width – Power of Grade Ability

2251-R-41.00

No Change

2251-R-42.00

Current Rules DELETION :

~~29.01 The gross vehicle weight of any school bus shall not exceed 165 pounds per certified net horsepower of the engine at manufacturer's recommended maximum revolutions per minute (RPM).~~

Retarder (optional) – Rub Rails

2251-R-43.00

No Change

2251-R-44.00

No Change

Seat Belt for Driver

2251-R-45.00

Current Rule DELETION:

~~**73.01 A Type 2 lap belt/shoulder harness seat belt shall be provided for the driver. The assembly shall be equipped with an emergency locking retractor (ELR) for the continuous belt system. The lap portion of the belt shall be guided or anchored where practical to prevent the driver from sliding sideways under it.**~~

~~**73.02 Adjustability of the mounting point for the driver seat belt pillar loop shall be provided to accommodate all heights and weights of bus drivers without interference with the driver's face or neck.**~~

~~**73.03 Each bus shall be equipped with a durable webbing cutter having a full width handgrip and a protected blade. The cutter shall be mounted in a location accessible to the seated driver.**~~

Seats/Restraining Barriers

2251-R-46.00

46.01 ~~All seating and restraining barrier design and construction must meet the provisions of FMVSS 222.~~ Type A school buses shall be equipped with restraining barriers conforming to FMVSS 222.

Seats/Restraining Barriers
(continued)

Current Rule DELETION:

~~**74.02 Lap belt ready seat frames shall be reinforced to meet FMVSS 210.**~~

~~**74.03 All seats shall be forward facing and shall be securely fastened to that part of the school bus body that supports them.**~~

~~**74.06 Seat material shall comply with FMVSS 302.**~~

~~**74.07 Passenger seat cushion retention system shall be employed to prevent passenger seat cushions from disengaging from seat frames or flipping forward in event of accident. Each seat cushion retention system shall be capable of withstanding vertical static load equal to minimum of 5 times weight of cushion.**~~

~~**74.09 If track seating is installed, the manufacturer shall supply minimum and maximum seat spacing dimensions for the bus that comply with FMVSS 222. This information shall be on a label affixed to the bus.**~~

Steering Gear Assembly

2251-R-47.00

47.01 All school bus chassis in all passenger capacities shall be equipped with heavy-duty, truck-type integral power steering. Power steering components shall be compatible with the GVW rating ~~for each capacity as shown in chassis manufacturer's literature~~.

Current Rules DELETION:

~~31.04 Chassis manufacturers shall provide and cover steering wheel column with a temporary plastic covering or equivalent, in order to provide protection from precipitation from time of manufacture until body is mounted.~~

Steps- Stop Signal Arm

2251-R-48.00

48.01 First step at service door shall be not less than 10 inches (12 inch for Type D) and not more than 14 inches (16 inches for Type D)~~ from ground, based on standard chassis specifications~~.

2251-R-49.01

Current Rules <u>DELETION:</u>

~~77.02 The stop signal arm shall be reflectorized in accordance with FMVSS 131.~~

Storage Compartment

2251-R-50.00

50.01 A metal container of adequate strength and capacity for the storage of tire chains, tow chains, and such tools as may be necessary for minor emergency repairs while bus is en route may be provided. Such storage container may be located either inside or outside the passenger compartment, but, if inside, it shall be secured and it shall have cover other than seat cushion that shall be securely fastened to it in such a manner as to prevent the contents from spilling ~~in case the bus overturns~~.

Sun Visor

2251-R-51.00

51.01 An interior, adjustable, sun visor shall be installed not less than 6 inches wide and 30 inches long. Type A school buses 14,500 GVWR or less shall have a sun visor according to manufacturer's standard size.

Proposed Rule REJECTED:

~~51.02 The sun visor may be transparent.~~

This proposed rule was rejected by TAC.

Tail Pipe

2251-R-80.00

Current Rule DELETION:

~~80.01 The tail pipe may be flush with but shall not extend more than one inch beyond the perimeter of the body for side exit or the bumper for rear exit.~~

~~80.02 Tailpipe shall not exit beneath any fuel filler location or beneath any emergency door or lift door.~~

Tires and Rims – Tow Hooks

2251-R-52.00

RETAINED:

52.01 Minimum tire and rim sizes shall be in accordance with FMVSS 120.

2251-R-53.00

No Change

Undercoating

2251-R-54.00

54.01 The entire underside of the bus body, including floor sections, cross member and below floor-line side panels, shall be coated with rust-proofing material meeting or exceeding NCST ~~compound for which compound manufacturer has issued notarized certification of compliance to bus body manufacturer that compound meets or exceeds all performance requirements of Federal Specification.~~

54.02 The undercoating material shall be applied with suitable airless or conventional spray equipment as per manufacturer recommended film thickness and shall show no evidence of voids in the cured film.

54.03 The undercoating material shall not cover any exhaust components of the chassis.

Undercoating (continued) -Ventilation

Current Rule DELETION:

~~**35.01 Chassis manufacturer shall coat undersides of steel or metallic front fenders with rust-proofing compound for which compound manufacturer has issued notarized certification of compliance to chassis builder that compound meets or exceeds all performance and qualitative requirements of Fed. Spec. using modified test.**~~

2251-R-55.00

No Change

Wheel Housings

2251-R-57.00

Current Rule DELETION:

~~**84.01 Wheel house openings shall be of full-open type.**~~

- ~~**84.02 Wheel housings shall be designed to support seat and passenger loads and shall be attached to floor sheets in such manner as to prevent any dust, water, or fumes from entering the body.**~~
- ~~**84.03 Inside height of wheel housings above floor line shall not exceed 12 inches.**~~
- ~~**84.04 Wheel housings shall provide clearance for installation and use of tire chains on single and dual power wheels.**~~
- ~~**84.05 The wheel housing opening shall allow for easy tire removal and service.**~~
- ~~**84.06 No part of a raised wheel housing shall extend into the emergency door opening.**~~

Windshield and Windows

2251-R-58.00

Current Rule DELETION:

~~85.01 All glass in windshield, windows, and doors shall be of approved safety glass, and of a quality to prevent distortion of view in any direction as specified in FMVSS.~~

~~85.02 Each full side window shall provide unobstructed emergency opening at least 9 inches high and 22 inches wide, obtained by lowering of window. If full drop windows are used, they shall be blocked so that when, in a down position, the opening between the window header and top of glass is not more than 12 inches.~~

Windshield Washers – Windshield Wipers

2251-R-58.00

Current Rule DELETION:

~~86.01 The bus shall be equipped with windshield washers that shall conform to FMVSS and body manufacturer's recommendations.~~

58.01 For Type A over 14,500 GVWR, C and D buses, the system reservoir capacity shall be a minimum of one gallon.

2251-R-59.00

Current Rule DELETION:

~~87.01 A windshield wiping system, two-speed or more, shall be provided.~~

Wiring

2251-R-60.00

ADDITION:

60.01(a) An appropriate identifying diagram (color plus a name or number code) for all chassis electrical circuits shall be provided to the body manufacturer for distribution to the end user.

Current Rule DELETION:

~~36.01 All wiring shall conform to current applicable recommended practices of SAE.~~

~~36.02 All wiring shall use a standard color, number, or function coding and each chassis shall have available at no cost to the district/service provider. a wiring diagram that coincides with the wiring of the chassis. Type A bus chassis may be exempt from this requirement.~~

Wiring
(continued)

2251-R-60.00 Current Rule DELETION continued:

~~**36.03 Chassis manufacturer shall install an accessible terminal strip or plug on the body side of the cowl, or at an accessible location in the engine compartment of vehicles designed without a cowl, that shall contain the following terminals for the body connections. Factory terminal strip from chassis manufacturer on Type A bus will be acceptable.**~~

~~**36.03 (a) main 100 amp body circuit**~~

~~**36.03 (b) tail lamps**~~

~~**36.03 (c) right turn signal**~~

~~**36.03 (d) left turn signal**~~

~~**36.03 (e) stop lamps**~~

~~**36.03 (f) back up lamps**~~

Wiring
(continued)

2251-R-60.00 **Current Rule DELETION:**

~~36.03 (g) instrument panel lights~~

~~88.01 All wiring shall conform to current standards of SAE.~~

~~88.02 Circuits:~~

~~88.02 (a) Wiring shall be arranged in at least nine regular circuits, as follows:~~

~~88.02 (a)(1) Head, tail, stop, and instrument panel lamps~~

~~88.02 (a)(2) Clearance lamps~~

~~88.02 (a)(3) Dome and step-well lamps~~

~~88.02 (a)(4) Starter motor~~

~~88.02 (a)(5) Ignition and emergency door signal~~

~~88.02 (a)(6) Turn signal lamps~~

~~88.02 (a)(7) Alternately flashing warning signal lamps~~

Wiring
(continued)

2251-R-60.00 **Current Rule DELETION continued:**

~~88.02 (a)(8) Horn~~

~~88.02 (a)(9) Heaters and defrosters~~

~~88.02 (b) Any of above combination circuits may be subdivided into additional independent circuits.~~

~~88.02 (c) All other electrical functions (such as electric-type windshield wipers) shall be provided with independent and properly protected circuits.~~

~~88.02 (d) Each body circuit shall be color or number coded and a diagram of circuits shall be attached to the body in a readily accessible location. Number coding is permitted only if the number is a permanent part of the insulation and is repeated at intervals of not more than 6 inches.~~

~~88.03 Each circuit shall have adequate circuit protection.~~

Wiring

2251-R-60.00 Current Rule DELETION continued:

~~88.04 All wires shall be installed within body. They shall be insulated so as to protect them from external damage and minimize dangers from short circuits. Whenever wires pass through body member, additional protection in form of appropriate type of insert shall be provided.~~

~~88.05 Wires not enclosed within body shall be enclosed in a protective jacket and fastened securely at intervals of not more than 18 inches. All joints shall be soldered or joined by equal effective connectors. The protective jackets shall be assembled to provide maximum protection against moisture and dust.~~

SPECIALLY EQUIPPED BUSES

Introduction - General

2251-R-61.00

No Change

2251-R-62.00

RETAINED:

62.01 Buses equipped for transporting students with special transportation needs shall comply with applicable FMVSS guidelines.

ADDITION:

62.03 The special equipment shall meet the NCST requirements.

Specially Equipped Buses – Other Topics

Current Rules DELETION:

~~**2251-R-91.00 et seq: Aisles**~~

~~**2251-R-**92.00 **et seq:** Definition~~

~~**2251-R-93.02**~~

~~**2251-R-**95.00 **et seq** Lift Equipped Entrance~~

~~**2251-R-**96.0 **et seq:** Power Lift~~

~~**2251-R-**97.00 **et seq:** Ramps~~

~~**2251-R-**98.00 **et seq:** Retraining Devices~~

For space considerations, all rule text was not included on slide

Specially Equipped Buses – Other Topics (continued)

Current Rules DELETION:

~~**2251-R-**99.00 **et seq:** Seating Arrangements~~

~~**2251-R-**100.00 **et seq:** Securement and Restraint System for Wheelchairs and Wheelchair Seated Occupants~~

~~**2251-R-**101.00 **et seq:** Service Entrance~~

~~**2251-R-**102.00 **et seq:** Support Equipment and Accessories~~

For space considerations, all rule text was not included on slide

Open Discussion

Question & Answer Period

Q U E S T I O N S ?

Please feel free to contact our department if you have any further questions or concerns.

COLORADO DEPARTMENT of EDUCATION cde

School Transportation Office

Susan Miller, Transportation Analyst
303-866-6656, Miller_S@cde.state.co.us
Brian Vasina, Transportation Analyst
303-866-6655, Vasina_B@cde.state.co.us
Wendi Chapin, Transportation Supervisor
303-866-6137, Chapin_W@cde.state.co.us

Transportation Unit
1580 Logan Street, Suite 310
Denver, CO 80203

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cde

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