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STANDARDS FOR SCHOOL BUSES LAWS AND REGULATIONS FOR THEIR OPERATION

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JOHN FRED WILLIAMS
Superintendent of Public Instruction

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FOREWORD

School transportation in Kentucky continues to grow in size and complexity. In the school year ending 1946, approximately 1,724 school transportation vehicles transported 122,000 children approximately 90,500 miles daily. This transportation cost approximately \$2,351,000.00 annually.

There are many administrative problems which arise in a district providing school transportation. These consist principally of selection and purchase of transportation equipment; selection and supervision of drivers and mechanics; care, maintenance and operation of the equipment; planning and determining length and character of school bus routes; and of finding the money to pay for the enterprise. Those who have this responsibility may profit from the material contained in the following pages. This material consists of Laws, Rules and Regulations of the State Board of Education governing the operation of school transportation vehicles and Standards for School Bus Equipment.

It is hoped that this information will be of assistance to Boards of Education and to parents in safeguarding the lives and health of the school children of this State as they cooperate in an attempt to provide economical and safe transportation facilities for their respective districts.

J. F. WILLIAMS

Superintendent of Public Instruction

INTRODUCTION

Application of Regulations.

Section 189.540, Kentucky Revised Statutes, requires that the State Board of Education shall adopt and enforce regulations to govern the design and operation of all school buses used for the transportation of school children. The regulations contained herein have been adopted by the State Board of Education to meet the requirement of the Statute. They apply to all motor vehicles used for transporting school children whether these motor vehicles are owned and operated by a school district or are privately owned and operated under contract with any school district. All standards for school bus chassis and school bus bodies in effect as of January 1, 1946, have been repealed. Any school buses delivered after that date shall comply with the standards stated herein.

The social and economic changes which have taken place during the past few years have placed upon the school system an enlarged educational responsibility. The individual differences of pupils, regard for the physical and mental health of children, and an increased emphasis on guidance and vocational efficiency have created a need for the expansion and enrichment of school curricula.

An educational program for rural territory which will meet these demands can best be achieved by an enlargement of the school unit. Pupils can be gotten to these units most economically by means of publicly supported school transportation. In increasing numbers, school buses are bringing pupils of many rural communities within reach of a specially trained teacher and ample school equipment which provide for them the training they need and want.

Transportation of school children in Kentucky has become an essential service. It may be said to be a method of equalizing educational opportunities between children of urban and rural communities. The constantly increasing demand for school transportation shows public approval, not only of this method of getting children to school but also of the kind of educational opportunities made possible by increasing the size of the school unit by means of consolidation. The chief purpose of providing transportation for school children, therefore, is to provide desirable educational oppor-

tunities for all children who live beyond a reasonable walking distance from a desirable school.

Safety and Economy.

Safety, economy and the proper protection of the health of all children transported are primary requirements which must be maintained. School administrative officials who furnish transportation facilities must assume full responsibility for furnishing desirable transportation facilities and for reporting transportation hazards on school bus routes to the proper authorities. They must assume also full responsibility for the strict enforcement of the School Law, Regulations of the State Board of Education and of the Regulations of the local Board of Education governing the transportation of school children. If it is found impractical at any time to observe certain regulations, the Superintendent of the district must assume responsibility for making any such changes as seem to be necessary for the best interest of all the people involved.

Transportation in Kentucky.

Each school day as of June, 1946, a fleet of approximately 1,724 school transportation vehicles carried approximately 122,000 school children 90,500 miles to the schools in this Commonwealth. Boards of Education expend annually for this purpose approximately \$2,351,000. This sum amounts to approximately 12% of the total current expenses of operating the schools in the State. A business of such vast proportion involves many problems of administration. The constantly increasing traffic hazards demand that extraordinary care be exercised in performing this service. To secure a reasonable amount of safety, comfort and reliable service in the transportation of school children, it is very necessary that the State Board of Education set the standards and specifications as to bus equipment and rules and regulations for personnel employed as drivers of school buses. It is hoped that the standards that have been prescribed will be of assistance in providing more desirable educational opportunities for children of rural territory. Any suggestions for the improvement of either the standards or the regulations will be appreciated by the State Department of Education.

Legal Provisions Relating to Pupil Transportation.

STATUTORY PROVISIONS

Section 158.110, Kentucky Revised Statutes, requires that Boards of Education shall furnish transportation for all pupils of ele-

mentary grades who do not reside within reasonable walking distance of the school provided for them. It permits the transportation of high school pupils.

1. Section 158.110, Kentucky Revised Statutes. **Transportation of Pupils.**—Boards of Education shall furnish transportation from their general funds or otherwise for pupils of elementary grade who do not reside within reasonable walking distance of the school provided for them, and any board of education may provide transportation from its general funds or otherwise for any pupil of any grade who does not live within a reasonable walking distance from the school provided for him. The boards of education shall adopt such rules and regulations as will insure the comfort, health and safety of the children who are transported, consistent with the rules and regulations of the State Board of Education dealing with the transportation of pupils. (1944, c. 173)

2. Section 160.310, Kentucky Revised Statutes. **Board to Provide for Insurance for School Buses.**—Each board of education may set aside funds to provide for liability and indemnity insurance against the negligence of the drivers or operators of school buses owned or operated by the board. If the transportation of pupils is let out under contract, the contract shall require the contractor to carry indemnity or liability insurance against negligence in such amount as the board designates. In either case the indemnity bond or insurance policy shall be issued by some surety or insurance company authorized to transact business in this state, and shall bind the company to pay any final judgment rendered against the insured for loss or damage to property of any school child or death or injury of any school child or other person.

3. Section 160.320, Kentucky Revised Statutes. **Passways to School for Pupils; Provision for.**—Any board of education may make provision for roads or passways to its school buildings to accommodate all pupils who are entitled to attend school, and may apply to the county court or the governing authority of the city having jurisdiction to open the same as other roads and passways are opened for public necessity and convenience. If there is no road or passway from the residence of any pupil to the school building which he attends it shall be lawful for such pupil, in attending school, to walk over the property of any person between the residence of the pupil and the school building.

4. Section 186.060, Kentucky Revised Statutes. **Motor Vehicles Owned by Governmental Units.**—(1) Applications for registration

of motor vehicles owned exclusively by county, city or board of education in the state or by the state or Federal government shall be accompanied by a statement from the head of the department of the governmental unit that owns the motor vehicle, certifying that the motor vehicle is exclusively owned and operated by the governmental unit. The application and statement shall be forwarded by the county clerk to the department, which shall give special authority to the clerk to register it. Upon receiving that authority the clerk shall issue a registration receipt and number plate and report the registration to the head of the department authorizing the registration. For his services in issuing such certificate of registration and number plate and reporting the same the county clerk shall be entitled to a fee of fifty cents in each instance, to be paid by the department upon whose authorization such license was issued. (1946, c. 122)

(2) No person shall use on a motor vehicle not owned exclusively by a county, city, board of education in the state or the state or Federal government, any license plate that has been issued for use on a motor vehicle owned by such a governmental unit.

5. Section 186.050, Kentucky Revised Statutes. **Registration Fees.**

—(5) Any person owning a truck or bus used solely in transporting school children and school employees may have the truck or bus registered as a school bus and obtain a license for \$4.50 by filing with the county clerk, in addition to other information required, an affidavit stating that the truck or bus is used solely in the transportation of school children and persons employed in the schools of the district, that he has caused to be printed on each side of the bed of the truck or bus and on the rear door or part of the bed the words "School Bus" in letters at least six inches high and of a conspicuous color and that the truck or bus will be used during the next twelve months only for the purpose stated. (1942, c. 78; 1944, c. 59)

6. Section 186.600, Kentucky Revised Statutes. **Age Limit for Drivers of School Buses and Public Passenger-Carrying Vehicles; Rules and Regulations as to Drivers of School Buses.**—No person under the age of eighteen shall drive a motor vehicle while it is in use as a school bus for the transportation of pupils to and from school. All drivers and all operators of school buses shall meet the requirements of law and the rules and regulations of the State Board of Education for school bus drivers and operators. Any violation of the rules and regulations of the State Board of Educa-

tion for school bus drivers and operators shall be subject to the penalty prescribed for violation of this section. No person under the age of twenty-one shall drive any other motor vehicle while it is in use as a public passenger carrying vehicle. Note: Age eighteen effective until June, 1947.

The provisions of this bill shall apply for the duration of the war and six months thereafter. (1944, c. 60)

7. Section 189.370, Kentucky Revised Statutes. **Passing Stopped School Bus.**—(1) Whenever any school bus is stopped upon a highway for the purpose of receiving or discharging passengers, every operator of a vehicle approaching from any direction shall bring his vehicle to a complete stop and shall not start up or attempt to pass until the school bus has finished receiving or discharging passengers. The driver of the bus, after having stopped for the purpose of receiving or discharging passengers, shall permit all vehicles that have stopped as required by this subsection to proceed before again putting the school bus in motion.

(2) The operator of a vehicle upon a highway outside a business or residence district upon meeting or overtaking any school bus which has stopped on the highway shall come to a complete stop and then may proceed with due caution for the safety of any children and may in no event drive in excess of ten miles per hour in passing the school bus.

(3) Subsection (2) shall be applicable only if the school bus bears upon the front and rear a plainly visible sign containing the words "school bus" in letters not less than four inches in height, which can be removed or covered when the vehicle is not in use as a school bus.

8. Section 189.120, Kentucky Revised Statutes. **Passenger and School Buses to Have Safety Glass.**—(1) Glass used in the windshield or in the window next to the operator or in the doors or rear windows of a bus used for the transportation of persons for hire, or as a school bus shall be safety glass whenever the vehicles are being operated on the highways.

(2) This section shall not become operative until the vehicles are replaced; after that, if it becomes necessary to replace glass in any of the openings described in subsection (1), safety glass shall be used in making the replacements. No person, firm or corporation shall sell any motor vehicle of the type referred to in sub-

section (1) unless the openings in the motor vehicles are equipped with safety glass. No new vehicle shall be registered unless it is equipped with safety glass.

(3) "Safety glass" as used in this section, means glass so treated or combined with other material as to reduce, in comparison with ordinary sheet or plate glass, the likelihood of injury to persons by objects from exterior sources or by glass when the glass is cracked or broken.

9. Section 189.050, Kentucky Revised Statutes. **Rear, Side and Clearance Lights.**—(1) All vehicles shall display at the rear one red light visible when lighted for at least five hundred feet. A red reflector meeting the requirements may be used in lieu of a red light.

(2) Every motor bus used for the transportation of persons for hire shall be equipped with at least one red light in the rear with the word "stop" on it which can be seen for one hundred and fifty feet when illuminated.

10. Section 189.070, Kentucky Revised Statutes. **Trucks to Carry Flares or Similar Signals.**—(1) No person shall operate any motor truck upon a highway outside of a business or residence district at any time from a half-hour after sunset to a half-hour before sunrise unless that vehicle carries not less than three flares, electric lanterns or other signals capable of continuously producing three warning lights, each visible from a distance of at least five hundred feet for a period of at least eight hours. A motor vehicle transporting flammables, however, may carry red reflectors in place of the other signals mentioned in this section. Every flare, lantern, signal or reflector shall be of a type approved by the department. The department shall publish lists of those devices which it has approved as adequate for the purposes of this section.

11. Section 280.320, Kentucky Revised Statutes. **Failure to Pay Toll; School District to Pay Toll for Children and Buses.**—(1) No person, unless he is entitled by law to free passage, shall pass or take any vehicles over or upon any part of any privately-owned toll bridge or toll ferry without paying in legal tender to the collector of tolls then stationed at the bridge or ferry the amount of toll prescribed by law or regulation for passage over the bridge or ferry.

(2) The school board of the district which is furnished school service for the children shall pay the proper toll charges over privately-owned toll bridges or toll ferries for children going to

or returning from school, and for school buses and other vehicles used exclusively in the transportation of school children to and from school. (1944, c. 112)

12. Section 280.330, Kentucky Revised Statutes. **Parking on Toll Bridge Forbidden.**—No person shall park any vehicle upon any public or privately-owned toll bridge at any time.

13. Section 280.990, Kentucky Revised Statutes. **Penalties.**—(10) Any person who violates any of the provisions of KRS 280.320 or 280.330 shall be fined not less than five dollars nor more than fifty dollars for each offense.

14. Section 281.020, Kentucky Revised Statutes. **Exemption of School Buses.**—The provisions of this chapter do not apply to:

(2) Motor vehicles used as a school bus and while engaged in the transportation of students, under the supervision and control, and at the direction, of school authorities.

15. Section 189.580, Kentucky Revised Statutes. **Duty in case of accident.**—(1) Any person who, while operating a vehicle on a highway, runs against or over, any other person, vehicle or personal property, in possession of any other person in such manner as to injure the other person or damage the property, shall immediately stop and ascertain the extent of the injury or damage and render such assistance as may be needed, including the carrying of the person or occupants of the vehicle to the nearest medical aid, if carrying is requested by the person struck, or by any occupant. The operator or person having or assuming authority of the operator, or ownership of the vehicle, shall give the occupant of the vehicle, or person struck if requested, the registration number of the vehicle, if any, and also the names and addresses of the owner, the occupants and operator. The total names need not exceed five in number.

(2) The operator of a vehicle involved in an accident resulting in injury to or death of any person, or total property damage to an apparent extent of fifty dollars or more shall, within twenty-four hours after the accident, forward a written report of the accident to the State Highway Patrol.

(3) Whenever the operator of a vehicle is physically incapable of making a required accident report and there was another occupant in the vehicle at the time of the accident who is capable of making a report, that occupant shall make the report or cause it to be made.

(4) The State Highway Patrol may require the operator to file supplemental reports whenever the original report required by subsection (2) is, in its opinion, insufficient. It may also require witnesses of accidents to render reports to the State Highway Patrol.

RULES AND REGULATIONS

1. Section 156.160 (7) Kentucky Revised Statutes. **Rules and Regulations.**—The Superintendent of Public Instruction shall prepare or cause to be prepared and submit for approval and adoption by the State Board of Education Rules and Regulations concerning the transportation of children to and from school.

2. Section 189.540, Kentucky Revised Statutes. **Regulations for School Buses.**—(1) The State Board of Education by and with the advice of the State Highway Patrol shall adopt and enforce regulations to govern the design and operation of all school buses used for the transportation of school children when buses are owned and operated by any school district or privately owned and operated under contract with any school district. Such regulations shall by reference be made a part of such a contract with a school district. Every school district, its officers and employes and every person employed under contract by a school district shall be subject to those regulations.

(2) Any officer or employe of any school district who violates any of the regulations or fails to include obligations to comply with the regulations in any contract executed by them on behalf of a school district shall be guilty of misconduct and subject to removal from office or employment. Any person operating a school bus under contract with a school district who fails to comply with any of the regulations shall be guilty of breach of contract and his contract shall be cancelled after notice and hearing by the responsible officers of such school district.

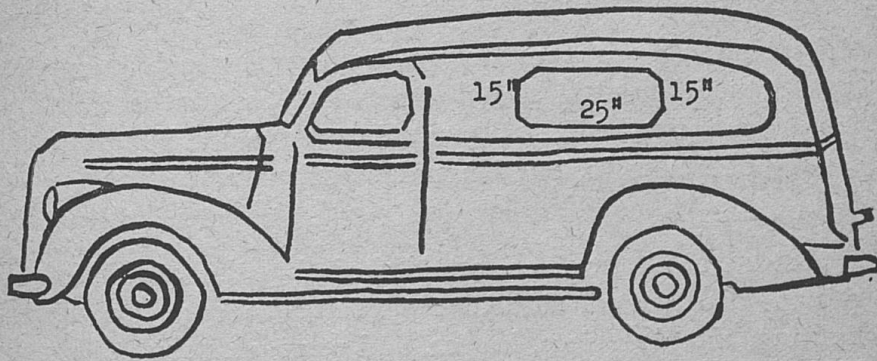
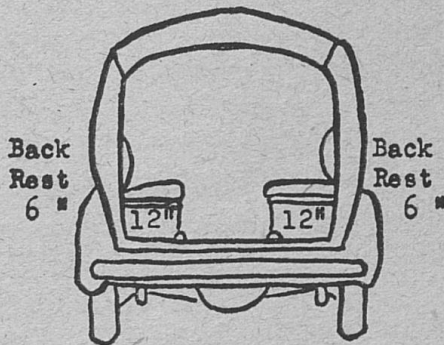
Rules and Regulations have been adopted by the State Board of Education in accordance with the provisions of these Laws. In preparing these Rules and Regulations, the safety, comfort and convenience of the pupil have received major emphasis.

STANDARDS FOR SCHOOL BUS CHASSIS

—30 Passenger or Over—

All manufacturers of school bus chassis shall file with the Superintendent of Public Instruction, or his authorized agent, not

later than the last day of May of each school year detailed specifications of all chassis which said manufacturers propose to sell for school bus use in Kentucky during the next school year. Said specifications shall include all equipment which will be furnished and shall give such information as will show whether the chassis proposed to be sold will meet Kentucky school bus standards. Said



statement of specifications shall be made on forms to be furnished by the Superintendent of Public Instruction, or his authorized agent.

No manufacturer, distributor or dealer shall deliver for use, nor shall an individual or board of education use, any school bus chassis until the specifications of said chassis have been approved by the Superintendent of Public Instruction, or his authorized agent, as meeting standards of the State Board of Education for school bus chassis.

Specifications for new models containing any changes in design or in construction made after the above named filing date shall be filed with and receive approval of the Superintendent of Public Instruction or his authorized agent as meeting requirements of the State Board of Education before they may be delivered by any

manufacturer, distributor or dealer or be put into use as school bus chassis by any individual or board of education.

School Bus Chassis Standards

1. Air Cleaner

Each school bus chassis shall be equipped with an adequate oil bath type air cleaner.

2. Axle

The axle specifications shall be as follows:

- a. Front axle shall have a gross weight rating at the ground according to the chassis manufacturer's rating, equal to or exceeding that portion of the total load which is supported by the front axle.
- b. Rear axle shall be of full-floating type and have a gross weight rating at the ground according to the chassis manufacturer's rating, equal to or exceeding that portion of the total load which is supported by the rear axle.
- c. The chassis manufacturer's rating for each axle on each model used in school buses shall be furnished in duplicate by the chassis manufacturer to the Superintendent of Public Instruction or his authorized agent.

3. Battery

Storage battery, as established by the manufacturer's rating, shall be of sufficient capacity to care for starting, lighting, signal devices, heater, and other electrical equipment. No bus shall be equipped with a battery of less than 120 ampere-hours measured at a twenty-hour rate. Battery shall be mounted outside body shell preferably under hood in an adequate carrier and readily accessible for servicing and removal from above or outside.

4. Brakes

Four-wheel brakes, adequate at all times to control the bus when fully loaded, shall be provided.

- a. Foot or service brakes shall be capable of stopping the complete unit (i.e., wet chassis weight,* plus body weight, plus driver's weight, without pupils) from the initial brake application within 22 feet when driven at a speed of 20 miles per hour over a dry level road having approximately .6 coefficient of friction and

* Wet chassis weight is a chassis with a full tank of gas, oil, and water.

whose surface is free from loose materials. This stopping ability to be determined by test with an approved decelerometer or other instrument which indicates brake effectiveness in units that are convertible into rate of deceleration.

b. Hand or emergency brake shall be of the hand lever type and shall be manually operated. It shall be provided in addition to the service brake, or shall be an entirely separate mechanical operating mechanism to be connected at least to the rear service brake shoes. It shall be capable of stopping the complete unit (i.e., wet chassis weight, plus body weight, plus driver's weight, without pupils) from the initial brake application within 50 feet when driven at a speed of 20 miles per hour over a dry level road having approximately .6 coefficient of friction and whose surface is free from loose materials. This stopping ability is determined by testing with an approved decelerometer or other instrument which indicates brake effectiveness in units that are convertible into rate of deceleration.

c. It is recommended that vacuum actuated power or assistor type brakes be used on all buses rated above 36 and including 48 rated pupil capacity. All buses in excess of 48 pupil rating capacity shall be equipped with booster assistor brakes with either vacuum or approved actuated power.

(1) Any installation of vacuum actuated power or assistor type brakes shall be made by an authorized representative of a chassis or brake manufacturer and must be in conformance with the recommendation of that manufacturer.

(2) Hydraulic line pressure may not exceed recommendation of chassis manufacturer.

(3) Every vacuum booster or air system must be equipped with a reserve tank of not less than 1000 cubic inches capacity.

5. Bumpers

a. Front bumper shall be furnished by the chassis manufacturer as part of the chassis. The front bumper must be of sufficient strength to permit the pushing of a

vehicle of equal gross vehicle weight without permanent distortion to bumper, chassis, or body.

- b. Rear bumper shall be furnished and secured to rear chassis frame by body manufacturer and so designed as to prevent hitching of rides and obtaining a toe hold. The rear bumper shall be of sufficient strength to permit the fully loaded vehicle being pushed without permanent distortion to bumper, chassis, or body.

6. Drive Shaft

Torque capacity of the drive shaft assembly shall at least equal maximum engine torque as developed through lowest transmission gear reduction. Each drive shaft shall be equipped with protective metal guard or guards located immediately to the rear of each forward universal joint in each propeller shaft, to prevent whipping through floor or dropping to ground when broken.

7. Exhaust Pipe

Exhaust pipe, muffler, and tail pipe shall be outside the bus body and attached to the chassis frame. The exhaust tail pipe shall be deflected slightly downward at the rear end and extend at least three inches beyond the chassis frame but not beyond the rear bumper.

The exhaust pipe shall be properly insulated from the gasoline tank and connections thereof by a metal shield at any point where it is 12 inches or less from tank or connections.

8. Fenders, Front

- a. The rear end of front fender should stop approximately one inch ahead of the back face of the cowl.
- b. The front fender should be properly braced and free from any body attachment.

9. Frame—The frame specifications shall be as follows:

- a. Each frame side member should be of one-piece construction. If the frame side members are extended, such extension shall be designed and furnished by the chassis manufacturer with his guarantee and the installation shall be made by either the chassis or body manufacturer and guaranteed by the company making the installation. Extensions of frame lengths are per-

missible only when such alterations are behind the rear hanger of the rear spring.

- b. No additional holes not provided in the original chassis frame shall be permitted in the top flanges of the frame side rails. There shall be no welding to the frame side rails except by the chassis or body manufacturer.
- c. Frames or the equivalent shall be of such design as to correspond at least to standard practice for trucks of the same general load characteristics used for severe service.

10. Gasoline Tank

- a. The gasoline tank shall have minimum capacity of 30 gallons and be made of 18 gauge terneplate or equivalent and mounted directly on the right side of the chassis frame entirely outside the body. Flexible gasoline and oil-proof connections shall be provided at both ends of the gasoline feed line. The tank shall be equipped with adequate baffles.
- b. The tank shall not extend in height above the side member of the chassis.
- c. The distance from the center line of the chassis to the outside of the tank shall not be more than 39 inches.
- d. The bottom of the tank shall not be more than 14 inches below the top of the frame.
- e. The distance from the cowl to the front of the tank shall be 42 inches minimum.
- f. The distance from the cowl to the center of the filler cap shall be 57 inches.
- g. The distance from the center line of the chassis to the center of the filler cap shall be 44 inches with a plus or minus tolerance of $\frac{1}{2}$ inch permitted.
- h. The center of the filler cap shall be 1 inch below the top of the frame with a tolerance of $\frac{1}{4}$ inch permitted.
- i. Engine supply line shall be taken from the top of the tank. There shall be a drain plug $\frac{1}{4}$ inch in diameter located in the center of the bottom of the tank.
- j. The gas tank shall have approval of Underwriters' Laboratories, Inc.

11. Generator

The generator shall have a minimum output of 175 watts or 25 amperes at a speed of 20 miles per hour. It shall be voltage and current controlled.

12. **Governor**

Governors are permissible and where used they shall be approved by the chassis manufacturer.

13. **Guards**

a. **Emergency Brake Drum**—If the emergency brake drum is located on the drive shaft, it shall be protected by an adequate metal shield mounted above such brake drum.

b. **Closures**—All closures between the bus body and the engine compartment shall be fitted with gas-tight gaskets and pedal openings shall be sealed by rubber or felt closures when the pedals are in position.

14. **Horn**

There shall be a horn or horns of standard make capable of producing a sound level of 110 decibels at a point on the axis of the horn 3 feet from the exit opening. The sound level meter used must comply with ASA specification (Z 243-1944). Measurement shall be made with the flat response. If an extra loud horn is desired it shall be capable of producing a sound level of 120 decibels under the conditions specified above. Obstructions in the sound path reduce the effectiveness of a horn. For this reason there is an advantage in mounting the horn outside the hood.

15. **Instrument Panel**

The instrument panel shall be equipped with speedometer showing speed and odometer giving accrued mileage, ammeter, oil pressure gauge, water temperature indicator, and gasoline gauge. The instrument panel shall have light of sufficient candle power to illuminate all instruments, and all instruments shall be maintained in good working order.

16. **Oil Filter**

Oil filter of the replaceable element or cartridge type shall be provided, and shall be connected by flexible oil lines whenever it is of the built-in design.

17. **Overall Length**

The overall length of the bus shall not exceed $35\frac{1}{4}$ feet.

18. **Passenger Load**

The gross weight of the vehicle when fully loaded (i.e., wet weight, plus driver's weight, plus weight of maximum pupil

load) shall not exceed the maximum gross vehicle weight rating of the vehicle as established by the manufacturer's rating. These ratings shall be furnished in duplicate by the manufacturer to the Superintendent of Public Instruction or his authorized agent.

19. **Power or Grade Ability**

Bus must be so geared and powered as to be capable of surmounting a 3 percent grade at 20 miles per hour with full load on continuous pull.

To meet the above specifications, the loaded gross weight of the bus shall not exceed 400 lbs. per certified net horsepower.

For the purpose of computing the performance ability the following formulas recommended by the Society of Automotive Engineers shall be used:

Ability Formulas

GVW — Gross weight of vehicle (or combination), lb.

S — Road speed, mph.

HP — Horsepower delivered to clutch at road speed S in particular transmission ratio being used.

G — Grade, %.

In the following ability formulas, a value of 1.2 lb. per 100 lbs. of gross weight is used for rolling resistance. Power lost in overcoming friction between the clutch and the driving wheels is taken as 0.1 of the power delivered to the clutch by the engine and an efficiency factor of 0.9 has been incorporated in the formulas.

a. $GVW = \frac{33,750 \times HP}{S(G \text{ plus } 1.2)}$

b. $GVW = \frac{33,750}{\frac{HP}{S(G \text{ plus } 1.2)}}$ — Lb. per HP

c. $S = \frac{33,750 \times HP}{GVW (G \text{ plus } 1.2)}$

d. $G = \frac{33,750 \times HP}{GVW \times S} - 1.2$ (This is the formula most commonly used.)

Speed Formulas

- S — Road speed, mph
 RPM — Engine speed in revolutions per minute
 r — Tire rolling radius, in.
 R — Total gear reduction — Rear axle ratio x Transmission ratio

e.
$$S = \frac{\text{RPM} \times r}{168 \times R}$$

f.
$$\text{RPM} = \frac{168 \times R \times S}{r}$$

20. Springs

Springs shall be of ample resiliency under all load conditions and of adequate strength to sustain the loaded bus without evidence of overload.

Rear springs shall be of the progressive type.

Front springs' stationary eyes shall be protected by a wrapper leaf in addition to the main leaf.

Chassis design shall be such that dual chains may be used on rear dual wheels where chains are required.

21. Steering Gear

Steering gear shall be approved by the manufacturer and designed to assure safe and accurate performance when the vehicle is operated with maximum load and at maximum speed. The mechanism must provide for easy adjustment for lost motion. No changes shall be made in the steering apparatus which are not approved by the chassis manufacturer.

22. Tires

The minimum tire specifications shall be as follows:

- a. The following tire and rim sizes, based upon the recommendation of the Tire and Rim Association, Akron, Ohio, shall be required. In order to allow for a reasonable tolerance, the total weight imposed on any tire shall not be greater than 10 percent more than the following ratings:

Size	R
6.5	
6.5	
7.0	
7.0	
7.5	
7.5	
8.2	
8.2	
9.0	
9.0	

23.

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Size and Ply Rating	Tire Load and Inflation in Lbs.	Rim Size	
		Present	Advanced
6.50-20-6	1700 @ 50	3.75P	5.0
6.50-20-8	1950 @ 65	3.75P	5.0
7.00-20-8	1950 @ 55	4.33R	5.0 or 5.5
7.00-20-10	2250 @ 70	4.33R	5.0 or 5.5
7.50-20-8	2250 @ 55	5.00S	5.5 or 6.0
7.50-20-10	2700 @ 75	5.00S	5.5 or 6.0
8.25-20-10	2750 @ 60	5.00S	6.0 or 6.5
8.25-20-12	3150 @ 75	5.00S	6.0 or 6.5
9.00-20-10	3450 @ 65	6.00T	6.5 or 7.0
9.00-20-12	3850 @ 80	6.00T	6.5 or 7.0

- b. Dual rear tires shall be provided on all vehicles. Spare tires, if required, shall be suitably mounted in an accessible location. All tires on given vehicle shall be interchangeable.

23. Weight Distribution

Weight distribution shall be such that not more than 78 percent of the gross vehicle weight shall be on the rear tires on a level surface.

STANDARDS FOR SCHOOL BUS BODIES

—30 Passenger or Over—

All manufacturers of school bus bodies shall file with the Superintendent of Public Instruction or his authorized agent not later than the last day of May of any school year detailed specifications of all bodies which said manufacturers propose to sell for school bus use in Kentucky during the next school year. Said specifications shall include all equipment which will be furnished and shall give such information as will show whether the bodies proposed to be sold will meet Kentucky school bus standards. Said statement of specifications shall be made on forms to be furnished by the Superintendent of Public Instruction or his authorized agent. No manufacturer, distributor or dealer shall deliver for use, nor shall an individual or board of education use, any school bus body, until specifications of said body have been approved by the Superintendent of Public Instruction, or his authorized agent, as meeting standards of the State Board of Education for school bus bodies. Specifications for new models containing any changes in design

or in construction made after the above named filing date shall be filed with and receive approval of the Superintendent of Public Instruction or his authorized agent as meeting requirements of the State Board of Education before they may be delivered by any manufacturer, distributor or dealer or be put into use as school bus bodies by any individual or board of education.

School Bus Body Standards

1. **Aisle**—The aisle specifications shall be as follows:

The minimum clearance of all aisles, including the aisle leading to the emergency door, shall be 12 inches.

2. **Body Sizes**—The following standards shall govern the sizes of school bus bodies.

The purchase of bus bodies shall be limited to the following lengths. However, adoption of these lengths shall impose no restrictions as to type of seat arrangement.

These sizes are based upon 25 inch spacings between rows of forward-facing seats, an outside width of 96 inches, a center aisle of 12 inches in width, and an average rump width of 13 inches. Body lengths are measured from the back of the cowl to the rear of the body at floor level.

Basic Pupil Load	Range of Body Lengths (With Tolerance of plus 8) minus
30	15'
36	17'
42	19'
48	21'
54	23' 6"
60	26'

Note: It is recommended that the 60 basic pupil load buses be used only on all-weather roads which are free of grades, curves, or other hazards that would endanger safety of pupils transported on such buses.

Where existing conditions make it necessary, the use of narrower bodies with less than 96 inches may be approved by the Superintendent of Public Instruction or his authorized agent.

3. **Book Racks**

Book racks shall be prohibited on the interior of the bus body.

4. Ceiling

The ceiling shall be free of all projections likely to cause injury to pupils. This standard is not intended in any way to require the use of an inner lining beneath the roof bows.

5. Color

National School Bus Chrome was adopted by the 1939 Conference on School Bus Standards as the uniform color for all school buses throughout the United States. The first consideration in adopting a uniform color was to provide the safety which will accrue when, throughout the United States, a school bus is recognized by its color. The second consideration was economy since manufacturers are forced to make an additional charge for special colors.

Scientists of the National Bureau of Standards, Washington 25, D. C., prepared the samples and provided technical advice upon which the choice was made for specifications.

Exact specifications for National School Bus Chrome are on file at the National Bureau of Standards. Copies may be obtained free upon request.

6. Construction.

Construction shall be all-steel or of other metal with a strength at least equivalent to all-steel as certified by the bus body manufacturer. Suitable insulation material may be used. The bus body shall be of sufficient strength to support the entire weight of a fully loaded bus on its top or side if overturned. Construction must provide a reasonably dustproof and watertight unit.

7. Defrosters

Defrosters must be of sufficient capacity to keep the windshield clear of fog, ice, and snow. This may be done by the use of fans or may take heat directly from an approved heater.

8. Doors—The following specifications shall apply to doors:

a. Service Door:

- (1) Service door shall be manually operated and of the hand lever type, under the control of the driver and so designed as to prevent accidental opening.
- (2) Service door shall be located on right side near the front of the bus. At least two-thirds of its

opening width shall be ahead of a point opposite the back of driver's seat.

- (3) Service door shall have a minimum horizontal clearance of 24 inches.
- (4) Service door shall be of folding type. If one leaf opens in and the other out, the front leaf shall open outward.
- (5) Lower panels as well as upper panels of each leaf shall have windows of safety glass of a sufficient size to permit driver to clearly see children who are waiting to enter bus and the ground where the children must alight.
- (6) Vertical closing edges of door shall be equipped with rubber, rubberized or other flexible materials to protect children's hands and fingers from being pinched or fastened between the door leaves when closed.
- (7) There shall be no door at the left of the driver.
- (8) A stanchion shall be required at the rear of the entrance step well from roof to floor. Placement shall not restrict passage-way to less than 24 inches.
- (9) A safety bar shall be installed from the stanchion to the wall on the entrance side of the bus.
- (10) A metal safety panel shall also be installed from the stanchion to the side of the bus. Panel must be at least two inches off the floor and extend to the height of the safety bar to prevent children in front seat from being thrown into step well in case of sudden stop.

b. **Emergency Door:**

- (1) Emergency door shall be located in center of rear of the bus.
- (2) Emergency door shall have a minimum horizontal clearance of 24 inches, a minimum vertical height of 48 inches, and shall be marked "Emergency Door" on the inside.
- (3) Emergency door shall be equipped with a fastening device which may be quickly released, but so designed as to offer protection against accidental release. Control from driver's seat shall not be permitted. Provision for opening from the outside

shall consist of a nondetachable device of such design as to prevent "hitching" but permit opening when necessary.

- (4) Emergency door shall be hinged on the right side of the body, shall open outward, and shall be designed to open from both inside and outside of the bus.
- (5) There shall be no steps leading to the emergency door.
- (6) Glass used in the emergency door shall be safety glass.
- (7) No seat or other object shall be so placed in the bus as to restrict the passage to the emergency door to less than 18 inches.

9. Floor

Floor shall be of metal at least equal in strength to 14 gauge steel and so constructed that exhaust gases cannot enter the bus. Floor shall be of nonskid metal or a fire-resistant, non-slipping surface may be applied to the metal floor. All closures between the bus body and the engine compartment shall be fitted with gaskets which will effectively prevent gas from entering the body.

10. Fire Extinguishers

Fire extinguishers are not required, but if they are used each bus shall be equipped with a fire extinguisher of a type and size approved by Underwriters' Laboratories, Inc., mounted in an accessible place with full view, and kept properly filled and in satisfactory operating condition at all times.

11. First-aid Kit

First-aid kits are not required, but if they are used each bus shall carry a dustproof first-aid kit mounted in an accessible place in full view and approved by the proper state authority, and the driver shall be instructed in its use. The kit shall be kept fully equipped and in good condition.

12. Heaters

Heaters are not required, but if they are used the heater shall be of the hot water type. Hot water heaters used only occasionally may be of the circulating type. Heaters shall be capable of maintaining an inside temperature of 50 degrees

Fahrenheit at average minimum January temperatures as established by the United States Weather Bureau.

13. Identification

- a. With the exception of fenders and trim, school bus bodies including hood, cowl, and roof shall be painted a uniform color, National School Bus Chrome, according to National Bureau of Standards' specifications.*
- b. The fenders and body trim, if used, shall be black.
- c. The words "SCHOOL BUS" in black letters at least six inches high shall be placed on each side and on both the front and rear of the body. (KRS 186.050 (5) provides: "to be printed on each side of the bed of the truck or bus and on the rear door or part of the bed the words 'School Bus' in letters at least six inches high and of a conspicuous color") It is recommended that all school buses of a school district be numbered on each side.
- d. "STOP ON SIGNAL" may be painted on the rear of the bus. The word "STOP" by itself shall not be used.

14. Inside Height

The minimum inside body height shall be 66 inches measured at the longitudinal center line from the back of the first row of seats to back of next to the last row of seats.

15. Inspection

The Superintendent of Public Instruction or his authorized agent is hereby authorized to make such inspections of school buses and transportation equipment as he deems wise. These inspections shall be made at such times and at such places as he feels are necessary for safe and economical pupil transportation.

16. Insulation

If the body is lined, the ceiling and walls shall be insulated with proper materials to deaden sounds and vibrations and to reduce heat transfer.

17. Lights and Signals

- a. **Headlights**—Each bus shall be equipped with headlights which can be dimmed, extra bulbs and fuses as required by state law. Lights shall be of the proper intensity and adjustment to meet National Bureau standards.

* Specifications on file at National Bureau of Standards, Washington, D. C.

- b. **Clearance Lights**—The body shall be equipped with two red clearance lights in the rear and two red or amber clearance lights at the front, mounted at the highest and at the widest portions of the permanent body.
- c. **Tail and Stop Lights**—Each bus shall be equipped with two combination tail and stop lights.
- d. **Interior Lights**—Interior lights shall be provided which adequately illuminate interior aisles and step-wells.
- e. **Flasher Stop Lights**—Each bus shall be equipped with red alternating flasher stop lights, two on the front and two on the rear, which flash while the service brake is being applied and while the bus is receiving or discharging pupils. These lights shall have visible lens area of not less than 28 square inches per lens, with the word "STOP" molded into the lens, a bulb of 24 candle power with a reflector back of it, and shall be clearly visible at a distance of 200 feet when the bus is in bright sunlight. They shall be so installed on the bus that the rays from them shall be directed in a line parallel to the road surface.
- f. **Flags and Flares**—Each school bus shall carry at all times three red flags for use in warning traffic in the event of a prolonged stop on the highway. Buses which operate at night must carry at least two oil burning or electric flares or reflectors to be displayed according to state law in the event of a prolonged stop.
- g. **Stop Signal**—Each bus may be equipped with a stop signal arm constructed of substantial materials and so designed as to facilitate operation by the bus driver while driving the bus. The stop signal shall be of the semaphore type, shall be mounted on the left side of the bus and shall be so designed as to be seen readily by motorists approaching the bus either from the front or the rear.

The color of the stop signal arm shall be National School Bus Chrome with the letters "STOP" in 6-inch black letters on both sides. The letters in the word "STOP" shall contain red reflector elements making the word visible at night when illuminated by legal headlights from a distance of approximately 200 feet.

18. **Mounting**—The mounting of body shall be as follows:

- a. Body manufacturers, when installing body on frame, shall insert between the body and the frame a spacer at every point of contact between the body and the frame of such form that shearing stresses shall not be put upon rivet heads.
- b. The chassis frame shall extend to the rear of the rear body cross number.

19. **Overhang**—

Body shall be mounted so that not more than 78 percent of the gross vehicle weight shall be on the rear tires on a level surface.

20. **Posts**—

The front corner posts shall be so designed and placed as to afford minimum obstruction to the driver's vision of the road. The strength of all posts and the roof shall be sufficient to support the entire weight of the loaded vehicle if overturned.

21. **Rear Bumper**—

Rear bumper shall be furnished and secured to rear chassis frame by body manufacturer and so designed as to prevent hitching of rides and obtaining a toe hold. The rear bumper shall be of sufficient strength to permit the fully loaded vehicle being pushed without permanent distortion to bumper, chassis, or body.

22. **Rear Vision**

- a. A nonglare interior rear-view mirror large enough (at least 4 inches x 15 inches) to afford a good view of the road to the rear, as well as of the pupils, shall be required. It shall have rounded corners and protected edges.
- b. There shall be an exterior nonglare rear-view mirror provided to the left of the driver. The area of the mirror shall be not less than 50 square inches. The mirror shall be firmly supported and set to give the driver a clear vision toward the left rear of the bus.

23. **Rear Windows**

The rear windows shall be stationary and solidly set in plastic or rubber. They shall have sufficient height and width to give the driver clear vision to the rear.

24. Rub Rails

Two rub rails of ample strength to resist impact and to prevent body crushing shall be provided on each side of the body. They shall be applied the full length of the body on the outside of the body, on the left side from the windshield post to the rear corner radius, and on the right side from the service door to the rear corner radius. One rail shall be located approximately at the seat line and the other approximately at the floor line. Pressed-in rub rails do not satisfy this requirement.

25. Seats

- a. The school bus body shall be equipped with forward facing seats securely fastened with bolts or rivets to that part or parts of the school bus body which supports them. No bus shall be equipped with jump seats or portable seats.
- b. The seat cushions shall be equipped with coil springs or soft rubber cushion and shall allow a minimum of 13 inches rump space per child and the width of the cushion from the front to the back shall not be less than 14 inches. The seat back cushion shall be of an upholstered padding thick enough to insure comfort, but not less than 2 inches thick at any point and shall be 17 inches measured up the seat back from the seat cushion line to the top of the seat.
- c. No seat on the right side of the bus shall be placed ahead of the forward-most pupil's seat on the left side of the bus.
- d. Seat back centers shall be within the range of 25-27 inches, inclusive. This 25-27 inch spacing also applies to distance between the rear-most position of the driver's seat and the first cross seat.
- e. No bus shall have more than 780 inches of lineal seating space.
- f. The seats on each side of the center aisle shall be of equal length.
- g. The minimum distance between the steering wheel and the back rest of the driver's seat shall be 12 inches. The driver's seat shall have a fore and aft adjustment of not less than 3 inches, and shall be strongly attached.

- h. Driver's Stanchion and Guard Rail—A vertical stanchion shall be installed to the right rear corner of the driver's seat in such position as not to interfere with adjustment of driver's seat and not to obstruct the 12-inch aisle. A guard rail so placed that it will not interfere with adjustment fore and aft of driver's seat shall extend from vertical stanchion to the left-hand wall behind the driver's seat approximately 30 inches above the floor. Stanchion and guard rail shall be a minimum of one inch outside diameter of metal tubing.
- i. A stanchion shall be required at the rear of the entrance step-well from room to floor. Placement shall not restrict passage-way to less than 24 inches.
- j. A safety bar shall be installed from the stanchion to the wall at a height of approximately 30 inches to prevent children in front seat from being thrown into step-well in case of sudden stop.

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26. Steps

The following regulations shall apply to the construction and design of bus steps at the service door:

32.

- a. The riser of the upper step shall be not less than 13 inches and not more than 15 inches. When more than two steps are used, the upper two steps may have a riser of less than 13 inches, but these risers must be of equal height.
- b. The steps shall be enclosed to prevent the accumulation of ice and snow.
- c. Steps shall not protrude beyond the side body line.
- d. A grab handle of not less than 10 inches in length shall be provided inside doorway and to the right upon entering, to assist pupils in getting on and off the bus.

33.

27. Sun Visor

The school bus shall be equipped with an interior adjustable sun visor not less than 5 by 13 inches in size.

28. Tail Pipe

The tail pipe shall extend beyond the end of the bus body. It shall be deflected slightly downward at the rear end but shall not extend beyond the rear bumper. It shall be of at least as large diameter as the exhaust pipe leading from the muffler. The rear end of the pipe shall be located at a point

to the right or left of the emergency door so as to prevent fumes from entering the door.

29. **Tools**

Bus shall have a tool compartment and carry such tools as may be necessary to make minor emergency repairs while the bus is en route.

30. **Ventilators**

Body shall be equipped with a suitable, controlled ventilating system of sufficient capacity to maintain the proper quantity of air under operating conditions without the opening of windows except in extremely warm weather. No intake ventilators in the front bus corner below the top of the engine hood line shall be used. Static-type exhaust roof ventilators shall be installed in the low pressure area of the front roof panel.

31. **Wheel Clearance**

The body shall clear the wheels sufficiently to allow for load and chains.

32. **Width**

Ninety-six (96) inches shall be the standard outside width of school bus bodies. Where existing conditions make it necessary, the use of narrower bodies with less than 96 inches may be approved by the Superintendent of Public Instruction or his authorized agent.

33. **Windshield and Windows**

- a. All glass in windshield, windows, and doors shall be of safety glass approved by Underwriters' Laboratories, Inc., and so mounted that permanent mark is visible, such glass to be of sufficient quality to prevent distortion of view in any direction.
- b. The windshield shall be slanted to prevent glare and large enough to permit the driver to see the road clearly.
- c. All full side windows shall provide an unobstructed emergency opening at least 9 inches and not more than 12 inches in height by at least 22 inches in width obtained either by lowering the window or by a knock-out type of split sash window. A guard which will definitely restrain pupils from extending their arms and heads out of the window and at the same time permit the use of the emergency opening shall be provided

unless the lower part of the window shall be protected with safety glass in such a manner as to definitely restrain pupils from extending their arms and heads out of the windows and at the same time permit use of the emergency opening.

34. Windshield Wipers

There shall be two windshield wipers of vacuum or electric type.

35. Wiring

- a. The wiring shall be arranged in at least five regular circuits as follows:
 - (1) Dome lights, (2) step, clearance and marker lights; (3) starting, (4) ignition, (5) head, tail, stop, and dash lights.
- b. Where desired there shall be three auxiliary circuits as follows:
 - (1) direction lights, (2) Heaters, defroster, etc.; (3) auxiliary stop lights.
- c. Each circuit, except starter and ignition, shall be separately fused.
- d. All wires shall be insulated and protected by a covering of fibrous loom (or equivalent) which will protect them from external damage and which will eliminate dangers from short circuits.
- e. Wires shall be fastened securely to body and/or chassis at intervals of not more than 24 inches. All joints shall be soldered or joined by equally effective connectors.

STANDARDS FOR SMALL SCHOOL BUSES

—10 to 18 Passengers—

All manufacturers of school buses designed to seat 10 to 18 passengers, and referred to herein as the "Small School Bus", shall file with the Superintendent of Public Instruction, or his authorized agent, not later than the last day of May of each school year detailed specifications of such school buses as said manufacturer proposes to sell of said size for school bus use in Kentucky during the next school year. Said specifications shall include all equipment which will be furnished and shall give such information as will show whether the said buses proposed to be sold will meet the

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standards of Kentucky for such school buses. Said specifications shall be stated on forms to be furnished by the Superintendent of Public Instruction or his authorized agent.

No manufacturer, distributor or dealer shall deliver for use, nor an individual or board of education use, any of said small school buses until the specifications of the same have received the approval of the Superintendent of Public Instruction, or his authorized agent, as meeting standards of the State Board of Education for such school buses.

Specifications for new models containing any changes in design or in construction made after the above named filing date shall be filed with and receive approval of the Superintendent of Public Instruction, or his authorized agent, as meeting requirements of the State Board of Education before they may be delivered by any manufacturer, distributor or dealer or be put into use as a school bus by any individual or board of education.

The Bus Chassis

1. Air Cleaner

Each school bus chassis shall be equipped with an adequate oil bath type air cleaner.

2. Axle

The axle specifications shall be as follows:

- a. Front axle: Shall have a gross weight rating at the ground according to the chassis manufacturer's rating equal to or exceeding that portion of the total load which is supported by the front axle.
- b. Rear axle: Shall have a gross weight rating at the ground according to the chassis manufacturer's rating equal to or exceeding that portion of the total load which is supported by the rear axle.
- c. The chassis manufacturer's rating for each axle on each model used in school buses shall be furnished in duplicate by the chassis manufacturer to the Superintendent of Public Instruction or his authorized agent.

3. Battery

Storage battery, as established by the manufacturer's rating shall be of sufficient capacity to care for starting, lighting, signal devices, heater, and other electrical equipment. No bus shall be equipped with a battery of less than 90 ampere-

hours measured at a 20-hour rate. Battery shall be mounted outside body shell preferably under hood in an adequate carrier and readily accessible for servicing and removal from above or outside.

4. Brakes

Four-wheel brakes, adequate at all times to control the bus when fully loaded, shall be provided.

a. Foot or service brake: Shall be capable of stopping the complete unit (i.e., wet chassis weight, plus body weight, plus driver's weight, without pupils) from the initial brake application within 22 feet when driven at a speed of 20 miles per hour over a dry level road having approximately .6 coefficient of friction and whose surface is free from loose materials. This stopping ability shall be determined by test with an approved decelerometer or other instrument which indicates brake effectiveness in units that are convertible into rate of deceleration.

b. Hand or emergency brakes: Shall be of the hand lever type and shall be manually operated. It shall be provided in addition to the service brake, or shall be an entirely separate mechanical operating mechanism to be connected at least to the rear service brake shoes. It shall be capable of stopping the complete unit (i.e., wet chassis weight, plus body weight, plus driver's weight, without pupils) from the initial brake application within 50 feet when driven at a speed of 20 miles per hour over a dry level road having approximately .6 coefficient of friction and whose surface is free from loose materials. This stopping ability shall be determined by test with an approved decelerometer or other instrument which indicates brake effectiveness in units that are convertible into rate of deceleration.

5. Bumpers

Front and rear bumpers shall be furnished by the chassis manufacturer as part of the chassis. The front bumper must be of sufficient strength to permit the pushing of a vehicle of equal gross vehicle weight and the rear bumper of being pushed without permanent distortion to bumpers, chassis, or body.

6. Exhaust Pipe

Exhaust pipe, muffler, and tail pipe shall be outside the bus body attached to the chassis frame. The exhaust tail pipe shall be deflected slightly downward at the rear end and extend three inches beyond the chassis frame. Manufacturers shall see that the tail pipe extends beyond the end of the bus body, but not beyond the rear bumper.

7. Gasoline Tank

The gasoline tank shall be mounted, filled, and vented outside the body.

8. Generator

The generator shall have not less than 25 amperes maximum output, shall be voltage and current controlled, and shall be capable of delivering 25 amperes from a speed of 20 miles per hour or more.

9. Horn

There shall be a horn or horns of standard make capable of producing a sound level of 110 decibels at a point on the axis of the horn 3 feet from the exit opening. The sound level meter used must comply with ASA specifications (Z 243-1944). Measurement shall be made with the flat response.

If an extra loud horn is desired it shall be capable of producing a sound level of 120 decibels under conditions specified above. (Obstructions in the sound path reduce the effectiveness of a horn. For this reason there is an advantage in mounting the horn outside the hood.)

10. Instrument Panel

The instrument panel shall be equipped with speedometer showing speed and odometer giving the accrued mileage, ammeter, oil pressure gauge, water temperature indicator, and gasoline gauge. The instrument panel shall have light of sufficient candle power to illuminate all instruments, and all instruments shall be maintained in good working order.

11. Oil Filter

Oil filter shall be provided, shall be of the replaceable element or cartridge type, and shall be connected by flexible oil lines.

12. **Passenger Load**

The gross weight of the vehicle when fully loaded (i.e., wet weight, plus driver's weight, plus weight of maximum pupil load) shall not exceed the maximum gross vehicle weight rating of the vehicle as established by the manufacturer's rating. These ratings shall be furnished in duplicate by the manufacturer to the Superintendent of Public Instruction or his authorized agent.

13. **Power or Grade Ability**

Bus must be so geared and empowered as to be capable of surmounting a 3 percent grade at 20 miles per hour with full load on continuous pull.

The loaded gross weight of the bus shall not exceed 400 lbs. per certified net horsepower.

For the purpose of computing the performance ability of a vehicle refer to the Society of Automotive Engineers' formula for the Large Vehicle.

14. **Tires and Rims**

The tires and rims shall conform to standards of the Tire and Rim Association (Akron, Ohio) for the gross vehicle weight to be accommodated, provided that a 10 percent tolerance may be allowed.

The Bus Body

1. **Aisle**

The aisle shall be 12 inches for forward-facing seats.

2. **Body Sizes**

Note: The small vehicle may vary in capacity from 10 to 18 pupils, is narrower in width than the large bus, and the body is converted from a body originally manufactured for other purposes. Specifications for inside height and width follow in alphabetical order.

3. **Color**—See Identification, page 686.

4. **Construction**

The body shall be of steel panel construction. It shall be of sufficient strength to support the entire weight of a fully loaded bus on its top or side if overturned.

5. Defrosters

Defrosters, if required, shall be of sufficient capacity to keep the windshield clear of fog, ice, and snow. This may be done by the use of fans or may take heat directly from an approved heater.

6. Doors

a. Service door shall be located at the right of the driver and shall be manually controlled from the driver's seat by an over-center control.

b. Emergency door:

- (1) Emergency door shall be located in the center of the rear of the bus and equipped with a fastening device for opening from the inside and outside of the body, which may be quickly released, but is designed to provide protection against accidental release. A metal guard shall be placed over the door control on the inside. Control from the driver's seat shall not be permitted. Provision for opening from the outside shall consist of a device of such design as to prevent "hitching" but permit opening when necessary.
- (2) The door shall open either vertically or horizontally. When vertical type door is used, there shall be an unobstructed aisle at least 10 inches wide.
- (3) Emergency door shall be marked "EMERGENCY DOOR" on the inside.
- (4) There shall be no steps leading to emergency door.
- (5) No seat or other object shall be so placed in the bus as to restrict the passage to the emergency door to less than 18 inches.

7. Fire Extinguishers

If a bus is equipped with a fire extinguisher, it shall be of a type and size approved by Underwriters' Laboratories, Inc., mounted in an accessible place in full view and kept properly filled and in satisfactory operating condition at all times.

8. First-Aid Kit

If a bus is equipped with a first-aid kit, it shall be a dust-proof kit mounted in an accessible place in full view and

approved by the Superintendent of Public Instruction or his authorized agent and the driver shall be instructed in its use. The kit shall be kept fully equipped and in good condition.

9. **Floor**

The floor of the body shall be covered with nonskid material and shall be gastight.

10. **Heaters**

The heater shall be of the hot water type. Heaters shall be capable of maintaining an inside temperature of 50 degrees Fahrenheit at average minimum January temperatures as established by the United States Weather Bureau.

11. **Identification**

For purposes of identification:

- a. School bus bodies, including hood, cowl, and roof shall be painted a uniform color, National School Bus Chrome, according to specifications of the National Bureau of Standards, with the exception of front fenders and running board.
- b. The front fenders shall be black, and the body trim, if used, shall be of the same color.
- c. School bus bodies shall bear the words "SCHOOL BUS" in black letters at least 4 inches high on both the front and rear of the body or on signs attached thereto.
- d. "STOP ON SIGNAL" may be painted on the rear of the bus. The word "STOP" by itself shall not be used.

12. **Inside Height**

The minimum inside body height shall be not less than 50 inches.

13. **Instrument Panel**—See Instrument Panel in Chassis Standards

14. **Lights**

Lights shall be standard equipment for the type of vehicle being converted.

Flasher Lights—Each bus shall be equipped with red alternating flasher stop lights, two on the front and two on the rear, which flash while the service brake is being applied and while the bus is receiving or discharging pupils. These lights shall have visible lens area of not less than 28 square inches per

lens, with the word "STOP" molded into the lens, a bulb of 24 candle power with a reflector back of it, and shall be clearly visible at a distance of 200 feet when the bus is in bright sunlight. They shall be so installed on the bus that the rays from them shall be directed in a line parallel to the road surface.

15. **Rear Vision**

Inside and outside rear view mirror in sizes 4 inches by 5 inches for inside, and 4 inches in diameter for outside.

16. **Seats**

a. All seats shall be securely fastened to the body of the vehicle. They shall be covered with suitable padding material and comfortably upholstered with adequate padding.

b. Jump or portable seats shall not be used. The seat beside the driver, if regular equipment, or installed by the vehicle manufacturer, may be used. If the vehicle is equipped with a movable seat beside the driver, it shall not be occupied by more than one pupil. It shall be securely fastened to the body and shall be so constructed as not to interfere with the pupils entering or leaving the vehicle.

c. Thirteen inches shall be the allowable rump width in determining seating capacity of bus.

d. All seats shall be 14 inches in depth overall. The distance from the top of the undepressed seat cushion to the floor at the front of the seat shall be 12 to 14 inches and at the back of seat cushion $10\frac{1}{2}$ to $12\frac{1}{2}$ inches from the floor.

e. If forward-facing seats are used, they shall be so placed that the distance from center to center measured at the top center of the backs shall be not less than 24 inches.

f. If longitudinal seats are used, only two shall be installed.

g. The back rest for longitudinal seats shall be at least 8 inches in vertical width and shall extend at least 12 inches in height above the seat.

17. **Stop Signal Arm**

Each bus may be equipped with a stop signal arm constructed of substantial material and so designed as to facilitate operation by the bus driver while driving. The stop signal arm shall be of the semaphore type, shall be mounted on the left side of the bus and be so designed as to be seen readily by motorists approaching the bus from either the front or the

rear. The color of the stop sign shall be National School Bus Chrome with the letters "STOP" in 6-inch black letters on both sides.

The letters in the word "STOP" shall contain red reflector elements making the word visible at night when illuminated by legal headlights from a distance of approximately 200 feet.

18. **Sun Shield**

Sun glare shield approved by chassis manufacturer as standard shall be provided when needed.

19. **Width**

The inside width shall be not less than 51 inches measured at the seat line.

20. **Windshield and Windows**

Each bus shall have at least one window placed in each side. Each window shall consist of not less than 250 square inches of glass. Windows shall provide a glass area at least one-seventh the area of the floor. Each window shall be set in a metal frame glazed with felt or rubber channels in such manner as will make it secure and noiseless when the bus is in operation. All window openings cut in the framework shall have rounded edges and welded corners. The windows shall afford adequate protection against wind and rain.

All glass in the windshield, windows, and doors shall be of safety glass approved by the Underwriters' Laboratories, Inc.; such glass shall be of sufficient quality to prevent distortion of view in any direction.

21. **Windshield Wipers**

There shall be two windshield wipers of vacuum or electric type.

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STANDARDS FOR CONVERSION OF PANEL TRUCK TO BE USED FOR TRANSPORTING TWENTY OR FEWER PUPILS

The following standards shall apply to Panel Trucks which are used for transporting twenty or fewer children of school age.

1. Chassis standards

The standards for chassis which are used for transporting twenty or fewer children shall be the same as those for transporting more than twenty children, except the wheelbase length may be shorter and single wheels may be used on the suburban carryall and the panel truck. The rear bumper shall be so attached as to make the hitching of rides or obtaining of a toe hold impossible.

2. Body standards

The body shall be a regular school bus body with the same standards as those designed to seat more than twenty school children, or that of a regular passenger car, suburban carryall or commercial panel truck with body modifications as stated herein.

a. Suburban carryall

This type of body may be used with the usual commercial seating arrangement if it does not cause an overcrowded condition with this arrangement of seats. This type of body may be seated in the same manner as outlined herein for a panel truck.

b. Panel body conversion for school bus use

The all steel or all metal body which is usually constructed for regular commercial use on panel trucks shall be modified as follows:

- (1) **Front seats.** The forward facing seat at the entrance side shall be removed so the children may have a safe and convenient way of entering and leaving the right side of the bus.
- (2) **Seating.** Lateral seats of not more than two pieces shall be used on either side of the body. They may have springs or shall be of No. 1 poplar, oak or

pine, at least seven-eighths of an inch thick and at least twelve inches wide. They shall be padded with three layers of felted cotton on which shall be placed one layer of Louisiana moss or treated hair. They shall be covered with at least a good quality of imitation leather. They shall be hinged at the back and legs shall be constructed of one-half to three-fourths inch round metal which shall extend from the seat to the floor in such manner as will permit seats to be raised when not in use. Enough hinges and legs shall be used to make the seats sufficiently strong and sturdy.

Forward facing seats of the same type and arrangement as are usually found in suburban carryalls may be used where the number to be transported is not such as will cause too crowded a condition with this arrangement of seats.

Back rests. They shall be at least six inches in width and constructed of the same material as the seats without springs and shall be placed at the proper height above the seat for comfort of the children.

- (3) **Windows.** Bodies of wheelbase lengths of more than 115 inches shall have at least one window placed in each side halfway from back edge of the front door to back of the body. This window shall be at least 15 by 25 inches and equipped with safety glass set in a frame with "U" shaped felts and mouldings or rubber grommet fastened around it in such a manner as will make it secure and noiseless when the bus is in operation.

c. **Other specifications**

The specifications listed below which apply to bodies designed to seat more than twenty school pupils shall apply to the bodies of panel truck or suburban carryall, viz.: **Ceiling; defroster; doors—1, 8 and 9; floor; identification; lighting shall meet state requirements and at least one inside dome light shall be provided; sun visor; safety glass; flags; additional safety equipment; recommended equipment; inspection; rear vision.**

RULES AND REGULATIONS FOR OPERATING SCHOOL BUSES

Operating Rules and Regulations

1. County Superintendent

- a. Maintain a continuing study of transportation routes, costs, and needs in the county; and to participate in state-wide, or special transportation studies by preparation of records and maps showing bus stops in accordance with instructions from the Superintendent of Public Instruction.
- b. Make such reports on transportation as may be required by the Superintendent of Public Instruction.
- c. Prepare and keep up to date at all times a map or maps of the county showing the locations of all schools and the attendance area of each school, the location of each transportation route, type of road covered, stops designated for each school bus, and the areas designated as non-transportation zones.
- d. Consult with each school principal concerning:
 - (1) The adequacy of transportation service and efficiency of drivers;
 - (2) See that pupils are instructed in safety education covering hazards faced by individual children, conduct on the bus, traffic laws and school transportation regulations.
- e. Recommend and nominate to the county board of education duly qualified school bus drivers for all school bus routes.
- f. Submit reports and recommendations to the county board of education for consideration of transportation matters, including the following:
 - (1) Proposed routing of school buses shown by maps and by data for each route descriptive of the roads, bus, driver, pupils and schools served, complete

costs of the service, and proposed non-transportation zones.

- (2) A cost accounting for each bus and route, covering expenditures for (a) new equipment, (b) salaries, (c) operating expenses for county-owned buses including fuel, tires, repair, etc., (d) contract costs.
 - (3) Outline of the county's bus maintenance plan stating for each bus and driver the names of persons responsible for (a) making emergency repairs, (b) mechanical check of bus not less than once each month, (c) purchase of fuel, (d) accounting of bills for fuel and other operating supplies and services, (e) supervision of operation; all record, reporting, and accounting forms used in the county's transportation program to be included in this report.
 - (4) Proposed policies and regulations which are planned to achieve greater equalization of educational opportunities within the county and/or to result in greater safety, efficiency or economy of the service.
 - (5) Description and location of road and traffic hazards which the county boards should officially call to the attention of county or city officials who are responsible for their correction.
- g. Supervise transportation and execute such policies as are adopted by the county board of education, and to enforce all regulations of the State Board of Education and all supplementary regulations of the county board that are in harmony with the State regulations.

2. School Principal

- a. Cooperate with the county superintendent and bus drivers in arranging a schedule to serve the children and meet the needs of the school and to keep the schedule posted in the school.
- b. Cooperate with the county superintendent in planning routes that serve the school.
- c. Report to the county superintendent major infractions of rules by bus drivers and frequent deviations from

time schedule, and complaints of parents which have not been rectified to the satisfaction of the parent.

- d. Report to the county superintendent as promptly as possible any deficiency in equipment, in maintenance or operation of equipment which serves the principal's school and comes under his observation or is reported to him; and to note particularly whether regulations are being observed concerning:
 - (1) Neatness of driver
 - (2) Cleanliness of bus
 - (3) Promptness and accuracy of driver's reports
 - (4) Maintenance of schedule
 - (5) Orderly loading, seating, and unloading of children
 - (6) Condition of tires
 - (7) Emergency door in rear not regularly used
 - (8) Emergency door protected from accident release, but may be quickly released if needed
 - (9) Driver's mirror satisfactory
 - (10) Entrance door operated by driver at his seat
 - (11) Seats adequately cushioned
 - (12) Schedule followed
 - (13) Bus apparently in good running order throughout
 - (14) Regular driver present
- e. Plan the program of the school so that children who arrive early or remain late on account of transportation schedules will be under school supervision at all times and will, in so far as practicable, have a planned program of activity.
- f. Assume responsibility for all disciplinary cases reported by the driver concerning pupils enrolled in his school.
- g. Maintain a map, when practical, showing (1) the attendance areas of the school, (2) the zones within these areas served by transportation at public expense, and (3) the non-transportation zones in which bus service is not available to pupils.
- h. See that transportation records are properly kept and that reports to be made by bus drivers are promptly and correctly made.

- i. Make monthly and annual reports to the county superintendent on prescribed forms.
- j. Be responsible for supervision of loading and unloading bus children, and to assign these duties to teachers or others in the school organization as necessary.
- k. Incorporate in the school curriculum such instruction as is needed to result in children transported either by school bus, private car or otherwise, becoming alert to the particular hazard faced by each individual child. Each child should describe the hazards involved in his own environment and the precautions to be taken, and emphasis should be placed on special responsibilities assigned to each transported pupil by regulation of the State Board of Education and the county board of education.

3. Driver's Supervision of Pupils

- a. He shall cooperate in enforcing all regulations governing the conduct of pupils from the time they enter the bus in the morning until they alight at the schoolhouse, and from the time they enter the bus at the schoolhouse until they alight at the regular stop for leaving the bus.
- b. He shall not permit the display of any advertising signs on the bus either inside or outside of it.
- c. He shall transport no freight, baggage, or merchandise of any kind while the bus is transporting pupils, except property of passengers or the school district.
- d. He shall not stop and pick up or let off passengers except at regularly designated stops, which stops shall be designated by the board of education, superintendent or the principal of the school.
- e. He shall transport only those pupils designated by the board of education or the principal of the school or schools he serves. He shall not haul any person who is not a pupil of the school, a teacher or an employee of the board of education unless authorized to do so by the board of education, its authorized agent or the principal of the school he serves.
- f. He shall see that the bus is parked each day at a designated place for loading before the school closes. The principal of each school shall designate the loading

place for each bus and the procedure to be followed. This procedure shall be observed by the pupils and those responsible for supervising the loading of the bus both in taking the children to the school and bringing them home.

- g. At the school building, he shall do all the loading and unloading on the school ground. Where this is impossible, he shall do it out of all traffic at the side of the road adjoining the school ground.
- h. He shall report promptly to the principal any misconduct of pupils on his bus.
- i. At the direction and under the regulations prescribed by the school authorities, he shall have the children from time to time practice "Safety Drills" in leaving the bus.
- j. He shall check the seating capacity of the bus with the number of pupils who ride and shall report to the school officials when the capacity is exceeded. It is desirable to have a safe and comfortable seat for each pupil transported.
- k. He shall be provided with an attendance report form on which to keep a roll of all who ride with him. He shall, if requested to do so, report to the principal each morning the names of those who were absent on the homeward trip the day before as well as those absent that morning.
- l. He shall not permit a pupil to leave the bus except at the regular stop unless by permission of school authorities or parents.
- m. He shall not allow any pupil to occupy such a position in his bus as will interfere with his vision to the front, side, or by means of the mirror to the rear, or interfere with the operation of the bus.
- n. He shall not be required to wait for any pupil at the regular designated stop unless the pupil is observed as making an effort to meet the bus.

4. Safe Driving

- a. He shall report to school officials any road hazards as they occur.
- b. He shall report to the school officials the license number and, if possible, the name and residence of the

driver of any motor vehicle which is operated in violation of the state law pertaining to stopping of motor vehicles approaching a school bus which is stopped to load or unload pupils, or any other violation of the state law when such violation in any way endangers the safety of pupils being transported in his bus.

- c. He shall not permit a radio to be installed in his bus.
- d. He shall carry a reasonably accurate watch which shall be checked daily with the principal of the school and his bus shall run on the time schedule which has been made for his route. This bus schedule must be filed with the principal within one week after school starts and shall not be changed except by notice and approval of the principal of the school.
- e. He shall not stop or pass near the crest of hills or on curves where the sight distance is not sufficient for safe passing.
- f. He shall give proper signals before stopping and use proper traffic lanes when making turns.
- g. He shall not drive faster than forty miles per hour when transporting children on the best roads. He shall drive more slowly on gravel and dirt roads or when required by crowded traffic, bad weather, poor roads or other conditions.
- h. He shall not permit gasoline to be put into the tank while there are any children in the bus or while the motor is running.
- i. He shall see that the school bus doors are closed at all times when the bus is in motion.
- j. He shall not operate the bus with the clutch disengaged except when coming to a stop.
- k. He shall not leave the bus at any time while the engine is running or the brakes are released.
- l. He shall not run the bus backwards on the ground without proper signaling from a responsible person on the ground.
- m. He shall not transport with pupils any animals, firearms, explosives or anything of a dangerous or objectionable nature.
- n. He shall be governed by all rules of the road that apply to the vehicle which he is operating.

- o. He shall not permit any other person to occupy his seat, drive the conveyance or tamper with the motor or any of its controls unless such person is approved by the board of education.
- p. He shall bring his bus to a full stop not more than fifty feet nor less than ten feet before crossing any railroad or electric car line. He shall bring the vehicle to a full stop before crossing or entering any through highway or street.
- q. In case of an emergency which requires the bus to stop on the highway for any length of time, he shall put out warning flares or flags at least one hundred yards in front and behind the bus.
- r. He shall make a full stop for any pupils to enter and leave the bus.
- s. He shall observe the definite limits for different parts of the route which the school authorities have set for him.
- t. He shall use the bus only for transporting pupils, teachers and other employees of the board of education to and from school on regularly designated bus routes. He shall make no other trips unless ordered to do so by the board of education or its designated agent.
- u. When it is necessary to overtake and pass a slow moving vehicle, he must be sure no third vehicle is drawing near from any direction within five hundred feet.
- v. He shall slow down to twenty miles per hour and give the customary hand signal before turning left.
- w. He shall exercise extreme care in the loading and unloading of pupils. Children shall not be permitted to leave their seats until the bus has stopped in the proper position; then each pupil shall get out of the bus in the proper manner without crowding or in any way disturbing others.
- x. He shall signal to all drivers coming up from the rear before stopping or turning.
- y. School buses shall not run less than 100 yards apart when it is necessary for them to operate on the same road.
- z. If patrols are used, the driver shall assist them to see that all children obey the rules of safe conduct and in

maintaining order both in going to and from the bus, getting on and off of it, and while it is in motion.

5. Driver's Care of the Bus

- a. He shall not operate a bus which he believes to be unsafe until it is examined and, if necessary, repaired by a mechanic designated by the board of education or its authorized representative.
- b. He shall check his bus daily before use to see that it has a sufficient supply of water and oil. He shall grease the bus as often as is necessary to keep it in good working order and in safe condition.
- c. He shall check his bus at least once a week to see that it is in good working order and safe as to brakes, tires, battery, lights, horns, windshield wipers, service door, emergency door, and radiator. He shall have these and all other working parts of the bus checked at least once a month by a competent mechanic who has been designated by the board of education or its authorized agent. The mechanic shall record the information from this inspection on a blank form to be furnished by the board of education and copies shall be sent, one to the bus driver, one to the principal, and one to the superintendent of schools.
- d. He shall thoroughly clean his bus inside after each day's use and wash it on the inside with a disinfectant recommended by the county health officer at least once a week during epidemics. He shall clean the outside as often as is needed in order to keep the color and lettering clear and easily seen.
- e. He shall see that his bus is equipped with such tools as necessary to make the usual and ordinary emergency repairs while on the road.
- f. He shall keep his windshield free from dirt and ice.
- g. He shall not make any except emergency repairs to a publicly-owned school bus or its equipment unless he be the mechanic charged with the maintenance of the bus.

6. Miscellaneous Regulations for the Driver

- a. He shall report immediately to the proper school and traffic officials any accident in which his bus or any of

the pupils riding in it are involved. He shall make such additional reports as are requested.

- b. He shall, under no condition, carry a load exceeding that which is prescribed by the board of education. The board should determine the maximum load of each bus on advice of the manufacturer.
- c. He shall not run ahead of the time schedule approved by the principal or principals of the schools he serves.
- d. He shall not knowingly permit anyone to enter the bus who is under the influence of intoxicating liquor or drugs.
- e. He shall not knowingly permit a loaded weapon of any sort on the bus.
- f. He shall not permit dogs or other animals on the bus when the pupils are being transported.
- g. No school bus shall be used for other than school purposes without permission of the board of education.
- h. He shall not assign his contract to any third party or employ any third party as a driver without the consent of the board of education or the principal of the school in case of an emergency requiring a temporary substitute driver.
- i. He shall make all reports required by the Superintendent of Public Instruction, the board of education or principal of the schools he serves.
- j. He shall follow both the letter and the spirit of the instructions of the county school superintendent and the principal of the school or schools where he transports pupils. He shall also collect any additional data which shall be required by school authorities.
- k. He shall familiarize himself with all school laws, rules and regulations relating to pupil transportation of the State Board of Education and the board of education which employs him.
- l. He shall report to the principal:
 - (1) Any occasion where the parent makes a complaint which the driver is not in a position to rectify to the satisfaction of the parent.
 - (2) Any hazard which arises or continues to exist, the cause of which the driver cannot assume full

responsibility for the safety of children in his care until the reported hazard has been removed.

Regulations for Pupils

The right of all pupils to ride in the conveyance is conditioned on their good behavior and observance of the following rules and regulations. Any pupil who violates any of these should be reported to the school principal.

1. The driver is in full charge of the bus and the pupils. Pupils shall obey the driver cheerfully and promptly.
2. Pupils shall obey and respect the orders of monitors or patrols on duty.
3. Pupils shall occupy the space designated for them by the driver.
4. Pupils shall be on time; the bus cannot wait for those who are not on time.
5. Pupils shall observe the following:
 - a. Never stand in the road while waiting for the bus
 - b. Clean their feet before entering the bus
 - c. Avoid spitting on the floor of the bus. Anyone so doing should be reported to the principal
 - d. Not throw waste paper or other rubbish on the floor of the bus
 - e. Not mar or otherwise deface the bus
 - f. Not start for school when sick or when any member of their family has a contagious disease
 - g. Avoid unnecessary conversation with the driver
 - h. Abstain from the use of tobacco and profane or indecent language
 - i. At all times keep arms and head inside the bus windows
 - j. Get on or off the bus or change seats in the bus only when it is not in motion
 - k. Not leave the bus without driver's consent, except at home or at school
 - l. Respect persons whom they pass on the routes
 - m. Report to the driver at once any damages to the bus
 - n. Walk on the left side of the road, facing the traffic.
6. Pupils who must cross the road after alighting from the bus should pass in front of the bus and not behind it.

The driver should see that the way is clear before the child is permitted to cross the road.

7. Should any pupil persist in violating any of these regulations, it shall be the duty of the driver to notify the principal and after due warning has been given to the pupil, the principal shall then forbid such disobedient pupil the privileges of riding the bus until permission to ride again has been given by the board of education. Written notice of the action of the principal shall be furnished the parent through the board of education, but such notice need not precede action by the principal.
8. Any complaints of drivers, pupils, or parents, not specified in the above regulations, shall be reported promptly to the principal or superintendent.
9. Should the conduct of a pupil on the bus endanger the lives or morals of other people and the offending pupil fails to cease such conduct when requested by the bus driver to do so, it shall be the duty of the driver to put the offender off of the bus and report his action to the principal immediately. This should be done only in extreme cases and as a last resort to protect the safety of other pupils.

STANDARDS FOR SCHOOL BUS DRIVERS
Minimum Qualifications of the School Bus Drivers

The following standards shall be minimum requirements in all districts of Kentucky for the selection of school bus drivers:

1. **Age**

Before entering upon the discharge of his duties, the driver of the school bus shall conform to the law governing age of the driver.

2. **Bond**

Each driver or contractor for the operation of a school bus shall be required to give bond for the faithful performance of his contract.

3. **Contract**

A written agreement shall be entered into between the board of education and any person employed by such board for the transportation of pupils. Such agreement shall provide that the party contracting with the board or the driver employed by the board, as the case may be, agrees to comply with and observe all laws governing transportation of pupils and further agrees to comply with all rules and regulations pertaining to school bus drivers and the operation of school buses prescribed by the State Board of Education and the local school authorities. (Section 189.540, Kentucky Revised Statutes)

4. **Experience**

Because of the vast difference between operating an automobile and a regular school bus loaded with pupils, the bus driver shall satisfy the employing authority of his ability to drive a school bus. This may be done by filing with the board evidence of his driving experience.

5. **General Knowledge and Mechanical Ability**

Each board of education shall make definite regulations concerning the mechanical ability and general knowledge which its bus drivers shall have. Each driver shall be required to show his knowledge and ability concerning each of the following:

- a. **Minor repairs of his bus while on the road.** Every applicant for a school bus driving position shall give evidence of his knowledge of bus maintenance and demonstrate his ability to inspect the vehicle which he operates. A specific plan of preventive maintenance shall be established and administered by the driver.
- b. Every applicant for a school bus driving position shall be required to show that he understands what is required of a school bus driver by the general transportation laws, rules and regulations of the State Board of Education, and rules and regulations of the employing board of education concerning transportation of school children.

6. **First Aid**

Each driver shall show training in first aid by presenting a certificate from the American National Red Cross.

7. **License**

The driver shall not be permitted to drive the school bus unless he holds the license required by law.

8. **Physical Fitness**

No one shall be employed to drive a school bus who is not in good physical and mental health, or who has a communicable or contagious disease, and who does not possess all his limbs. He shall be strong enough physically to handle the bus with ease. HE SHALL HAVE NORMAL USE OF BOTH HANDS, BOTH FEET, BOTH EYES, AND BOTH EARS. Each bus driver shall present at least annually a certificate concerning his physical condition. Such certificate shall be on a form adopted by the State Board of Education and furnished by the employing board. Said certificate shall be from a reputable physician or the local health officer, either of whom shall be designated by the employing board for this purpose.

9. **Substitute Driver**

- a. Substitute drivers shall meet the same requirements as regular drivers.
- b. The regular driver or contractor shall not put on a substitute driver unless said substitute has been approved by the school board. In case of an emergency, a temporary substitute driver may be approved by the

local school principal until the regular driver or regular substitute driver's services may be had.

10. Character and Habits

He shall be thoroughly reliable, and of good repute, a person whom the children will respect, and whose actions should result in constructive influence over the pupils. He shall be capable of maintaining order.

No person shall be employed or kept in service as a driver of a school bus who uses intoxicating liquors; he shall not use tobacco while in the bus or on the school grounds; and he shall refrain from the use of profane and indecent language.

11. Personal Appearance

The driver shall be required to keep clean and neat while operating a school bus. Boards of education may at their discretion require the drivers to wear uniforms.

12. Attend Conferences

The driver shall attend and participate in all conferences and training classes for school bus drivers which may be held in the district and be prepared at any time to pass successfully a reasonable examination concerning traffic laws, state and county transportation regulations, driving ability, first aid, and any special physical examinations, when requested by the Superintendent of Public Instruction or by the board of education or its executive officer, the superintendent of schools of the district.