

1990



**NATIONAL
STANDARDS
for
SCHOOL BUSES
and
OPERATIONS**

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**NATIONAL STANDARDS FOR SCHOOL BUSES
and
NATIONAL STANDARDS FOR
SCHOOL BUS OPERATIONS**

1990 Revised Edition

Recommendations of

**THE ELEVENTH NATIONAL CONFERENCE ON
SCHOOL TRANSPORTATION**

Central Missouri State University
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FOREWORD

The 1990 National Conference on School Transportation was the latest in a series beginning in 1939 and continuing in 1945, 1948, 1951, 1954, 1959, 1964, 1970, 1980 and 1985. All conferences have been made up of official representatives of State Departments of Education, local school district personnel, contract operators, advisors from industry and from other interested professional organizations and groups. Each conference has resulted in one or more publications that contain the recommendations of that particular conference.

The recommendations of standards for school buses and their operation has been a major purpose of all conferences. The 1939 Conference was called for this sole purpose and formulated a set of recommended standards for school buses of 20 or more passengers. The 1945 Conference revised the 1939 recommendations and added standards for small vehicles of 10 to 18 passengers. Both standards were further revised by the 1948 Conference. There were further revisions in 1959, and the 1964 Conference added standards for school buses to be used in transporting handicapped children. In addition to revising standards for larger vehicles, the 1970 Conference refined the standards for school buses designed to transport fewer than 24 passengers.

The 1980 Conference updated the standards for school bus chassis and bodies, rewrote the complete standards for the special education bus, and included definitions for the Type A, B, C and D bus. One of the major tasks of the 1980 Conference was to revise the standards to remove any conflicts with superseding federal regulations, many of which were mandated by sections of the Motor Vehicle and School Bus Safety Amendments of 1974 (P.L. 93-492).

The 1985 Conference updated the standards for school bus chassis, body, special education and operations procedures. A major project was completed in the adoption of a uniform school bus accident report form. This form will standardize school bus accident data reporting throughout the school transportation industry. Major issues such as safety inside the vehicle, loading and unloading, emergency procedures and special education were discussed with appropriate resolutions passed for future research and implementation.

The 1990 Conference removed the word "minimum" from the title of the Conference publication. The format of the Conference publication was re-

organized into two parts, "Standards for School Buses and Standards for Operations". All sub-parts such as accident reporting and special education transportation were incorporated into the section on the school bus or the section on operations.

A major change was incorporated into the procedures for the 1990 Conference. Any mandatory standard could be recommended for a special vote for forwarding action to the appropriate federal agency with a request for rulemaking. This rulemaking request would be an attempt to have the standard become a federally mandated requirement. For this forwarding action to be approved, any such item had to receive a two-thirds affirmative vote. The delegation approved forwarding action on standards for mirrors, emergency exits, accident reporting and special education transportation.

Other major problems in pupil transportation have received attention at these National Conferences. On several occasions, recommendations concerned primarily with overtaking and passing of school buses were transmitted to the National Committee on Uniform Traffic Laws and Ordinances for consideration in connection with revisions of the Uniform Vehicle Code. The 1948 Conference made recommendations on uniform records and reports for pupil transportation. The major purpose of the 1948 Conference was the formulation of recommendations related to standards and training programs for school bus drivers. These recommendations were revised by the 1959 Conference, and a new publication on the topic was issued. The 1954 Conference gave considerable time to the discussion of the extended use of school buses in the school program. The 1970 Conference also adopted standards for school bus operation (issued in a separate report).

With the enactment in 1966 of the National Traffic and Motor Vehicle Safety Act, the federal government was given responsibility for developing and promulgating motor vehicle safety standards for motor vehicles sold in the United States. These Federal Motor Vehicle Safety Standards (FMVSS) are continually evaluated and revised as needed. Such standards in their present form or as subsequently amended will void any action taken during the 1990 National Conferences wherever there is conflict. Whenever standards adopted by the 1990 National Conference, go beyond, or are in addition to FMVSS, they remain valid.

The structure for the 1990 Conference and its operating guidelines was carried out by the Interim Committee. Funding for the conference was shared solely by each individual participant of the Interim,

Steering and Writing Committees, and all delegates at the conference.

Don M. Carnahan
General Conference Chairman

OBJECTIVES AND GUIDING PRINCIPLES

Since the first National Conference on School Bus Standards in 1939, certain objectives and guiding principles had a vital role in the development of the standards for school buses. These objectives and guiding principles have been reaffirmed and emphasized at the subsequent National Conferences. The two major objectives, *safety* and *economy*, along with the following principles, have served as guideposts for making decisions on the standards and in arriving at sound and common agreement.

Objectives

The transportation of pupils in safety and comfort on *safe, economical* vehicles can be assured through adequate state regulations governing school bus construction.

Safety includes all those factors relating to the school bus construction which may directly or indirectly affect the safety and welfare of pupils transported.

Economy includes the construction, procurement, operation and maintenance of school buses consistent with the safety and welfare of the pupils.

Guiding Principles

1. Uniform state school bus standards should:
 - a. Be consistent with the objectives of safety and economy.
 - b. Eliminate the construction of unsafe buses.
 - c. Reduce conflicting standards wherever possible among states in the interest of production efficiency.
 - d. Specify exact dimensions where necessary to increase the efficiency of volume production.
 - e. Eliminate unnecessary luxury consistent with the safety and welfare of pupils transported.
2. Any adaptation of the nationally recommended standards should be made by states only in order to permit desirable adjustments to local needs and only when such adaptations do not:
 - a. Conflict with the recommended National Standards.
 - b. Otherwise unduly increase production costs.
3. Uniform state standards for school buses should specify results desired in terms of safety and economy, and these performance specifications must be defined when this is necessary to make the regulation enforceable.
4. Provisions should be made for periodic review and revision of uniform state standards for school buses through cooperation of the states.
5. Uniform state standards for school buses should permit opportunities for the use of new inventions and improvements which are consistent with safety and economy.
6. Uniform state standards for school bus construction should provide for a degree of flexibility within which sound construction is possible (consistent with safety and economy) to accommodate the various manufacturers.
7. Uniform state standards for school bus construction should recognize that the actual designing of school buses is a responsibility of the manufacturers.
8. The current National Standards for School Buses are considered in full force and effect as recommendations to the states. Revisions of these standards are made only when evidence indicates that such revisions are needed.

USING THESE STANDARDS FOR SCHOOL BUSES

In order that these standards for school buses may be put into effect, each state legislature which has not already done so should confer upon the appropriate state agency the general responsibility for setting up statewide rules and regulations regarding the construction of school bus chassis, bodies and equipment. Detailed standards for school buses or their operations should not be written into state law.

The standards for school buses appearing in this report must be officially adopted by the appropriate state agency to become legally effective within that state.

These standards are intended to apply primarily to new vehicles, including all types of school buses as defined in the section entitled, Definitions, School Bus (Type A, Type B, Type C, Type D). It should be noted here that vehicles with a capacity for less than 10 passengers cannot be certified as school buses under federal regulations.

These standards are not intended to apply to buses used primarily as public carriers rather than to transport pupils to and from school.

States should normally allow at least six (6) months lead time between publication of specifications and effective date. The effective date should be expressed:

"These specifications apply respectively to chassis and bodies placed in production after month, date, year."

Requests for interpretation of these Standards should be mailed to the chairman of the Interpretation Committee, addressed as follows: Mr. Wm. Richard Alexander, Chief, Pupil Transportation Section, Maryland State Department Of Education, 200 West Baltimore Street, Baltimore, MD 21201.

The Interim Committee succeeds the Conference Steering Committee between conferences. Requests for modifications of these Standards and development of new Standards should be directed to the chairman of the Interim Committee, addressed as follows: Mr. Don M. Carnahan, Director, Pupil Transportation, Office of the Superintendent of Public Instruction, Old Capitol Building, FG-11, Olympia, WA 98504-3211.

INTRODUCTION TO SCHOOL BUS STANDARDS

This portion of the book is divided into two sections: Chassis Standards and Body Standards. There are two basic reasons for this format: (1) to define chassis and body standards, and (2) to assign responsibility for providing the defined equipment. Items in the chassis standards are to be provided by the chassis manufacturer. Items in the body standards are to be provided by the body manufacturer.

Every attempt has been made by the Writing Committees, the Conference itself, and the Editing Committee to eliminate conflicts between these specifications and federal regulations. Should conflicts be found or arise through new federal regulations or legally binding interpretations of those regulations they should be brought to the attention of the Interpretation Committee.

For new vehicles, it is the responsibility of the vehicle manufacturers to certify compliance with applicable federal standards by installing a certification plate in the driver's area on each vehicle. However, as the vehicle is maintained over its useful life, it is the responsibility of those who supervise and perform work on the vehicle to assure on-going compliance with all applicable standards. For this reason, maintenance personnel training, quality components, quality workmanship and thorough maintenance records are absolutely essential.

Finally, in order to insure that specifications are being met by manufacturers, states are urged to adopt and carry out effective pre-delivery inspection programs. This will promote safety as well as uniformity of compliance with specifications.

DEFINITIONS, SCHOOL BUS

Type A

The Type "A" school bus is a conversion or body constructed upon a van-type compact truck or a front-section vehicle, with a gross vehicle weight rating of 10,000 pounds or less, designed for carrying more than 10 persons.

Type B

A Type "B" school bus is a conversion or body constructed and installed upon a van or front-section vehicle chassis, or stripped chassis, with a gross vehicle weight rating of more than 10,000 pounds, designed for carrying more than 10 persons. Part of the engine is beneath and/or behind the windshield and beside the driver's seat. The entrance door is behind the front wheels.

Type C

A Type "C" school bus is a body installed upon a flat back cowl chassis with a gross vehicle weight rating of more than 10,000 pounds, designed for carrying more than 10 persons. All of the engine is in front of the windshield and the entrance door is behind the front wheels.

Type D

A Type "D" school bus is a body installed upon a chassis, with the engine mounted in the front, midship, or rear, with a gross vehicle weight rating of more than 10,000 pounds, designed for carrying more than 10 persons. The engine may be behind the windshield and beside the driver's seat; it may be at the rear of the bus, behind the rear wheels, or midship between the front and rear axles. The entrance door is ahead of the front wheels.

BUS CHASSIS STANDARDS

Air Cleaner

1. The engine intake air cleaner (system) shall be furnished and properly installed by the chassis manufacturer to meet engine (manufacturer's) specifications.
2. The intake air system for diesel engines may have an air cleaner restriction indicator properly installed by the chassis manufacturer to meet engine specifications.

Axles

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

Brakes

1. A braking system, including service brake and parking brake, shall be provided.
2. Buses using air or vacuum in the operation of the brake system shall be equipped with warning signals, readily audible and visible to the driver, that will give a continuous warning when the air pressure available in the system for braking is 60 psi (pounds per square inch) or less or the vacuum in the system available for braking is eight (8) inches of mercury or less.

An illuminated gauge shall be provided that will indicate to the driver the air pressure in pounds per square inch or the inches of mercury vacuum available for the operation of the brakes.

- a. Vacuum-assist brake systems shall have a reservoir used exclusively for brakes that shall be adequate to ensure loss in vacuum at full stroke application of not more than 30 per cent with the engine not running. Brake system on gas-powered engines shall include suitable and convenient connections for the installation of a separate vacuum reservoir.
- b. Any brake system dry reservoir shall be so safeguarded by a check valve or equivalent device, that in the event of failure or leakage in its connection to the source of compressed

air or vacuum, the stored dry air or vacuum shall not be depleted by the leakage or failure.

3. Buses using a hydraulic assist-brake system shall be equipped with warning signals, readily audible and visible to the driver, that will provide continuous warning in the event of a loss of fluid flow from primary source or loss of electric source powering the back-up system.
4. The brake lines and booster-assist lines shall be protected from excessive heat and vibration and installed in a manner which prevents chafing.
5. All brake systems shall be designed to permit visual inspection of brake lining wear without removal of any chassis components.

Bumper, Front

1. Front bumper shall be furnished by chassis manufacturer as part of the chassis on Type A, B, and C buses unless energy absorbing or other bumper options necessitate installation by the body manufacturer. When Type D chassis are supplied to a body company by a chassis manufacturer, the body company shall supply the front bumper as part of the body installation.
2. Unless energy absorbing bumper is used, the front bumper shall be of pressed steel channel or equivalent material at least 3/16" thick and not less than 8" wide (high) and shall extend beyond forward-most part of the body, grille, hood, and fenders and shall extend to outer edges of the fenders at the bumper's top line.
3. Front bumper, except breakaway bumper ends, shall be of sufficient strength to permit pushing a vehicle of equal gross vehicle weight without permanent distortion to the bumper, chassis, or body.
4. Tow eyes or hooks shall be furnished and attached so as not to project beyond the front bumper. Tow eyes or hooks attached to the frame chassis, shall be furnished by the chassis manufacturer. This installation shall be in accordance with the chassis manufacturer's standards.

Optional Equipment

Bumper, Front—Energy Absorbing

An energy absorbing front bumper may be used providing its design shall incorporate a self-restoring energy absorbing system of sufficient strength to:

1. Push another vehicle of similar GVW without permanent distortion to the bumper, chassis, or body; and
2. Withstand repeated impacts without damage to the bumper, chassis, or body according to the following performance standards.
 - a. 7.5 MPH fixed barrier impact (FMVSS cart & barrier test)
 - b. 4.0 MPH corner impact at 30 degrees (Part 581 CFR Title 49, Ch V)
 - c. 20.0 MPH into parked passenger car (class B, C, and D buses of 18,000 lbs GVW or more)
3. The manufacturer of the energy absorbing system shall provide evidence from an approved test facility (capable of performing the above FMVSS tests) that their product conforms to the above.

Certification

1. Chassis manufacturer will, upon request, certify to the state agency having pupil transportation jurisdiction that their product meets minimum standards on items not covered by certification issued under requirements of the National Traffic and Motor Vehicle Safety Act.

Clutch

1. Clutch torque capacity shall be equal to or greater than the engine torque output.

Color

1. Chassis, including wheels and front bumper, shall be black. Hood, cowl and fenders shall be in national school bus yellow.

Rims shall be of a color used by rim manufacturers (silver, grey, or black).
2. Hood may be painted with non-reflective paint.

Drive Shaft

1. Drive shaft shall be protected by a metal guard or guards around the circumference of the drive shaft to reduce the possibility of its whipping through the floor or dropping to the ground if broken.

Electrical System

1. Battery

- a. Storage battery shall have minimum cold cranking capacity rating equal to the cranking current required for 30 seconds at 0 degrees Fahrenheit (-17.8c) and a minimum reserve capacity rating of 120 minutes at 25 amps. Higher capacities may be required depending upon optional equipment and local environmental conditions.
- b. Since all batteries in Type B, C and D buses are to be located in a sliding tray, the battery shall be temporarily mounted on the chassis frame by the chassis manufacturer.

In these cases, the final location of the battery and the appropriate cable lengths shall be according to the SBMI Design Objectives Booklet, January 1985. (See Appendix)

2. Alternator

- a. All Type A buses and Type B buses up to 15,000 lbs GVWR shall have a minimum 60 ampere per hour alternator.
- b. Type B buses over 15,000 lbs GVWR and all C and D buses shall be equipped with a heavy-duty truck or bus type alternator meeting SAE J 180; having a minimum output rating of 100 amperes, alternator shall be capable of producing a minimum of 50% of its maximum rated output at the engine manufacturer's recommended idle speed.
- c. Type A bus equipped with an electrical power lift shall have a minimum 100 ampere per hour alternator.
- d. Direct-drive alternator is permissible in lieu of belt drive. Belt drive shall be capable of handling the rated capacity of the alternator with no detrimental effect on other driven components.
- e. Refer to SBMI Design Objectives, *January 1985* edition (See Appendix), for estimating required alternator capacity.

3. Wiring

a. General—All wiring shall conform to current applicable recommended practices of the Society of Automotive Engineers (See Appendix).

(1) All wiring shall use a standard color and number coding and each chassis shall be delivered with a wiring diagram that coincides with the wiring of the chassis.

b. Chassis manufacturer shall install a readily accessible terminal strip or plug on the body side of the cowl, or at an accessible location in the engine compartment of vehicles designed without a cowl, that shall contain the following terminals for the body connections:

- (1) Main 100 amp body circuit
- (2) Tail lamps
- (3) Right turn signal
- (4) Left turn signal
- (5) Stop lamps
- (6) Back up lamps
- (7) Instrument panel lights (rheostat controlled by head lamp switch)

4. Circuits

a. An appropriate identifying diagram (color and number coded) for electrical circuits shall be provided to the body manufacturer for distribution to the end user.

Engine Fire Extinguishers

1. Manufacturer may provide an automatic fire extinguisher system in the engine compartment on all gasoline-powered lift buses.

Exhaust System

1. Exhaust pipe, muffler, and tailpipe shall be outside the bus body compartment and attached to chassis.
2. Tailpipe shall be constructed of a corrosion-resistant tubing material at least equal in strength and durability to 16-gauge steel tubing.
3. Tailpipe shall (a) extend beyond rear axle, at least 5 inches beyond chassis frame and be mounted outside of chassis frame rail at end point or (b) may extend to the left side of the

bus, behind the driver's compartment, outboard of chassis center line and shall terminate from chassis center line as follows:

Type A vehicles —Manufacturer's standard
Type B, C, and D vehicles —48.5 inches

(c) On Type C and D buses, no exhaust pipe shall exit beneath an emergency exit or fuel fill.

4. Exhaust system on a gas-powered chassis shall be properly insulated from fuel tank connections by a securely-attached metal shield at any point where it is 12 inches or less from tank or tank connections.
5. Muffler shall be constructed of corrosion-resistant material.
6. The exhaust system on vehicles equipped with a power lift unit may be routed to the left of the right frame rail to allow for the installation of a power lift unit on the right side of the vehicle.

Fenders, Front, Type C Vehicles

1. Total spread of outer edges of front fenders, measured at fender line, shall exceed total spread of front tires when front wheels are in straight-ahead position.
2. Front fenders shall be properly braced and free from any body attachments.

Frame

1. Frame or equivalent shall be of such design and strength characteristics as to correspond at least to standard practice for trucks of the same general load characteristics which are used for highway service.
2. Any secondary manufacturer that modifies the original chassis frame shall guarantee the performance of workmanship and materials resulting from such modification.
3. Any frame modification shall not be for the purpose of extending the wheelbase.
4. Holes in top or bottom flanges or side units of the frame, and welding to the frame, shall not be permitted except as provided or accepted by chassis manufacturer.
5. Frame lengths shall be provided in accordance with SBMI Design Objectives, January 1985 edition. (See Appendix).

Fuel Tank

1. Fuel tank or tanks having a 30 gallon capacity with a 25 gallon actual draw shall be provided by the chassis manufacturer. The tank shall be filled and vented to the outside of the body, the location of which shall be so that accidental fuel spillage will not drip or drain on any part of the exhaust system.
2. No portion of the fuel system which is located to the rear of the engine compartment, except the filler tube, shall extend above the top of the chassis frame rail. Fuel lines shall be mounted to obtain maximum possible protection from the chassis frame.
3. Fuel filter with replaceable element shall be installed between fuel tank and engine.
4. Fuel tank installation shall be in accordance with SBMI Design Objectives, January 1985 edition (See Appendix).
5. If a tank size other than 30 gallon is supplied, location of front of tank and filler spout must remain as specified by SBMI Design Objectives, and also the actual draw capacity shall be 83% of the tank capacity. January 1985 edition (See Appendix).
6. The fuel tank on vehicles constructed with a power lift unit may be mounted on left chassis rail or behind rear wheels.
7. Auxiliary tank may be added in accordance with SBMI Design Objectives, January 1985 edition.
8. Installation of alternative fuel tanks shall comply with all applicable fire codes.

Governor

1. An engine governor is permissible. When it is desired to limit road speed, a road speed governor should be installed.
2. When engine is remotely located from driver, governor shall be installed to limit engine speed to maximum revolutions per minute recommended by engine manufacturer, or a tachometer shall be installed so the engine speed may be known to driver.

Heating System, Provision For

1. The chassis engine shall have plugged openings for the purpose of supplying hot water for the bus heating system. The opening shall be suit-

able for attaching 3/4 inch pipe thread/hose connector. The engine shall be capable of supplying water having a temperature of at least 170° Fahrenheit at a flow rate of 50 pounds/per minute at the return end of 30 feet of one inch inside diameter automotive hot water heater hose. (SBMI Standard No. 001—Standard Code for Testing and Rating Automotive Bus Hot Water Heating and ventilating Equipment.)

Horn

1. Bus shall be equipped with horn or horns of standard make with each horn capable of producing a complex sound in bands of audio frequencies between 250 and 2,000 cycles per second and tested per Society of Automotive Engineers Standard J—377 (See Appendix).

Instruments And Instrument Panel

1. Chassis shall be equipped with the following instruments and gauges. (Lights in lieu of gauges are not acceptable except as noted):
 - a. Speedometer.
 - b. Odometer which will give accrued mileage (to seven digits) including tenths of miles.
 - c. Voltmeter.
 - (1) Ammeter with graduated charge and discharge with ammeter and its wiring compatible with generating capacities is permitted in lieu of voltmeter.
 - d. Oil-pressure gauge.
 - e. Water temperature gauge.
 - f. Fuel gauge.
 - g. Upper beam headlight indicator.
 - h. Brake indicator gauge (vacuum or air).
 - (1) Light indicator in lieu of gauge permitted on vehicles equipped with hydraulic-over-hydraulic brake system.
 - i. Turn signal indicator.
 - j. Glow-plug indicator light where appropriate.
2. All instruments shall be easily accessible for maintenance and repair.
3. Instruments and gauges shall be mounted on the instrument panel in such a manner that each is clearly visible to the driver while in a normal

seated position in accordance with SBMI Design Objectives, January 1985 edition (See Appendix).

4. Instrument panel shall have lamps of sufficient candlepower to illuminate all instruments and gauges and shift selector indicator for automatic transmission.

Oil Filter

1. Oil filter with replaceable element shall be provided and connected by flexible oil lines if it is not of built-in or engine-mounted design. Oil filter shall have a capacity of at least one (1) quart.

Openings

1. All openings in floorboard or firewall between chassis and passenger-carrying compartment, such as for gearshift selector and parking brake lever, shall be sealed.

Passenger Load

1. Actual gross vehicle weight (GVW) is the sum of the chassis weight, plus the body weight, plus the driver's weight, plus total seated pupil weight.
 - a. For purposes of calculation, the driver's weight is 150 pounds.
 - b. For purposes of calculation, the pupil weight is 120 pounds per pupil.
2. Actual Gross Vehicle Weight (GVW) shall not exceed the chassis manufacturer's gross vehicle weight rating (GVWR) for the chassis.
3. Manufacturer's gross vehicle weight rating shall be furnished in duplicate (unless more are requested) by manufacturers to the state agency having pupil transportation jurisdiction. State agency shall, in turn, transmit such ratings to each other state agency responsible for development or enforcement of state standards for school buses.

Power And Gradeability

1. Gross Vehicle Weight (GVW) shall not exceed 185 pounds per published net horse-power of the engine at the manufacturer's recommended maximum number of revolutions per minute.

Retarder System (optional)

1. Retarder system, if used, shall maintain the speed of the fully loaded school bus at 19.0 mph or 30 km/hr on a 7% grade for 3.6 miles or 6km.

Shock Absorbers

1. Bus shall be equipped with front and rear double-action shock absorbers compatible with manufacturer's rated axle capacity at each wheel location.

Springs

1. Capacity of springs or suspension assemblies shall be commensurate with chassis manufacturer's gross vehicle weight rating.
2. If rear springs are used, they shall be of progressive type.

Steering Gear

1. Steering gear shall be approved by chassis manufacturer and designed to assure safe and accurate performance when vehicle is operated with maximum load and at maximum speed.
2. If external adjustments are required, steering mechanism must be accessible to accomplish same.
3. No changes shall be made in steering apparatus which are not approved by chassis manufacturer.
4. There shall be a clearance of at least 2 inches between steering wheel and cowl, instrument panel, windshield, or any other surface.
5. Power steering is required and shall be of the integral type with integral valves.
6. The steering system shall be designed to provide means for lubrication of all wear-points, if wear-points are not permanently lubricated.

Tires And Rims

1. Tires and rims of proper size and tires with load rating commensurate with chassis manufacturer's gross vehicle weight rating shall be provided.
2. Dual rear tires shall be provided on Type B, Type C, and Type D school buses.
3. All tires on any given vehicle shall be of the same size and the load range of said tires shall meet or

exceed the gross axle weight rating as required by FMVSS 120.

4. If the vehicle is equipped with a spare tire and rim assembly, it shall be of the same size as those mounted on the vehicle.
5. If tire carrier is required, it shall be suitably mounted in an accessible location outside the passenger compartment.

Transmission

1. When an automatic transmission is used, it shall provide for not less than three forward speeds and one reverse speed. The shift selector, if applicable, shall provide a detente between each gear position when the gear selector quadrant and shift selector are not steering column mounted.
2. When a manual transmission is used, second gear and higher shall be synchronized except when incompatible with engine power. A minimum of three forward speeds and one reverse speed must be provided.

Turning Radius

1. Chassis with a wheelbase of 264 inches or less shall have a right and left turning radius of not

more than 42 1/2 feet, curb to curb measurement.

2. Chassis with a wheelbase of 265 inches or more shall have a right and left turning radius of not more than 44 1/2 feet, curb to curb measurement.

Undercoating

1. Chassis manufacturer, or agent thereof, shall coat the undersides of steel or metallic-constructed front fenders with rust-proofing compound for which compound manufacturers have issued notarized certification of compliance to chassis builder that compound meets or exceeds all performance and qualitative requirements of paragraph 3.4 of Federal Specification TT-C-520B (See Appendix) using modified test.

Weight Distribution

1. Weight distribution of a fully-loaded bus on a level surface shall be such as not to exceed the manufacturer's front gross axle rating and rear gross axle weight rating.

BUS BODY STANDARDS

Aisle

1. All emergency doors shall be accessible by a 12-inch minimum aisle. Aisle shall be unobstructed at all times by any type barrier or seat.
2. The seat backs shall be slanted sufficiently to give aisle clearance of 15 inches at tops of seat backs.

Back-up Warning Alarm

1. An automatic audible alarm may be installed behind the rear axle and shall comply with the Society of Automotive Engineers published Backup Alarm Standards (SAE 994b) a minimum of 97 dBA for rubber tired vehicles. (See Appendix)

Battery

1. Battery is to be furnished by chassis manufacturer.
2. When the battery is mounted as described in Chassis Standard (page 6), the body manufacturer shall securely attach the battery on a slide-out or swing-out tray in a closed, vented compartment in the body skirt, so that the battery is accessible for convenient servicing from the outside. Battery compartment door or cover shall be hinged at front or top, and secured by an adequate and conveniently-operated latch or other type fastener.

Bumper (Front)

1. On a type "D" school bus, if the chassis manufacturer does not provide a bumper, it shall be provided by the body manufacturer. The bumper will conform to the standards in the chassis section.

Bumper (Rear)

1. Bumper shall be of pressed steel channel or equivalent material, at least 3/16-inch thick, and shall be a minimum of 8 inches wide (high) on Type A buses, and shall be a minimum of 9 1/2" wide (high) on Types B, C, and D buses, and of sufficient strength to permit being pushed by another vehicle without permanent distortion.

2. Bumper shall be wrapped around back corners of the bus. It shall extend forward at least 12 inches, measured from the rear-most point of body at the floor line.

3. Bumper shall be attached to the chassis frame in such a manner that it may be easily removed. It shall be so braced as to withstand impact from a rear or side impact. It shall be so attached as to discourage hitching of rides.

4. Bumper shall extend at least one inch beyond rear-most part of body surface measured at the floor line.

5. An energy-absorbing rear bumper may be used, providing a self-restoring energy absorbing bumper system so attached to prevent the hitching of rides and of sufficient strength to:

- a. Permit pushing by another vehicle without permanent distortion to the bumper, chassis, or body;

- b. Withstand repeated impacts without damage to the bumper, chassis, or body according to the following FMVSS performance standards.

- (1) 2.0 MPH fixed barrier impact (FMVSS cart & barrier test)

- (2) 4.0 MPH corner impact at 30 degrees (Part 581, CFR Title 49)

- (3) 5.0 MPH center impact (Part 581, CFR Title 49)

- c. The manufacturer of the energy-absorbing system shall provide evidence from an approved test facility (capable of performing the above FMVSS test) that their product conforms to the above.

6. Tow eyes or hooks may be furnished on the rear and attached so they do not project beyond the rear bumper. Tow eyes or hooks attached to the chassis frame, shall be furnished by either the chassis or body manufacturer. The installation shall be in accordance with the chassis manufacturer's specifications.

Bumper, Front—Energy Absorbing (Optional)

1. An energy-absorbing front bumper may be used, providing its design shall incorporate a self-

restoring energy absorbing system of sufficient strength to:

- a. Push another vehicle of similar GVW without permanent distortion to the bumper, chassis, or body; and
- b. Withstand repeated impacts without damage to the bumper, chassis, or body according to the following performance standards:
 - (1) 7.5 MPH fixed-barrier impact (FMVSS cart & barrier test)
 - (2) 4.0 MPH corner impact at 30 degrees (Part 581, CFR Title 49)
 - (3) 20.0 MPH into parked passenger car (class B, C, and D buses of 18,000 lbs GVW or more)
- c. The manufacturer of the energy-absorbing system shall provide evidence from an approved test facility (capable of performing the above FMVSS tests) that their product conforms to the above.

Ceiling

See Insulation and Interior, Body Standard

Certification

1. Body manufacturer will, upon request, certify to the state agency having pupil transportation jurisdiction, that their product meets minimum standards on items not covered by certification issued under requirements of the National Traffic and Motor Vehicle Safety Act.

Chains (tire)

See Wheelhousing Body Standard

Color

1. The school bus body shall be painted National School Bus Yellow. (See Appendix)
2. The body exterior paint trim, bumper, lamp hoods, emergency door, lettering, and arrow shall be black.
3. The roof of the bus may be painted white extending down to the drip rails on the sides of the body except that front and rear roof caps shall remain National School Bus Yellow.

4. Reflective material may be installed on the bus. Material, if used, shall be automotive engineering grade or better, meeting initial reflectance values in FHWA FP-85 and retaining at least 50% of those values for a minimum of six years. Reflective materials and markings, if used, shall include any or all of the following:

- a. Front and/or rear bumper: may be marked diagonally 45 degrees down to centerline of pavement with 2" wide strips of non-contrasting reflective material. (See Appendix)
- b. Rear of bus body: may be marked with a strip of reflective National School Bus Yellow material no greater than 2" in width to be applied to the back of the bus, extending from the left lower corner of the "SCHOOL BUS" lettering, across to left side of the bus, then vertically down to the top of the bumper, across the bus on a line immediately above the bumper to the right side, then vertically up to a point even with the strip placement on the left side, and concluding with a horizontal strip terminating at the right lower corner of the "SCHOOL BUS" lettering. (See Appendix)
- c. "SCHOOL BUS" signs: may be marked with reflective National School Bus Yellow material comprising background for lettering of the front and/or rear "SCHOOL BUS" signs. (See Appendix)
- d. Sides of bus body: may be marked with reflective National School Bus Yellow Material at least 6" but not more than 12" in width, extending the length of the bus body and located (vertically) as close as practicable to the beltline. (See Appendix)
- e. NOTE: Reflectivity of stop signal arm is to be addressed under Stop Signal Arm Section. Signs, if used, placed on the rear of the bus relating to school bus flashing signal lamps or railroad stop procedure may be of reflective material as specified by each state.

Construction

1. Construction shall be of prime commercial quality steel or other metal or material with strength at least equivalent to all-steel, as certified by the bus body manufacturer.
2. Construction shall be reasonably dustproof and watertight.

3. Body joints present in that portion of the Type A school bus body furnished exclusively by the body manufacturer shall conform to the performance requirements of FMVSS 221, "School Bus Body Joint Strength." This does not include the body joints created when body components are attached to components furnished by the chassis manufacturer.
4. Type A school bus bodies shall be equipped with restraining barriers conforming to FMVSS 222 "School Bus Passenger Seating—Crash Protection," Sections S 5.2 and S 5.3.

Defrosters

1. Defrosting and defogging equipment shall direct a sufficient flow of heated air onto the windshield, the window to the left of the driver and the glass in the viewing area directly to the right of the driver to eliminate frost, fog and snow. The defroster unit shall have a separate blower motor in addition to the heater motors. Defrosting and defogging equipment for Type A vehicles shall direct a sufficient flow of heated air onto the windshield to eliminate frost, fog, and snow.
2. The defrosting system shall conform to Society of Automotive Engineers' Standards J381 and J382. (See Appendix)
3. The defroster and defogging system shall be capable of furnishing heated outside ambient air except that part of the system furnishing additional air to the windshield, entrance door and stepwell may be of the recirculating air type.
4. Auxiliary fans are not considered defrosting or defogging systems.
5. Portable heaters may not be used.

Doors

1. Service Door
 - a. Service door shall be in the driver's control, and designed to afford easy release and provide a positive latching device on manual operating doors to prevent accidental opening. When a hand lever is used, no part shall come together that will shear or crush fingers.
 - b. Service door shall be located on the right side of the bus, opposite and within direct view of driver.

- c. Service door shall have a minimum horizontal opening of 24 inches and a minimum vertical opening of 68 inches. Type A vehicles shall have a minimum opening area of 1200 square inches.
- d. Service door shall be a split type, sedan type, or jack-knife type. (Split-type door includes any sectioned door which divides and opens inward or outward.) If one section of a split-type door opens inward and the other opens outward, the front section shall open outward.
- e. Lower, as well as upper door panels, shall be of approved safety glass. Bottom of each lower glass panel shall not be more than 10 inches from the top surface of bottom step. Top of each upper glass panel shall not be more than 6 inches from the top of the door. Type A vehicles shall have an upper panel (windows) of safety glass with an area of at least 350 - square inches.
- f. Vertical closing edges on split type or folding type entrance doors shall be equipped with flexible material to protect the children's fingers. Type A vehicles may be equipped with chassis manufacturers' standard entrance door.
- g. There shall be no door to left of driver on Type C or D vehicles. Type A and B vehicles may be equipped with chassis manufacturers' standard door.
- h. All doors shall be equipped with padding at the top edge of each door opening. Pad shall be at least 3 inches wide and 1 inch thick and extend the full width of the door opening.

Emergency Exits

1. Emergency Door:
 - a. Emergency door shall be hinged on right side if in rear end of bus and on front side if on left or right side of bus. It shall open outward and be labeled inside to indicate how it is to be opened. If double emergency doors are used on Type A vehicles, they shall be hinged on the outside edge and shall have a 3-point fastening device. A device shall be used that holds the door open to prevent the emergency door from closing during emergencies and school bus evacuation drills.
 - b. Upper portion of the emergency door shall be equipped with approved safety glazing, ex-

posed area of which shall be at least than 400 square inches. The lower portion of the rear emergency door on Type B, C, and D vehicles shall be equipped with a minimum of 350 square inches of approved safety glazing.

- c. There shall be no steps leading to an emergency door.
- d. Words "EMERGENCY DOOR," in letters at least 2 inches high, shall be placed at top of or directly above the emergency door or on the door in the metal panel above the top glass, both inside and outside of the bus.
- e. The emergency door shall be equipped with padding at top edge of each door opening. Padding shall be at least 3 inches wide and 1 inch thick, and extend the full width of the door opening.
- f. The side emergency door, if installed, must meet the requirements as set forth in FMVSS 217, S 5.4.2.1,(b), regardless of its use with any other combination of emergency exits. (See Appendix)
- g. There shall be no obstruction higher than 1/4 inch across the bottom of any emergency door opening.

2. Emergency Exits

- a. Type A, B, C, and D vehicles shall be equipped with emergency exits in the following capacity vehicles:

0 to 22 Passenger = 1 emergency exit per side and 1 roof hatch

23 to 65 Passenger = 1 emergency exit per side and 2 roof hatches

66 and above Passenger = 2 emergency exits per side and 2 roof hatches

Each emergency exit shall comply with FMVSS 217. These emergency exits are in addition to the rear emergency door or exit.

In addition to side and rear emergency exits, doors, or windows, one or more roof hatch(s) may be installed, provided they meet all requirements specified in FMVSS 217.

In addition to the audible warning required on emergency doors by FMVSS 217 additional emergency exits may also be like protected.

Emergency Equipment

1. Fire Extinguishers

- a. The bus shall be equipped with at least one pressurized, dry chemical fire extinguisher complete with hose, to meet Underwriters Laboratories, Inc., approval. Extinguisher must be mounted in a bracket, located in the driver's compartment and readily accessible to the driver and passengers. A pressure gauge shall be mounted on the extinguisher and easily read without moving the extinguisher from its mounted position.
- b. The fire extinguisher shall be of a type approved by Underwriters Laboratories, Inc., (See Appendix) with a total rating of 2A10BC or greater. The operating mechanism shall be sealed with a type of seal which will not interfere with the use of the fire extinguisher.

2. First-Aid Kit

- a. Bus shall have a removable, moistureproof and dust-proof first-aid kit mounted in an accessible place within driver's compartment. This place shall be marked to indicate its location.
- b. Suggested contents include:
 - 2 - 1" x 2 1/2 yards adhesive tape rolls
 - 24 - sterile gauze pads 3"x 3"
 - 100 - 3/4" x 3" adhesive bandages
 - 8 - 2" bandage compress
 - 10 - 3" bandage compress
 - 2 - 2" x 6' sterile gauze roller bandages
 - 2 - non-sterile triangular bandages approximately 40" x 36" x 54" with 2 safety pins
 - 3 - sterile gauze pads 36" x 36"
 - 3 - sterile eye pads
 - 1 - rounded-end scissors
 - 1 - pair latex gloves
 - 1 - mouth-to-mouth airway

3. Body Fluid Clean-up Kit

- a. Each bus shall have a removable and moisture proof body fluid clean-up kit. It shall be properly mounted and identified as a body fluid clean-up kit.

4. Warning Devices

- a. Each school bus shall contain at least three (3) reflectorized triangle road warning devices mounted in an accessible place in the driver's compartment. The mounting location in

Type A vehicles is optional. These devices must meet requirements in FMVSS 125.

Floors

1. Floor in underseat area, including tops of wheel-housing, driver's compartment and toeboard, shall be covered with rubber floor covering or equivalent, having a minimum overall thickness of .125 inch.
2. Floor covering in aisles shall be of aisle-type rubber or equivalent, wear-resistant and ribbed. Minimum overall thickness shall be .187 inch measured from tops of ribs.
3. Floor covering must be permanently bonded to floor and must not crack when subjected to sudden changes in temperature. Bonding or adhesive material shall be waterproof and shall be of a type recommended by the manufacturer of floor-covering material. All seams must be sealed with waterproof sealer.
4. Provide a screw-down plate to access fuel tank sending unit that is secured and insulated.

Heaters

1. Heater shall be of hot-water type and/or combustion type.
2. If only one heater is used, it shall be of fresh-air or combination fresh-air and recirculation type.
3. If more than one heater is used, additional heaters may be of recirculating air type.
4. The heating system shall be capable of maintaining the temperature throughout the bus of not less than 40° Fahrenheit during average minimum January temperature as established by the U.S. Department of Commerce, Weather Bureau, for the area in which the vehicle is to be operated.
5. All heaters installed by body manufacturers shall bear a name plate that shall indicate the heater rating in accordance with SBMI Standard No. 001, with said plate to be affixed by the heater manufacturer which shall constitute certification that the heater performance is as shown on the plate. (See Appendix)
6. Heater hoses shall be adequately supported to guard against excessive wear due to vibration. The hoses shall not dangle or rub against the chassis or sharp edges and shall not interfere with or restrict the operation of any engine func-

tion. Heater hose shall conform to Society of Automotive Engineers' Standard J20c. Heater lines on the interior of bus shall be shielded to prevent scalding of the driver or passengers. (See Appendix)

7. Each hot water system installed by a body manufacturer shall include one shut-off valve in the pressure line and one shut-off valve in the return line with both valves at or near the engine in an accessible location.
8. There shall be a water flow regulating valve installed in the pressure line for convenient operation by the driver while seated.
9. All combustion type heaters shall be in compliance with current Federal Motor Carrier Safety Regulations.
10. Accessible bleeder valves shall be installed in an appropriate place in the return lines of body company-installed heaters to remove air from the heater lines.
11. Access panels shall be provided to make heater motors, cores, and fans readily accessible for service. Outside access panel may be provided for the driver's heater.

Identification

1. Body shall bear words "SCHOOL BUS" in black letters at least 8 inches high on both front and rear of body or on signs attached thereto. Lettering shall be placed as high as possible without impairment of its visibility. Lettering shall conform to "Series B" of Standard Alphabets for highway signs and may be on a reflective area of 12" x 36" meeting U.S. Department of Transportation FHWA-FP-85 Type 2A or Type 3A.
2. Only signs and lettering approved by state law or regulation, limited to name of owner or operator and any marking necessary for identification, shall appear on sides of bus.

Inside Height

1. Inside body height shall be 72 inches or more, measured metal to metal, at any point on longitudinal center line from front vertical bow to rear vertical bow. Inside body height of Type A buses shall be 62 inches or more.

Insulation

1. Ceiling and walls shall be insulated with proper material to deaden sound and to reduce vibration to a minimum. If thermal insulation is specified, it shall be fire-resistant and approved by Underwriters Laboratories, Inc. (See Appendix)
2. If floor insulation is required, it shall be either 5 ply nominal 19/32 inches thick plywood, or a material of equal or greater strength and insulation R value and it will equal or exceed properties of exterior-type softwood plywood, C-D Grade as specified in standard issued by U.S. Department of Commerce. (See Appendix.) When plywood is used, all exposed edges shall be sealed.

Interior

1. Interior of bus shall be free of all unnecessary projections, which include luggage racks and attendant hand rails, likely to cause injury. This standard requires inner lining on ceilings and walls. If ceiling is constructed to contain lapped joints, forward panel shall be lapped by rear panel and exposed edges shall be beaded, hemmed, flanged, or otherwise treated to minimize sharp edges.
2. The driver's area forward of the foremost padded barriers will permit the mounting of required safety equipment and vehicle operation equipment.
3. Every school bus shall be constructed so that the noise level taken at the ear of the occupant nearest to the primary vehicle noise source shall not exceed 85 dBA when tested according to the procedure found in the Appendix. (Noise Test Procedure)

Lamps And Signals

1. Interior lamps shall be provided which adequately illuminate aisle and stepwell. Stepwell light shall be illuminated by a service door operated switch, to illuminate only when headlights and clearance lights are on and service door opened.
2. Body instrument panel lights shall be controlled by an independent rheostat switch.

3. School Bus Alternately Flashing Signal Lamps:

- a. Definition: School bus red signal lamps are alternately flashing lamps mounted horizontally both front and rear, intended to identify a vehicle as a school bus and to inform other users of the highway that such vehicle is stopped on the highway to take on or discharge school children.
- b. School bus yellow signal lamps are alternately flashing lamps mounted horizontally both front and rear, intended to identify a vehicle as a school bus and to inform other users of the highway that such vehicles are about to stop on the highway to take on or discharge school children.

- (1) Bus shall be equipped with two red lamps at rear of vehicle and two red lamps at the front of vehicle.
- (2) In addition to the four red lamps described in (No. 1) above, four amber lamps shall be installed as follows: one amber lamp shall be located near each red signal lamp, at same level, but closer to vertical centerline of bus; system of red and amber signal lamps shall be wired so that amber lamps are energized manually, and red lamps are automatically energized (with amber lamps being automatically de-energized) when stop signal arm is extended or when bus service door is opened.
- (3) Area around lens of each alternately flashing signal lamp and extending outward approximately 3 inches shall be black in color. In installations where there is no flat vertical portion of body immediately surrounding entire lens of lamp, a circular or square band of black approximately 3 inches wide, immediately below and to both sides of the lens, shall be black in color on body or roof area against which signal lamp is seen (from distance of 500 feet along axis of vehicle).

Visors or hoods, black in color, with a minimum depth of four (4) inches may be provided.
- (4) Red lamp shall flash at any time the stop signal arm is extended.
- (5) All flashers for alternately flashing red and amber signal lamps shall be enclosed in the body in a readily accessible location.

4. Turn Signal and Stop/Tail Lamps:

- a. Bus body shall be equipped with rear turn signal lamps that are at least seven (7) inches in diameter or if a shape other than round, a minimum 38 square inches of illuminated area and meet specifications of the Society of Automotive Engineers. (See Appendix.) These signals must be connected to the chassis hazard wiring switch to cause simultaneous flashing of turn signal lamps when needed as vehicular traffic hazard warning. Turn signal lamps are to be placed as wide apart as practical and their centerline shall be approximately eight (8) inches below the rear window. Type A conversion vehicle lamps must be at least 21 square inches in lens area and be in manufacturer's standard color.
- b. Buses shall be equipped with four combination red stop/tail lamps:
 - (1) Two combination lamps with a minimum diameter of seven (7) inches, or if a shape other than round, a minimum 38 square inches of illuminated area shall be mounted on the rear of the bus just inside the turn signals.
 - (2) Two combination lamps with a minimum diameter of 4 inches, or if a shape other than round, a minimum 12 square inches of illuminated area shall be placed on the rear of the body between the beltline and the floor line. Rear license plate lamp may be combined with one lower tail lamp. Stop lamps shall be activated by the service brakes and shall emit a steady light when illuminated. Type A buses with bodies supplied by chassis manufacturer may have manufacturer's standard stop and tail lamps.
5. On all buses equipped with a monitor for the front and rear lamps of the school bus, the monitor shall be mounted in full view of the driver. If the full circuit current passes through the monitor, each circuit shall be protected by a fuse or circuit breaker against any short circuit or intermittent shorts.
6. A white flashing strobe light may be installed on the roof of a school bus not to exceed 1/3 the body length forward from the rear of the roof edge. Light shall have a single clear lens emitting light 360 degrees around its vertical axis and may not extend above the roof more than maximum legal height. A manual switch and a pilot

light must be included to indicate when light is in operation.

Metal Treatment

1. All metal used in construction of bus body shall be zinc-coated or aluminum-coated or treated by equivalent process before bus is constructed. Included are such items as structural members, inside and outside panels, door panels and floor sills. Excluded are such items as door handles, grab handles, interior decorative parts and other interior plated parts.
2. All metal parts that will be painted shall be, in addition to above requirements, chemically cleaned, etched, zinc-phosphate-coat and zinc-chrome or epoxy primed or conditioned by equivalent process.
3. In providing for these requirements, particular attention shall be given lapped surfaces, welded connections of structural members, cut edges punched or drilled hole areas in sheet metal, closed or box sections, unvented or undrained areas and surfaces subjected to abrasion during vehicle operation.
4. As evidence that above requirements have been met, samples of materials and sections used in construction of the bus body, when subjected to 1,000-hour salt spray test as provided for in latest revision of ASTM Standard B-117 "Standard Method of Salt Spray (Fog) Testing" (See Appendix), shall not lose more than 10 percent of material by weight.

Mirrors

1. Interior Mirror: Interior mirror shall be either clear view laminated glass or clear view glass bonded to a backing which retains the glass in the event of breakage. Mirror shall have rounded corners and protected edges. Type A bus shall have a minimum of a 6" x 16" mirror and Type B, C, and D buses shall have a minimum of a 6" x 30" mirror.
2. Exterior Mirror: Each school bus shall be equipped with a systems of exterior mirrors (as defined in FMVSS III.)
 - a. Rear Vision Mirror: The mirror system shall be capable of providing a view along the left and right sides of the vehicle which will provide the driver with a view of the rear tires at ground level, a minimum distance of 200 feet to the rear of the bus and at least 12 feet

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perpendicular to the side of the bus at the rear axle line. at a distance of 32 feet back from the front bumper

- b. Crossview Mirror System: The crossview mirror system shall provide the driver with indirect vision of an area at ground level from the front bumper forward and the entire width of the bus to a point where the driver can see by direct vision. The cross view system shall also provide the driver within direct vision of the area at ground level around the left and right front corners of the bus to include the tires and service entrance on all types of buses to a point where it overlaps with the rear vision mirror system.
- c. This system of mirrors shall be easily adjustable but be rigidly braced so as to reduce vibration.

Mounting

- 1. Chassis frame shall support rear body cross member. Bus body shall be attached to chassis frame at each main floor sill, except where chassis components interfere, in such manner as to prevent shifting or separation of the body from the chassis under severe operating conditions.
- 2. Insulation material shall be placed at all contact points between body and chassis frame on Type B, C, and D buses, and shall be so attached to the chassis frame or body that it will not move under severe operating conditions.

Overall Length

- 1. Overall length of bus shall not exceed 40 feet.

Overall Width

- 1. Overall width of bus shall not exceed 102 inches excluding accessories.

Rub Rails

- 1. There shall be one rub rail located on each side of bus approximately at seat level which shall extend from rear side of entrance door completely around bus body (except emergency door) to point of curvature near outside cowl on left side.
- 2. There shall be one rub rail located approximately at floorline which shall cover the same longitudinal area as upper rub rail, except at wheelhousing, and shall extend only to radii of right and left rear corners.

- 3. Both rub rails shall be attached at each body post and all other upright structural members.
- 4. Both rub rails shall be 4 inches or more in width in their finished form, shall be of 16-gauge steel or suitable material of equivalent strength, and shall be constructed in corrugated or ribbed fashion.
- 5. Both rub rails shall be applied outside body or outside body posts. Pressed-in or snap-on rub rails do not satisfy this requirement. For Type A and B vehicles using chassis manufacturer's body, or for Type C and D buses using rear luggage or rear engine compartment, rub rails need not extend around rear corners.

Seat Belt For Driver

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

Seat And Crash Barriers

- 1. All seats shall have minimum depth of 15 inches all seat backs on Type B, C, and D buses shall be a minimum of 24 inches high and a minimum 20 inches from seating reference point.
- 2. In determining seating capacity of bus, allowable average rump width shall be:
 - a. 13 inches where 3-3 seating plan is used.
 - b. 15 inches where 3-2 seating plan is used.
- 3. All restraining barriers and passenger seats shall be covered with a material that meets the criteria contained in the School Bus Seat Upholstery Fire Block Test. (See Appendix, Vehicle)
- 4. Each seat leg shall be secured to the floor by a minimum of two (2) bolts, washers, and nuts.
- 5. All seat frames attached to the seat rail shall be fastened with two (2) bolts, washers and nuts or flange-headed nuts.
- 6. Driver's seat shall be of the highback type with a minimum seat back adjustment of 15 degrees and with a head restraint to accommodate a 95 percentile adult male (95 percentile adult male as defined in FMVSS 208). The driver's seat

shall be secured with nuts, bolts, and washers or flanged-headed nuts.

Steering Wheel

See Chassis Standard

Steps

1. First step at service door shall not be less than 10 inches and not more than 14 inches from the ground, based on standard chassis specifications.
 - a. Type D vehicles shall have the first step at the service door 12 to 16 inches from the ground.
2. Step risers shall not exceed a height of 10 inches. When plywood is used on a steel floor or step, the riser height may be increased by the thickness of the plywood.
3. Steps shall be enclosed to prevent accumulation of ice and snow.
4. Steps shall not protrude beyond the side body line.
5. Grab handle not less than 20 inches in length shall be provided in unobstructed location inside doorway.

Step Treads

1. All steps, including floor line platform area, shall be covered with 3/16-inch rubber floor covering or other materials equal in wear and abrasion resistance to top grade rubber.
2. Metal back of tread, minimum 24-gauge cold roll steel, shall be permanently bonded to ribbed rubber; grooved design shall be such that said grooves run at 90-degree angles to long dimension of step tread.
3. Three-sixteenth-inch ribbed step tread shall have a 1 1/2-inch white nosing as an integral piece without any joint.
4. Rubber portion of step treads shall have the following characteristics:
 - a. Special compounding for good abrasion resistance and high coefficient of friction.
 - b. Flexibility so that it can be bent around a 1/2-inch mandrel both at 130° Fahrenheit and 20° Fahrenheit without breaking, cracking, or crazing.
 - c. Show a durometer hardness 85 to 95.

Stirrup Steps

1. There shall be at least one folding stirrup step or recessed foothold and suitably located handles on each side of the front of the body for easy accessibility for cleaning the windshield and lamps except when windshield and lamps are easily accessible from the ground. Steps are permitted in or on the front bumper, in lieu of the stirrup steps, if the windshield and lamps are easily accessible for cleaning from that position.

Stop Signal Arm

1. There shall be a stop signal arm installed on the left outside of the body. It shall meet the applicable requirements of Society of Automotive Engineers J1133 (See Appendix). Arm shall be of an octagonal shape with white letters and border and a red background and may be of a reflective material meeting U.S. Department of Transportation FHWA FP-85 Type 2A or Type 3A. Flashing lamps (incandescent or strobe) in stop arm shall be connected to the alternately red flashing signal lamp circuits. The stop signal arm shall be vacuum, electric or air operated.

Storage Compartment

1. If tools, tire chains and/or tow chains are carried on the bus, a container of adequate strength and capacity may be provided. Such storage container may be located either inside or outside the passenger compartment but, if inside, it shall have a cover (seat cushion may not serve as this purpose) capable of being securely latched and be fastened to the floor convenient to either the service or emergency door.

Sun Shield

1. Interior adjustable transparent sun shield not less than 6" X 30" for Types B, C, and D vehicles, and not less than 6" x 16" for Type A vehicles with a finished edge shall be installed in a position convenient for use by driver.

Tailpipe

1. Tailpipe shall extend to but not beyond perimeter of the body or the bumper.
2. Tailpipe shall exit to left of emergency exit door in rear of vehicle, Type A and B as manufacturer's standard.

Traction Assisting Devices

1. Where required or used, sanders shall:
 - a. Be of hopper cartridge-valve type.
 - b. Have metal hopper with all interior surfaces treated to prevent condensation of moisture.
 - c. Be of at least 100 pound (grit) capacity.
 - d. Have cover on filler opening of hopper, which screws into place, sealing unit airtight.
 - e. Have discharge tubes extending to front of each rear wheel under fender.
 - f. Have no-clogging discharge tubes with slush-proof, non-freezing rubber nozzles.
 - g. Be operated by electric switch with telltale pilot light mounted on instrument panel.
 - h. Be exclusively driver controlled.
 - i. Have gauge to indicate hopper needs refilling when it is down to one-quarter full.
2. Automatic traction chains may be installed.

Undercoating

1. Entire underside of bus body, including floor sections, cross member and below floor line side panels, shall be coated with rust-proofing compound for which compound manufacturer has issued notarized certification of compliance to the bus body builder that compound meets or exceeds all performance and qualitative requirements of paragraph 3.4 of Federal Specification TT-C-520b (See Appendix) using modified test procedures* for following requirements:
 - a. Salt spray resistance-pass test modified to 5% salt and 1000 hours.
 - b. Abrasion resistance-pass.
 - c. Fire resistance-pass.

*Test panels to be prepared in accordance with paragraph 4.6.12 of TT-C-520b with modified procedure requiring that test be made on a 48-hour air cured film at thickness recommended by compound manufacturer.

2. Undercoating compound shall be applied with suitable airless or conventional spray equipment to recommend film thickness and shall show no evidence of voids in cured film.

Ventilation

1. Auxiliary fans, if used, shall meet the following requirements:
 - a. Fan for left side shall be placed in a location where it can be adjusted to its maximum effectiveness.
 - b. Fan for the right side shall be in a location where it can be adjusted to its maximum effectiveness.
 - c. These fans shall be a nominal six-inch diameter.
 - d. Fan blades shall be covered with a protective cage. Each of these fans shall be controlled by a separate switch.
2. Body shall be equipped with a suitably controlled ventilating system of sufficient capacity to maintain proper quantity of air under operating conditions without opening of windows except in extremely warm weather.
3. Static-type non-closeable exhaust ventilation shall be installed in low-pressure area of roof.

Wheelhousing

1. The wheelhousing opening shall allow for easy tire removal and service.
2. Wheelhousing shall be attached to floor sheets in such a manner to prevent any dust, water or fumes from entering the body. Wheelhousing shall be constructed of at least 16-gauge steel.
3. The inside height of the wheelhousing above the floor line shall not exceed 12 inches.
4. The wheelhousing shall provide clearance for installation and use of tire chains on single and dual (if so equipped) power-driving wheels.
5. No part of a raised wheelhousing shall extend into the emergency door opening.

Windows

1. Each full side window shall provide an unobstructed emergency opening of at least 9 inches high and 22 inches wide, obtained by lowering window.
2. Push-out type, split-sash windows may be used.

Windshield Washers

1. A windshield washer system shall be provided.

Windshield Wipers

1. A windshield wiping system, two-speed or more, shall be provided.
2. The wipers shall be operated by one or more air or electric motors of sufficient power to operate wipers. If one motor is used, the wipers shall work in tandem to give full sweep of windshield.

Wiring

1. All wiring shall conform to current standards of Society of Automotive Engineers. (See Appendix)
2. Circuits:
 - a. Wiring shall be arranged in circuits as required with each circuit protected by a fuse or circuit breaker. A system of color and number coding shall be used and an appropriate identifying diagram shall be provided to the end user along with the wiring diagram provided by the chassis manufacturer. *A system of color and number coding shall be used on buses manufactured after January 1, 1992. The following body interconnecting circuits shall be color coded as noted:*

FUNCTION	COLOR
Left Rear Directional Light	Yellow
Right Rear Directional Light	Dark Green
Stoplights	Red
Back-up Lights	Blue
Taillights	Brown
Ground	White
Ignition Feed, Primary Feed	Black

The color of cables shall correspond to SAE J 1128.

- b. Wiring shall be arranged in at least six regular circuits as follows:
 - (1) Head, tail, stop (brake) and instrument panel lamps.

- (2) Clearance and stepwell lamps (stepwell lamp shall be actuated when service door is opened).

- (3) Dome lamp.

- (4) Ignition and emergency door signal.

- (5) Turn signal lamps.

- (6) Alternately flashing signal lamps.

- c. Any of the above combination circuits may be subdivided into additional independent circuits.

- d. Whenever heaters and defrosters are used, at least one additional circuit shall be installed.

- e. Whenever possible, all other electrical functions (such as sanders and electric-type windshield wipers) shall be provided with independent and properly protected circuits.

- f. Each body circuit shall be coded by number or letter on a diagram of circuits and shall be attached to the body in readily accessible location.

3. The entire electrical system of the body shall be designed for the same voltage as the chassis on which the body is mounted.

4. All wiring shall have an amperage capacity equal to or exceeding the designed load. All wiring splices are to be done at an accessible location and noted as splices on wiring diagram.

5. A body wiring diagram of easily readable size shall be furnished with each bus body or affixed in an area convenient to the electrical accessory control panel.

6. The body power wire shall be attached to a special terminal on the chassis.

7. All wires passing through metal openings shall be protected by a grommet.

8. Wires not enclosed within body shall be fastened securely at intervals of not more than 18 inches. All joints shall be soldered or joined by equally effective connectors.

SPECIALLY EQUIPPED SCHOOL BUS STANDARDS

Introduction

The specifications in this section are intended to be supplementary to specifications in the chassis and body sections. In general, specially equipped buses should meet all the requirements of those preceding sections plus those listed in this section. Since it is recognized by the entire industry that the field of special transportation is characterized by varied needs for individual cases and by a rapidly emerging technology for meeting these needs, a flexible, common-sense approach to the adoption and enforcement of specifications for these vehicles is prudent.

By federal regulation, buses, including school buses, are defined as vehicles designed to carry 11 or more (including the driver). Vehicles with 10 or fewer passenger positions (including the driver) cannot be certified as buses. For this reason, the federal vehicle classification Multipurpose Passenger Vehicle, or MPV, must be used by manufacturers for these vehicles in lieu of the classification School Bus. In determining passenger capacity, wheelchair positions are counted as passenger positions. This classification system, while requiring compliance with a less stringent set of Federal Standards for MPV's does not preclude state or local agencies or these National Standards from requiring compliance of school bus-type MPV's with the more stringent Federal Standards for school buses.

The following standards address modifications as they pertain to school buses that, with standard seating arrangement prior to modification, would accommodate more than 10 persons. If by addition of a power lift, mobile seating device positions or other modifications, the capacity is reduced such that vehicles become MPV's, the intent of these standards is to have these vehicles be required to meet the same standards they would have had to meet prior to such modifications, and such MPV's are included in all references to school buses and requirements for school buses which follow.

General Requirements

1. School buses designed for transporting students with special transportation needs shall comply with National Standards and with Federal Motor Vehicle Safety Standards applicable to their GVWR category.
2. Any school bus to be used for the transportation of children who are confined to a wheelchair or

other mobile positioning device, or who require life support equipment which prohibits use of the regular service entrance, shall be equipped with a power lift, unless a ramp is needed for unusual circumstances related to passenger needs.

Aisles

1. All school buses equipped with a power lift shall provide a 30" aisle leading from wheelchair position to at least one emergency door and the lift area.

Communications

1. All school buses should be equipped with an electronic voice communication system.

Glazing

1. Tinted glazing may be installed in all doors, windows and windshield consistent with federal, state, and local regulations.

Identification

1. Buses with power lifts used for transporting physically handicapped students shall display universal handicapped symbols located below the windowline. Such emblems shall be white on blue background, shall not exceed 12 inches in size, and shall be of a high-intensity reflectorized material meeting U.S. Department of Transportation FHWA FP-85 Standards.

Power Lift

1. Power lift shall be located on the right side of the bus body, but confined within the bus body when not extended.
2. Lifting mechanism and platform shall be able to lift minimum weight of eight hundred (800) pounds. Lift platform shall have minimum 30" clear usable width, unobstructed by required handrail. The minimum clear length of the platform between the outer edge barrier and inner edge shall be 40".
3. When the platform is stowed, it shall be secured by a method built into the lift system.

4. Controls shall be provided that enable the operator to activate the lift mechanism from either inside or outside of the bus. There shall be a means of preventing the lift platform from falling while in operation due to a power failure or a single component mechanical failure.
5. Power lifts shall be so equipped with a manual backup system for use in the event of a power failure.
6. Lift travel shall allow the lift platform to rest securely on the ground.
7. Outboard platform edge and sides shall be designed to restrain wheelchairs or other mobile seating devices from slipping or rolling off the platform. Platform outer edge barrier shall be able to be automatically or manually lowered when the platform is at ground level, but shall not be equipped with any type of latch which could result in a lowered barrier when the platform is above ground level.
8. Platform shall be equipped with at least one handrail for security. Handrail shall be approximately 25-34" in height and minimum 18" in length and designed to fold when in stowed position so as not to add to overall lift projection into the vehicle.
9. A self-adjusting, skid resistant plate shall be installed on the outer edge of the platform to minimize the incline from the lift platform to the ground level. This plate, if so designed, may also suffice as the restraining device described in item 7 above. The lift platform must be skid resistant.
10. A circuit breaker shall be installed between power source and lift motor if electrical power is used.
11. Lift design shall prevent excessive pressure that could damage the lift system when the platform is fully lowered or raised, or that could jack the vehicle.
12. The lift mechanism shall be designed to prevent folding or stowing of the lift when the lift platform is occupied.

Ramps

1. When a power lift system is not adequate to load and unload students having special and unique needs, a ramp device may be installed.
 - a. If a ramp is used, it shall be of sufficient strength and rigidity to support the special

device, occupant, and attendant(s). It shall be equipped with a protective flange on each longitudinal side to keep special device on the ramp.

- b. Floor of ramp shall be of non-skid construction.
- c. Ramp shall be of weight and design, and equipped with handle(s), to permit one person to put ramp in place and return it to its storage place.

Regular Service Entrance

1. Steps

- a. First step at service door shall be not less than 10 inches and not more than 14 inches from ground, based on standard chassis specifications.

(1) Type D vehicle shall have the first step at the service door 12 to 16 inches from the ground.

- b. Step risers shall not exceed a height of 10 inches. When plywood is used on a steel floor or step, the riser height may be increased by the thickness of the plywood.
 - c. On power-lift equipped vehicles, step shall be the full width of the stepwell, excluding the thickness of doors in open position.
 - d. Steps shall be enclosed to prevent accumulation of ice and snow.
 - e. Steps shall not protrude beyond side body line.
2. Grab handle not less than 20 inches in length shall be provided in unobstructed location inside doorway.

Restraining Devices

1. Seat frames may be equipped with attachments or devices to which belts, restraining harnesses or other devices may be attached. Attachment framework or anchorage devices, if installed, shall conform with FMVSS 210.

Seating Arrangements

1. Flexibility in seat spacing to accommodate special devices shall be permitted to meet passenger requirements. All seating shall be forward-facing.

Securement System For Mobile Seating

Device/Occupant

1. Body shall be designed for positioning and securement of mobile seating devices and occupants in a forward-facing orientation. Securement system hardware and attachment points for the forward-facing system shall be provided.
2. Mobile seating device securement system shall utilize four-point tie-downs, with a minimum of two body floor attachment points located at the rear of the space designated for the mobile seating device and a minimum of two body floor attachment points at the front of the space.
3. A Type 2 occupant securement system shall provide for securement of the occupant's pelvic lap area and upper torso area.
4. The mobile seating device/occupant securement system shall be successfully dynamically sled-tested at a minimum impact speed/force of 30 mph/20 G's. The dynamic test shall be performed using system components and hardware (including attachment hardware) which are identical to the final installation in type, configuration, and positioning. The body structure at the attachment points may be simulated for the purpose of the sled test, but the simulated structure used to pass the sled test may not exceed the strength of the attachment structure to be used in the final body installation. The mobile seating device used for test purposes shall be a 150 pound powered wheelchair and the occupant shall be a 50th percentile male test dummy as specified in FMVSS Part 571.208. Measurements shall be made on the test dummy during the test for head acceleration, upper thorax acceleration, and upper leg compressive force. These measurements shall not exceed the upper limits set forth in FMVSS Part 571.208, S6.1.2, 6.1.3, and 6.1.4. The test dummy shall be retained within the securement system throughout the test and forward excursion shall be such that no portion of the test dummy's head or knee pivot points passes through a vertical transverse plane intersecting the forward-most point of the floor space designated for the mobile seating device. All hardware shall remain positively attached throughout the test and there shall be no failure of any component. Each mobile seating device belt assembly including attachment hardware and anchorages shall be capable of withstanding a force of not less than 2,500 pounds. This will provide equal mobile seating device securement when subjected to forces generated

by forward, rear or side impact.

- a. The belt materials at each space designated for the mobile seating device and the occupant restraint system shall be similar in size and fabric.
5. Occupant securement belt assemblies and anchorages shall also be certified to meet the requirements of FMVSS 209 and 210.
6. The occupant securement system must be designed to be attached to the bus body either directly or in combination with the mobile seating device securement system, by a method which prohibits the transfer of weight or force from the mobile seating device to the occupant in the event of an impact.
7. All securement system attachments or coupling hardware not permanently attached shall be a "positive latch" type to prohibit accidental disconnecting.
8. All attachment or coupling systems designed to be connected or disconnected frequently shall be accessible and operable without the use of tools or other mechanical assistance.
9. All securement system hardware and components shall be free of sharp or jagged areas and shall be of a non-corrosive material or treated to resist corrosion.
10. The occupant securement system shall be made of materials which do not stain, soil, or tear an occupant's clothing.
11. No mobile seating device securement system hardware shall be placed so that a mobile seating device can be placed blocking access to lift door.
12. The following information shall be provided with each vehicle equipped with a securement system:
 - a. Detailed instructions, including a parts list, regarding installation and use of the system.
 - b. Detailed instructions, including a diagram, regarding the proper placement and positioning of the system, including correct belt angles.

Special Light

1. Lights shall be placed inside the bus to sufficiently illuminate the lift door area.

Special Service Entrance

1. Power lift equipped bodies shall have a special service entrance to accommodate the power lift.
2. The special service entrance and door shall be located on the right side of the bus and shall be designed so as not to obstruct the regular service entrance.
3. The opening may extend below the floor through the bottom of the body skirt. If such an opening is used, reinforcements shall be installed at the front and rear of the floor opening to support the floor and give the same strength as other floor openings.
4. A drip molding shall be installed above the opening to effectively divert water from entrance.
5. Door posts and headers from entrance shall be reinforced sufficiently to provide support and strength equivalent to the areas of the side of the bus not used for special service entrance.

Special Service Entrance Doors

1. A single door or double doors may be used for the special service entrance.
2. All doors shall have positive fastening devices to hold doors in the open position.
3. All doors shall be weather sealed.
4. When manually-operated dual doors are provided, the rear door shall have at least a one-point fastening device to the header. The forward-mounted door shall have at least three-point fastening devices. One shall be to the header, one to the floor line of the body, and the other shall be into the rear door. The door and hinge mechanism shall be of a strength that is greater than or equivalent to the emergency exit door.
5. Door materials, panels and structural strength shall be equivalent to the conventional service and emergency doors. Color, rub rail exten-

sions, lettering and other exterior features shall match adjacent sections of the body.

6. Each door shall have windows set in rubber compatible within one-inch of the lower line of adjacent sash. Glazing shall be of same type and tinting (if applicable) as standard fixed glass in other body locations.
7. Door(s) shall be equipped with a device that will actuate an audible or flashing visible signal located in the driver's compartment when door(s) is not securely closed and ignition is in "on" position.
8. A switch shall be installed so that the lifting mechanism will not operate when the lift platform door(s) is closed.
9. Special service entrance doors shall be equipped with padding at the top edge of the door opening. Pad shall be at least three inches wide and one inch thick and extend the full width of the door opening.

Support Equipment And Accessories

1. Portable student support equipment or special accessory items shall be secured at the mounting location to withstand a pulling force of five times the weight of the item, or shall be retained in an enclosed, latched compartment. Such special items, if used, shall meet specifications and/or include the following:
 - a. Belt Cutter—Bus shall contain a belt cutter for use in emergencies, including evacuations. Belt cutter should be designed to eliminate the possibility of the operator or others being cut during use, and should be secured in a location of safekeeping such as a first-aid kit.
 - b. Crutches, Walkers, Canes, and Similar Devices— To be secured as specified above.
 - c. Medical Support Equipment—includes oxygen bottles, ventilators, and other items. These items shall be secured as specified above.

Appendix, Vehicle

Society Of Automotive Engineers, Inc.
400 Commonwealth Drive
Warrendale, PA 15096
(412)776-4841

School Bus Manufacturers Institute
7508 Ben Avon Road
Bethesda, MD 20817
(301) 229-8841

Underwriters Laboratories, Inc.
333 Pfingsten Rd.
Northbrook, Illinois 60062
(708)272-8800

Product Standard PSI-66
U.S. Department Of Commerce
14th And E Streets
Washington, D.C. 20230

American National Standards Institute
1430 Broadway Ave.
New York, NY 10018
(212) 354-3300

American Society For Testing And Materials
1916 Race Street
Philadelphia, PA 19103-1187
(215) 299-5400

Federal Specification TT-C-520b
Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402
(202) 783-3238

National School Bus Yellow

The color known as National School Bus Yellow was designated as such by the 1939 National Conference on School Bus Standards. The National Bureau of Standards of the U.S. Department of Commerce assisted in developing this color and its colorimetric specifications.

At the 1980 Conference, the colors in use were reviewed. A color standard was selected, slightly different from above, and specific tolerances were chosen. These tolerances will ensure a continuity of appearance from bus to bus, and within the same bus when different elements are finished or refinished at different times.

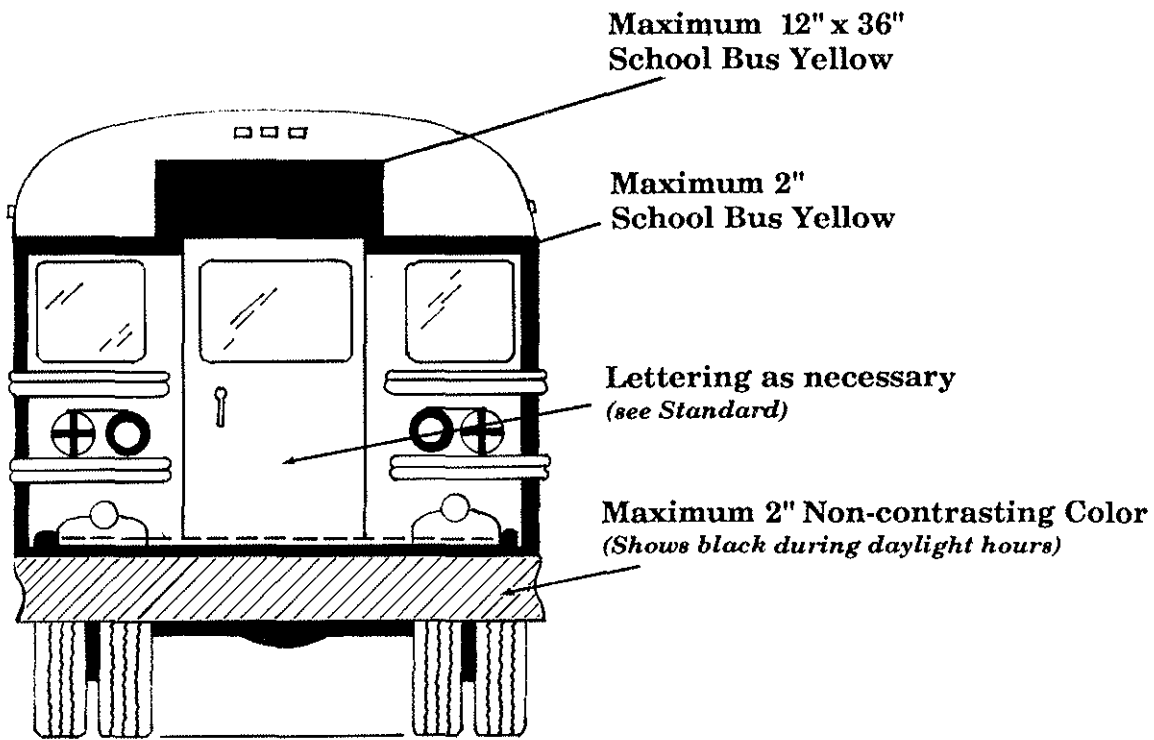
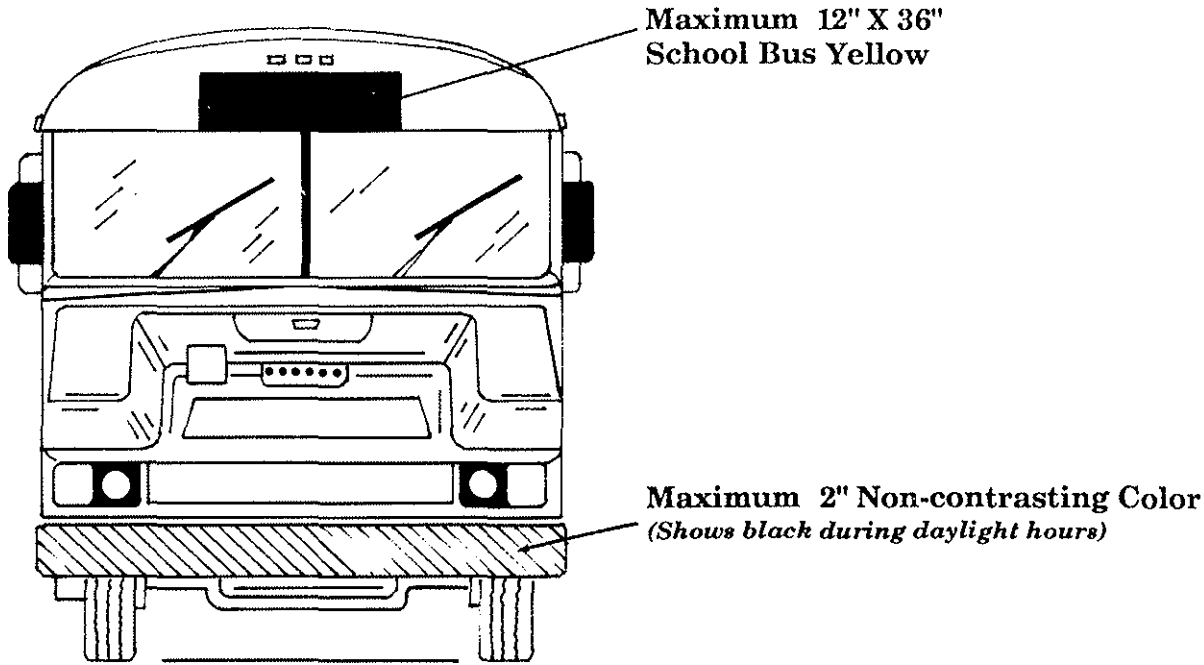
When it was determined that the use of lead and chromium in paint was a health hazard, the National Bureau of Standards of the U.S. Department of Commerce assisted the S.B.M.I. in developing their color standard No. SBMI-008, which further defined the tolerances to permit better definition of the color. Specifications for the standard color, with light and dark tolerances are shown below in tabular form.

Colorimetric (CIE) Data

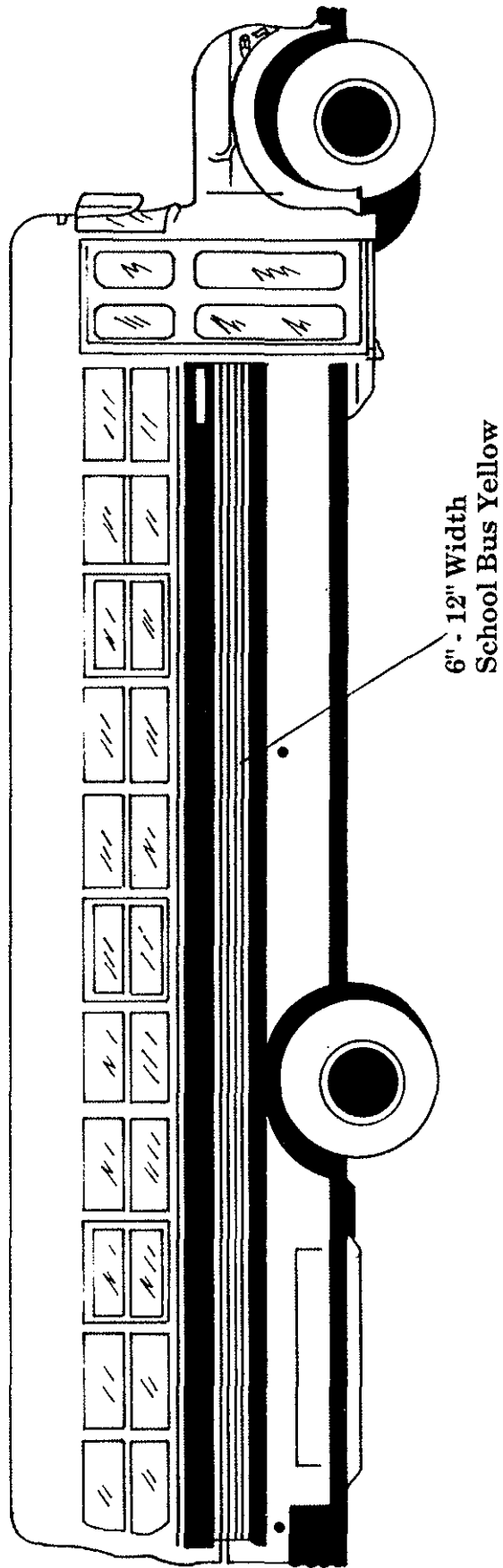
Description	Reflectance	Chromaticity	
	Y	X	Y
Centroid	41.5%	.5139	.4434
V+ Light Limit	42.9%	.5139	.4427
V- Dark Limit	39.8%	.5133	.4422
H+ Green Limit	41.6%	.5123	.4368
H-Red Limit	41.7%	.5168	.4489
C+ Vivid Limit	41.5%	.5188	.4457
C- Weak Limit	41.5%	.5095	.4405

Noise Test Procedure

- A. The vehicle is located so that no other vehicle or signboard, building, hill, or other large reflecting surface is within 50 feet of the occupant's seating position.
- B. All vehicle doors, windows, and ventilators are closed.
- C. All power-operated accessories are turned off.
- D. The driver is in his normal seated driving position and the person conducting the test is the only other person in the vehicle.
- E. A sound level meter is used that is set at the "A-weighting fast" meter response and meets the requirements of:
 1. The American National Standards Institute, Standard ANSI S1.4-1971. "Specifications for Sound Level Meters," for Type 1 Meters; or
 2. The International Electrotechnical Commission (IEC), Publication No. 179 (1973). "Precision Sound Level Meters".
- F. The microphone is located so that it points vertically upward 6 inches to the right and directly in line with and on the same plane as the occupant's ear adjacent to the primary noise source.



PLACEMENT OF REFLECTIVE MARKINGS



6" - 12" Width
School Bus Yellow

School Bus Seat Upholstery Fire Block Test

A. Test Chamber

Cross Section

The suggested test chamber is same cross section as bus body in which seats are used with rear section on each end. If bus section is not used, cross section to be 91" +/- 1" in width x 75" +/- 3" in height. There shall be a door, which does not provide ventilation, in the center of each end of the test chamber. The doors shall be 38" +/- 3" in width and 53" +/- 3" in height and include a latch to keep the doors closed during the test. See Figure 1.

Length

Length of chamber shall allow 3 rows of seats at the minimum spacing recommended by the installer or required by Federal Motor Vehicle Safety Standards. See Figure 1, Detail A.

In order that different types of seats may be tested in the same chamber, a length tolerance of plus 45" is allowed.

Ventilation

One ventilation opening shall be in each end of the test chamber and shall be 325 square inches +/- 25 square inches. The bottom of the opening shall be 30" +/- 3" above the chamber floor. Ventilation openings shall be on the same side of the test chamber. See Figure 1.

There shall be no ventilation openings along the length of the test chamber.

A forced air ventilation system may not be used.

Baffles shall be used to prevent wind from blowing directly into the ventilation openings.

Camera View Area

An opening covered with glass shall be provided at the midpoint of the chamber length for camera viewing. The opening shall allow the camera to view the seat parallel to the seat width. See Figure 1.

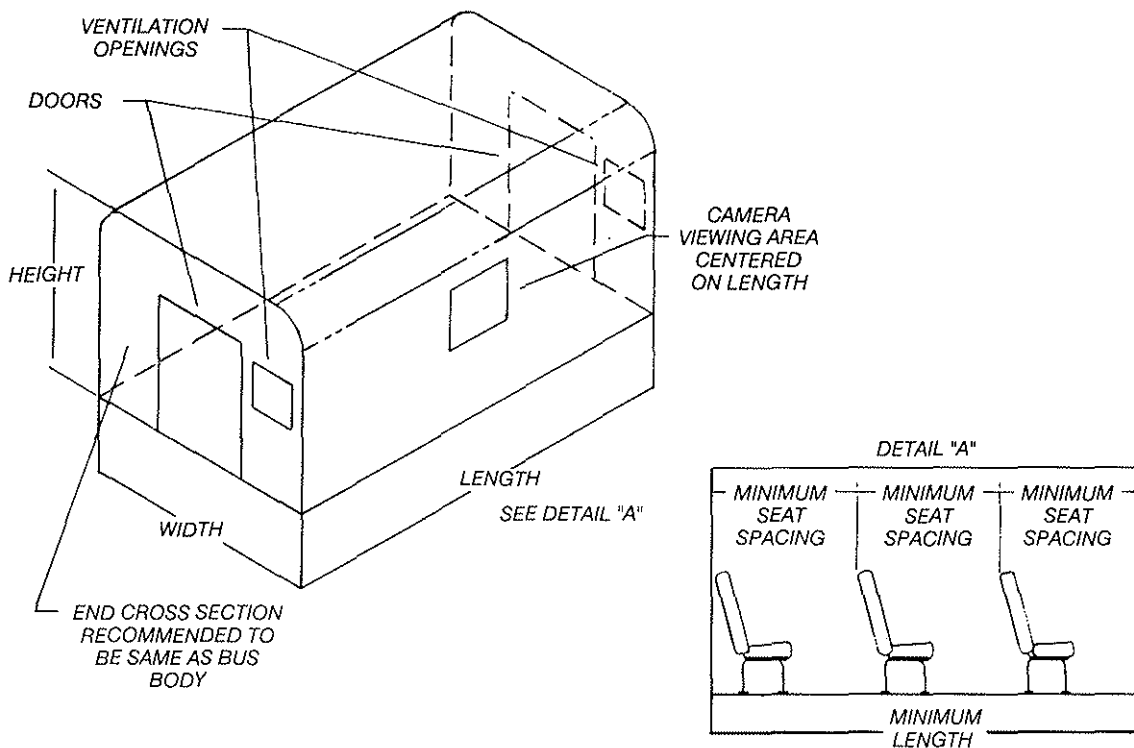


FIGURE 1

B. Test Sample

Sample shall be fully-assembled seat.

Record the weight of all padding and upholstery prior to assembly. Record the weight of the fully-assembled seat.

C. Ignition Source

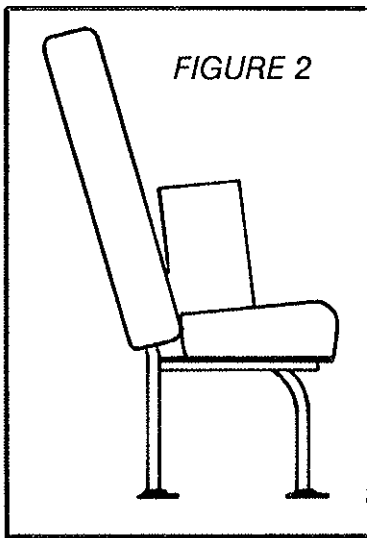
A paper grocery bag whose dimensions are approximately 7" x 11" x 18" is used to contain double sheets of newsprint (black print only, approximately 22" x 28"). The total combined weight of bag and newspaper shall be 7 oz. +/- .5 oz.

D. Test Procedure

1. Install 3 seats in test chamber at minimum spacing per installer recommendation or FMVSS requirement. Seats shall be perpendicular to the dimension indicated as "length" in Figure 1. Install so that seat frames will not fall during test. Seat width shall be determined so that maximum passenger capacity per row (2 seats) for the seat style shall be tested.
2. For each test, position ignition source in the following positions outlined. Widest seat in the center row shall be tested.

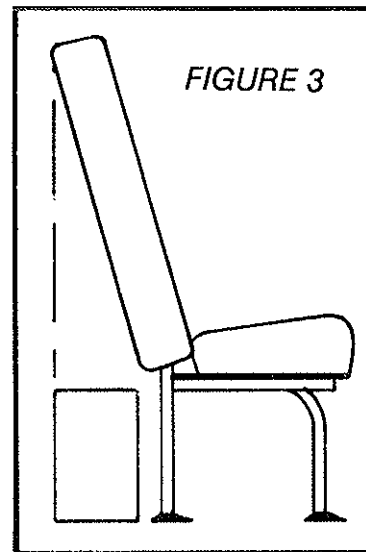
Position A.

Position ignition source with 18" dimension in contact with seat cushion and touching seat back. Center bag on top of cushion. See Figure 2.



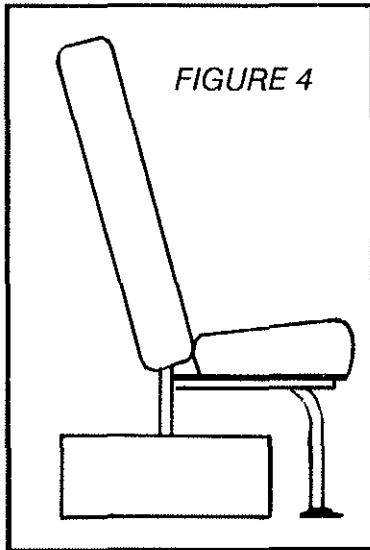
Position B.

Position ignition source on floor behind seat with 18" dimension on floor and parallel to seat width centered on width so that rear of bag does not extend beyond rear of seat back. See Figure 3.



Position C.

Position ignition source on floor on aisle side of seat with 18" dimension on floor and perpendicular to seat width touching seat leg with centerline of bag at center of seat back. See Figure 4.



3. A wooden match shall be used to light the ignition source. Time the test beginning where the ignition source is on fire until all flame is out.
4. After each ignition source position test, weigh seat assembly including loose materials on the seat. Do not include loose material which has fallen off the seat onto the floor.

E. Performance Criteria

For each ignition source position test, the seat tested must meet all of the following criteria. A new seat specimen may be used for each ignition source position test.

1. Maximum time from ignition to flameout shall be 8 minutes.
2. Flame shall not spread to any other seat with ignition source in Position A and Position C.
3. Weight loss may not exceed 10% of pretest weight of padding and upholstery.

NATIONAL STANDARDS FOR SCHOOL BUS OPERATIONS

Introduction

The success of any school transportation operation depends largely upon the quality of performance and degree of dedication displayed by those involved. The recommendations outlined herein are designed to assist school administrators and private operators in understanding the needs of their particular pupil transportation programs.

I. Administration

A. The state agency(ies) responsible for pupil transportation shall provide the following:

1. Leadership in the development of a comprehensive pupil transportation program for state-wide application.
2. A State Director of Pupil Transportation with the staff and other resources necessary for optimal job performance.
3. A clear, concise pupil transportation policy.
4. A cost accounting system for all expenditures in the area of pupil transportation.
5. A state-wide management information system to accommodate pupil transportation data, e.g., costs, information gleaned from the uniform school bus accident reporting criteria, manpower availability, etc.
6. Promotion of a pupil transportation safety program utilizing community, school districts, school bus contractors, legislation, media, law enforcement and state agencies concerned with pupil transportation.
7. A manual or handbook for local pupil transportation supervisors, school administrators and private contractors containing detailed instructions for implementing the state's pupil transportation laws, regulations and policies.
8. A manual or handbook for each school bus driver containing the state pupil transportation regulations and recommended safety practices.
9. A comprehensive school bus driver program for both pre-service and in-service instruc-

tion which includes classroom and behind-the-wheel instruction.

10. A manual or handbook for school bus maintenance personnel.
 11. Workshops, seminars and/or conferences for all pupil transportation personnel.
 12. Encouragement for state institutions of higher learning to provide undergraduate and graduate courses acceptable for certification purposes in pupil transportation, operation and safety.
 13. Comprehensive safety and ridership curricula for pupil passengers.
 14. Annual visits to local school systems to evaluate transportation systems and provide necessary direction.
 15. Bus and equipment standards that would be conducive to safer and more efficient bus performance.
 16. Require proper school bus preventive maintenance and ongoing maintenance programs.
 17. Coordination with other agencies having responsibility for pupil transportation services, including the uniform school bus accident reporting criteria.
 18. A comprehensive education program to train instructors of school bus drivers.
- B. Local administrators shall:
1. Comply with federal and state pupil transportation laws, regulations and policy.
 2. Become involved in: pupil transportation operations within their jurisdiction, including participating in training programs for all transportation personnel; review of school bus routes; provisions for supervision of loading and unloading areas at or near the school; investigation and reporting of accidents and other transportation problems; and evaluation of the pupil transportation system. (Suggested action to be taken during the following observation of a school bus route appears as Appendix A.)

3. Provide resource material and establish, as an integral part of the school curriculum, instruction in passenger safety, including student participation in periodic emergency evacuation drills, which comply with state requirements and/or the Federal Highway Safety Program Guideline 17.
4. Provide continuous supervision of loading and unloading areas at or near the school. Annually evaluate route pickup and drop-off locations for safety.
5. Provide adequate supervision for pupils whose bus schedules necessitate their early arrival or late departure from school.
6. Promote public understanding of, and support for, the school transportation program in general.
7. Develop and implement local pupil transportation policies and regulations, including those for special education.
8. Provide transportation personnel the opportunity for growth in job related activities.

II. Pupil Transportation Director

A. State Pupil Transportation Director:

1. Specific duties include, but are not limited to:
 - a. Assist in the implementation, interpretation and understanding of pupil transportation laws, regulations and policies.
 - b. Manage the state's pupil transportation program which includes the ability to plan, budget and forecast requirements for the operation.
 - c. Supervise the preparation of manuals, handbooks and information for distribution to local transportation personnel and private operators.
 - d. Provide assistance and direction to local school administrators as may be necessary upon request.
 - e. Assist in evaluation of state and local operations, including bus routes, and provide recommendations in areas of policy and procedures.
 - f. Plan, direct and participate in safety education for pupil transportation personnel.

- g. Assist local personnel in planning and conducting pupil safety education programs.
- h. Require and maintain appropriate reports and records.
- i. Assist/consult with groups involved in pupil transportation safety.
- j. Represent the interests of the pupil transportation industry.
- k. Work cooperatively with school transportation associations, school districts and private contractors to promote school bus safety and efficiency.

B. Local Pupil Transportation Director and/or Private Operator:

1. Specific duties include, but are not limited to:
 - a. Provide assistance in planning, budgeting and forecasting for the pupil transportation system.
 - b. Assist in school site selection and plant planning.
 - c. Provide, when appropriate, chassis, body and related equipment procurement.
 - d. Develop and implement a plan for equipment preventative and on-going maintenance, and procurement.
 - e. Recruit, select, instruct and supervise personnel.
 - f. Route and schedule buses for safe, efficient and economical transportation service.
 - g. Assist in the development and implementation of pupil safety education programs.
 - h. Work with administrators, teachers, transportation personnel, students, parents and various public and private agencies to improve their knowledge and the quality of the transportation system.
 - i. Investigate and report accidents, when applicable, using the uniform school bus accident reporting criteria, as well as problems associated with the pupil transportation system.
 - j. Maintain records and prepare reports as required.

- k. Develop and supervise the implementation of an ongoing evaluation plan for the pupil transportation system.
- 2. The pupil transportation director and/or private operator shall have a basic understanding of the educational process and the corresponding role of transportation. Qualifications shall include:
 - a. A satisfactory driving record as revealed through checks with the National Driver Register service and the State Department of Motor Vehicles.
 - b. A satisfactory work history and a record free of criminal convictions. (The same type of checks should be made of the applicant who seeks employment as a school bus driver.) Suggestions as to how this information may be obtained appear in *Section III, Driver*.
 - c. An undergraduate degree or equivalent experience in one or more of the following fields of study:
 - (1) Education.
 - (2) Business administration.
 - (3) Management.
 - (4) Transportation or related field.
 - d. The ability to manage personnel and resources necessary to achieve a desired objective.
 - e. Basic knowledge of computers.
 - f. The ability to communicate effectively with school administrators, teachers, parents, students, bus drivers, law enforcement, etc.
- 3. The school transportation director and/or private operator shall receive formal instruction in pupil transportation management. This training shall include classroom work and field experience.

III. Driver

- A. Each employer shall make available to each school bus driver at the time of employment, a driver's manual or handbook. (See Section I) This manual shall include the following subjects:
 - 1. The state transportation laws, regulations and policy.

- 2. Motor vehicle rules and regulations applicable to school bus operation.
- 3. Vehicle operation and maintenance.
- 4. Procedures for the driver to perform when involved in an accident, when witnessing an accident and when involved with post-accident reporting.
- 5. Knowledge of basic first aid procedures. Local school systems shall supplement the state-produced manual with information on local policy and practices that may vary from, but should not conflict with, state level requirements.
- 6. Knowledge of pupil management.
- B. Procedures for selection of school bus drivers shall include:
 - 1. A proper legal application form on which pertinent information of a personal and occupational history is requested. (See Appendix B)
 - 2. A check of applicant's driving record. (Checks of the National Driver Register and files of the appropriate State Department of Motor Vehicles are considered essential in the case of an individual who is applying for a position as a school bus driver.)

Note: The applicant shall be told that these checks will be made before being asked to complete the application for employment. Establish criteria for rejection of those with unacceptable driving records.
 - 3. A check to determine if an applicant has a record of criminal convictions. Establish criteria for rejecting those with unacceptable records.
 - 4. One or more personal interviews. (A properly conducted interview can be one of the most important of the selection procedures.)
 - 5. A physical examination administered by a physician licensed in medicine or osteopathy. Tests for tuberculosis (TB), other communicable diseases, and drug/alcohol use should be included. The physical examination should be conducted annually or as required by state law, regulation or policy and at such times as the superintendent of schools may deem necessary.

6. A determination of educational attainment. A school bus driver applicant shall demonstrate the ability to follow detailed, written instructions and be able to accurately record and report data.
- C. Instructional program for school bus drivers:
1. Prior to transporting pupils, adequate classroom and behind-the-wheel training enabling the applicant to handle the vehicle in a safe and efficient manner shall be required. Such training shall be through a state approved pre-service program.
 2. An annual state approved in-service program shall be required.
- D. Behind-the-wheel instruction shall be given in the same type and size bus the driver will be operating. When a driver is expected to operate more than one size and type of vehicle, instruction shall be given in the specific handling characteristics of each. All instruction should include:
1. Familiarization with the bus and its equipment.
 2. Procedures for performing pre-trip and post-trip vehicle inspections.
 3. Techniques for safe driving, including mirror use and adjustment, smooth starts and stops, shifting, turning, and backing.
 4. Skills for defensive driving.
 5. Techniques for reference point driving.
 6. Procedures for loading and unloading pupils at the bus stops.
 7. Procedures for stopping at railroad crossings and other specialized driving requirements for school bus operations.
 8. Techniques to identify and avoid practices that result in driver related parts failure.
 9. Procedures for en-route emergencies, including driving emergencies, emergency evacuations (See Appendix N), and use of emergency equipment.
 10. Guidelines for safely running a route, including entrance to and departure from the bus garage and yard, following a route sheet and map, entrance to and departure from school zones, proper radio usage, mechanical difficulties and breakdown.
11. Procedure for fueling buses and handling/prevention of fuel spills.
- E. All school bus drivers shall be adequately prepared, both physically and mentally each day to perform certain duties. These shall include:
1. Operate the vehicle in a safe and efficient manner.
 2. Conduct thorough pre- and post-trip inspections of the vehicle and special equipment.
 3. Ensure the safety, welfare and orderly conduct of passengers while on the bus.
 4. Meet emergency situations in accordance with operating procedures.
 5. Communicate effectively with school staff, students, parents, law enforcement officials and the motoring public.
 6. Complete required reports.
 7. Complete required training programs successfully.
 8. Provide maximum safety for passengers during loading and unloading.
 9. Wear driver's seat belt whenever the bus is in motion.
- F. School bus drivers shall be evaluated at regular intervals. These evaluations may include:
1. Written tests
 2. Road performance checks
 3. Evaluation interviews
- IV. Bus Attendant**
- A. Regular bus attendants shall receive instruction in the following areas:
1. The bus and its equipment
 2. Use of emergency exits (See Appendix C)
 3. The safe loading and unloading of pupils at their stops
 4. Pupil management training
 5. The safety, welfare and orderly conduct of passengers while on the bus
 6. Emergency situations in accordance with operating procedures

7. Effective communications with school staff, students, bus drivers, parents, law enforcement officials and the motoring public
 8. The completion of required written reports
- B. Bus attendant, Special Education (see section, Special Education, Operation driver/attendant)

V. Maintenance And Service Personnel

- A. Adequate staff shall be employed to perform maintenance functions on a timely basis consistent with safe transportation practices.
- B. Instructional program for maintenance and service personnel:
1. The transportation system shall make available to their maintenance and service personnel the necessary maintenance and service publications for the equipment being serviced.
 2. The transportation system shall arrange, at regular intervals, for pre-service and in-service training for maintenance and service personnel. It shall also require or encourage maintenance personnel to attend state sponsored or approved workshops or training institutes.
 3. The training procedures shall include instruction in:
 - a. Preventive maintenance procedures.
 - b. Repair and/or installation procedures for each type of fleet vehicle and its varied equipment.
 - c. Unique procedures for equipment.
 - d. Inspection of the vehicle and its equipment.
 - e. Recovery procedures for vehicles involved in an accident or breakdown.
 - f. Preparation of maintenance records.
 - g. A planned parts and equipment stock.
 - h. Establishment of parts inventory control procedures.
 - i. Repair and installation of adaptive equipment.

VI. Pupil Management

Pupil management involves the combined effort of four distinct groups of individuals. An effective program must have the support of the school district, school bus driver, pupils and parents. Each school district should institute a comprehensive responsibility for the pupil's safety and well being, while protecting the interests of all others involved in the program.

A. School district responsibilities:

1. Establish the policies and procedures by which the program functions. These should include, yet not be limited to, the examples in Appendix D.
2. Establish pupil regulations governing the behavior and safety of pupils while on the bus and at the bus stop. (See Appendix E)
3. Institute and administer an instructional program that teaches pupils proper conduct and safety procedures. (See Appendix F)
4. Conduct a training program for school bus drivers to ensure that all policies, procedures, regulations and their enforcement are understood.
5. Ensure that parents receive written copies of the bus rules and regulations. Clearly establish their roles and obligations with respect to pupil promptness, attitude and behavior.
6. Initiate procedures to ensure open lines of communication and cooperation between school administrators, bus company officials, state agencies and bus drivers.
7. Provide training in pupil management skills that extends beyond the scope of enforcing rules and regulations.
8. Ensure that administrators provide back-up for discipline and stand behind drivers' reasonable enforcement actions.

B. Driver responsibilities:

1. Drivers shall be familiar with and abide by all rules, policies and procedures affecting pupil transportation.
2. Drivers need to establish rapport with each building administrator and work to ensure proper conduct and communications.
3. Drivers should establish proper rapport with pupils.

4. Drivers should instruct pupils in proper behavior, general procedures and evacuation drills. (See Appendix C)
5. Drivers should maintain order as a safety practice and stress the following points and procedures:
 - a. Minimize interior noise.
 - b. Control passenger movement.
 - c. Require an orderly entrance and exit.
 - d. Eliminate movement or potential movement of objects.
 - e. Require silence at railroad crossings.
 - f. Prohibit transportation of unauthorized materials.
6. Drivers should handle minor infractions through seat assignments or discussions with pupil passengers.
7. Drivers, in instances of serious or recurring misconduct, should follow school district policy pertaining to the misconduct and submit written reports on appropriate forms to administrators or other persons designated to deal with discipline problems. (See Appendix G)
8. Drivers should be aware that they represent the school system and the bus company, and should present a positive image in dress, language, and manner while on duty.
9. Drivers should be familiar with the assigned routes and designated school bus stops.

C. Pupil responsibilities:

Proper pupil behavior is important. The distraction of the driver can contribute to accidents. Pupils and parents should be made aware of and abide by reasonable regulations to enhance safety. The consequences of unacceptable behavior should be clearly understood. The following will protect the pupil's rights and maintain order on the bus:

1. Pupils must be aware that they are responsible for their actions and behavior.
2. Pupils must know what the rules and procedures are and abide by them.
3. Pupils must display proper respect for the rights and comfort of others.

4. Pupils should realize that school bus transportation can be denied if they do not conduct themselves properly.
5. Pupils should be aware that any driver distraction is potentially hazardous to their safety.

D. Parent/Guardian Responsibilities:

1. Become familiar with district rules and policies, regulations and principles of school bus safety.
2. Assist children in understanding safety rules and encourage them to abide by them.
3. Recognize their responsibilities for the actions of their children.
4. Support safe riding practices and reasonable discipline efforts.
5. Teach children proper procedures for safely crossing the highway before boarding and after leaving the bus. (See Appendix H-A, H-B)
6. Support procedures for emergency evacuation, and procedures in emergencies as set up the school district. (See Appendix C)
7. Respect the rights and privileges of others.
8. Communicate safety concerns to school administrators.
9. Monitor bus stops, if possible.
10. Support all efforts to improve school bus safety.

VII. Procedures

A. Policies and guidelines:

The responsible state agency and the local school district should have clear and concise policies and guidelines for the operation of their pupil transportation programs. These are important for two reasons: First, they have the effect of law when laws or regulations do not specifically address a situation. Secondly, they serve as the rule book for persons charged with the administration of transportation services within the district.

Once established, these policies and guidelines become the basis for development of operating procedures. This allows decisions about operational details to be made at the administrative level rather than by the school board. These

policies and guidelines should be precise, in writing, and cover the following topics:

1. A statement of philosophy.
 2. A definition of the agency's goals and objectives.
 3. Procedures for determining eligibility for transportation.
 4. A description of all types of transportation provided.
 5. The days on which service will be available.
 6. School starting and closing time
 7. Administrative responsibilities related to program service.
 8. Essential routing constraints.
 9. The extent of special transportation service.
 10. A compilation of pupil rules and regulations.
 11. Provisions for the use of contract transportation and/or charter buses.
 12. Acceptable purchasing procedures.
 13. Desired limits of insurance coverage.
 14. The essentials of an accident prevention program including the uniform school bus accident reporting criteria.
 15. Communicate procedures between administrators and parents, and administrators and bus company or drivers, including student discipline procedure and compliance.
 16. Emergency procedures and/or contingency plans to be followed in the event of an accident, unexpected school closing, or unforeseen route change.
 17. Use of special lighting and signaling equipment:
 - a. Alternately flashing red lights are to be used to inform motorists that the bus is stopped on the roadway to take on or discharge passengers.
 - b. The stop arm must be operated in conjunction with the flashing red signal lamps.
 - c. The use of a white flashing strobe light to increase the visibility of the school bus on the highway during adverse visibility conditions is permitted.
 - d. Crossing control arms may be used where appropriate to encourage children to cross properly in front of school buses.
 - e. Outside public address systems may be used for instructing children in crossing highways and for informing them of potentially life threatening situations.
 - f. Motion sensors may be used where appropriate to alert the driver of an impending safety hazard to students disembarking the bus.
18. Personnel:
- a. An organization chart, identifying the flow of responsibility from the board of education to the school bus driver, should be provided.
 - b. Employees should be provided with job specifications and descriptions at the time of employment.
19. Pre-service and in-service training requirements:
- a. All new school bus drivers should be provided with a minimum of forty hours pre-service training before transporting students.
 - b. All school bus drivers should be provided with a minimum of eight hours of in-service training annually.
- B. Standees:
1. All passengers must remain seated while the school bus is in motion.
- C. School site selection and plant planning: When school sites are being selected, consideration should be given to the safety of the pupils riding school buses. School buses will be required to utilize the roads in and around the school site, plus public roadways leading into and from the school area. High-density traffic flow near school exits and entrances should be avoided. Proper site selection and plant planning for improved school transportation is extremely important. (See Appendix I) More specifically, school officials should provide:
1. Separate and adequate space for school bus loading zones.
 2. Clearly marked and controlled walkways through school bus zones.

3. Traffic flow and parking patterns for the public and non-bused students should be separate from the loading zone.
4. A separate loading area for handicapped passengers.
5. An organized schedule of loading areas with stops clearly marked.
6. A loading and unloading site to eliminate the backing of transportation equipment.

Note: Appendix J may be used to evaluate school bus driveways in the vicinity of the school.

D. Routing and scheduling:

It is necessary to procure a map of the area served by a particular school or school system in order to establish bus routes that will adequately meet the needs of pupils in a particular area. Information on the road conditions, railroad crossings and other factors that might affect the particular operation should be recorded along with the location of homes and the number of school-age children in each. Recommended procedures for school bus drivers at railroad crossings appear in Appendix K. Satisfactory school bus stops must be identified along streets and highways where buses can travel with the least amount of risk. The number of pupils to be transported and the distance to be traveled are primary factors in allocating equipment for a particular area. Pupils should be assigned to specific stops according to walking distances, grade level and the school attended. Consideration should be given to the distances between stops to comply with the minimum distance required to activate the red and amber lighting systems.

1. Routing techniques:

- a. A circular route circumscribes an area by using different roads on outgoing and incoming trips. It has the advantage of equalizing time in transit for transported pupils since the first child on in the morning is the first child off in the evening.
- b. A shoestring route extends from the school to some terminal point in the district. If the bus is stored at the school, the same road or roads are used on the outgoing and incoming trips; consequently, children are always traveling more or less directly toward the school.

c. A feeder route extends from a point farther out in the district to a transfer point on the main route. It may be advisable for one or more of the following reasons:

- (1) To limit the use of large buses to improved roads.
- (2) To reduce travel time on the main route.
- (3) To provide some form of transportation on roads which at times may be impassable by larger, more desirable motor vehicles.

d. A shuttle route extends between two or more school buildings. Such routes are often required for the transfer of pupils in districts operating two or more schools.

e. Retracing routes can eliminate the need for pupils to cross the roadway.

f. Emergency routes should be established and utilized in all school systems when weather or road conditions dictate that it is not safe to travel on other than hard-surfaced roads. Announcements can be made by radio or other means when such routings are to be used.

2. Methods of serving bus routes:

- a. The single trip plan involves a morning and an afternoon trip by one bus on each route. This form of service is well adapted to sparsely settled areas. It also meets the needs of schools where the instructional program requires both elementary and secondary pupils to arrive at the same time.
- b. The double trip plan calls for each bus to cover two different routes in the morning and afternoon. This plan is suited to districts of relatively dense population where distances are not great. As children of all grades are carried on each trip, program adjustments in the instructional schedule are necessary to avoid idle waiting time at the school. If these adjustments can be made without sacrificing the interests of the children, the double trip may be economical by requiring fewer buses.
- c. The multiple or dual trip plan calls for more than two trips each morning and afternoon over the same route by each bus. This arrangement is feasible only

where route distances are relatively short or time differences between locations are great. High school pupils may be brought to school on the first morning trip with elementary children arriving on the second trip. In the afternoon the elementary children should be brought home first if it is desired that the elementary day be shorter than the high school day. Districts whose program requires a day of equal length for both groups may transport the high school pupils on the first trip in the morning and return them on the first trip in the afternoon.

3. Survey and stops:

A survey should be conducted by the pupil transportation director for the purpose of identifying factors that might indicate the need for a route change. After the survey is completed, a time study should be made by driving over the route in the same equipment that will be used in the actual operation. The driver(s) who will operate over the route(s) should regard the trip as a dry run. All scheduled stops and time between stops should be indicated. This data, if accurately obtained, will permit the development of a schedule which probably will need little revision once it is placed into effect. After the route has been established, a schedule showing individual stops should be available in the bus for the information of substitute drivers. Requests for new or additional service should be investigated thoroughly before a change is made. Stops should be established only after thorough investigation has revealed the location to be the most desirable in the area. It is considered poor practice to negotiate a U-turn on main arteries of traffic even though provisions for such turns may have been made. The projection of the rear end of the bus into inside traffic lanes from medians that are too narrow to accommodate bus length often creates traffic interference that places the lives of transported pupils in jeopardy. Further, it is desirable to eliminate, insofar as possible, the necessity to turn the bus by backing. Stops should always be located at a distance from the crest of a hill or curve to allow motorists travelling at the posted speed to stop within the sight distance. Additional precautions should include, but may not be limited to, the following:

- a. Determine the location and destination of all pupils to be transported.
- b. Provide the driver, attendance officer and the transportation office with the following information:
 - (1) A list of pupils on the bus(es).
 - (2) Approximate times for pick up and return of pupils.
 - (3) A map indicating routing of the bus and pupil locations.
 - (4) Identification of pupils with dormant medical problems that may require specific actions from the driver in the event the problem becomes active.
- c. Provide parents or guardians of all pupils with the driver's name, bus number, pick up and return times, school closing information, school calendar, procedures to challenge routing decisions, etc.
- d. Determine the advisability of utilizing computer-assisted route scheduling.
- e. Plan routes that will permit optimum pupil safety, program efficiency and operational economy.

E. Inspection of equipment:

A thorough and systematic inspection procedure is the essence of a planned preventive maintenance program. Daily inspections of the vehicle will alert the driver to the need for minor repairs and adjustments. Failure to conduct such inspections for any sustained period of time could result in more extensive repairs at a later date. Inspection, therefore, is an indispensable factor in a safe school transportation system.

The school bus driver is the key to an effective daily inspection program. It is the driver's responsibility to make a planned and systematic inspection of the bus before each trip. A recommended procedure requires the conducting of both stationary and operating inspections. The following outline is not suggested as a model for use, but is included as a guide for transportation personnel to use in developing a systematic inspection procedure.

1. Stationary inspection:

- a. Pre-starting inspection:

- (1) Observe the bus for evidence of oil, fuel or water leaks, vandalism, etc.
- (2) Raise the hood and make sure the safety latch or hinge is in hold position; check oil, water, belts, hoses and wiring for frayed, cracked and/or deteriorated conditions.

b. Walk-around inspection:

Place the transmission in neutral and set the parking brake. Fully depress the clutch pedal in manual transmission-equipped vehicles. Start the engine and inspect the bus from top to bottom and end to end. Check for:

- (1) Tires (under inflated, flat, excessively worn or damaged).
- (2) Wheels (loose or missing nuts, excessive corrosion, cracks or other damage).
- (3) Fluid leaks (evidence of wetness on inner wheels and tires).
- (4) Windows (all should be clean).
- (5) Mirrors (clean, properly aimed and tightly adjusted).
- (6) Warning systems (clean, properly working running lights, back-up lights, signals and signs, reflectors, turn signals, stop lights and warning flashers).
- (7) Exhaust system (sagging exhaust pipes, short and leaky tailpipes and defective mufflers).
- (8) Emergency exits must be tightly sealed to prevent possible entrance of dangerous carbon monoxide fumes. Check by opening and closing to keep hinges operational and to observe functioning of warning buzzer.
- (9) Alternate fuel systems include fittings and attachments that must be inspected for leaks, wear, or undue stress at quarterly intervals; container valves, appurtenances and connections must be inspected for damage from accidental contact with stones, ice or other loose objects; fuel lines must be inspected for damaged or missing rubber grommets and bulkhead fittings; all bolts in mounting

brackets must be checked for proper torque on a systematic basis; all inspections must be conducted in accordance with National Board of Fire Underwriters (NBFU) Pamphlet #58.

c. Inside safety check:

- (1) The passenger compartment, seats, frames, emergency exits and windows must be carefully checked.
- (2) Inspect instruments and controls. With the engine operating, check the following:
 - (a) Vacuum or air pressure gauge or hydraulic indicator lights; these should indicate adequate capacity to operate brakes. Loss of air or hydraulic pressure or vacuum indicates a braking deficiency that must be corrected immediately. Buses equipped with electric hydraulic brakes, the driver will depress the brake pedal with the engine off to check the operation of the backup system.
 - (b) Oil pressure gauge; the engine should be turned off in the event of inadequate pressure and reported immediately.
 - (c) Warning lights:
 - 1) Oil pressure warning light: prolonged display of the warning light is a signal of oil pressure problems and should be reported immediately.
 - 2) Service brake warning light: a light on during brake application indicates that the brake system is not operating properly.
 - 3) Alternator/Generator warning light: A continuous light "on" after the engine is running indicates a malfunction in the charging system.
 - 4) Ammeter and/or voltmeter: any continuous discharge should be reported immediately.
 - 5) Water temperature gauge or warning light: the indicator should always read "cool" or

"warm". If it indicates "hot", the engine should be stopped immediately. The same action should be taken if the temperature warning light goes on.

d. Check each of the following for proper operation, adjustments or condition:

- (1) Lights and signals: turn signals, stop lights, special warning lights, emergency flashers, clearance (markers) lights, headlights, interior bus lights, and stop arm lights.
- (2) Stop arm control.
- (3) Windshield fan, defrosters and heaters.
- (4) Horns.
- (5) Service door and control.
- (6) Mirrors: rear view, side view, convex and elliptical.
- (7) Three emergency triangles.
- (8) Driver's seat and seat belt.
- (9) Fire extinguisher.
- (10) First aid kit.
- (11) Wipers/washers.
- (12) Sanders, when equipped.
- (13) Power lift should be checked when equipped.
- (14) Spare electrical fuses.
- (15) Body fluid kit.

2. Operating inspection:

A planned road check enables the driver to evaluate the steering, suspension, clutch, transmission, driveline, engine and brakes. The following items should be included when road checking the vehicle prior to transporting pupils:

- a. The parking brake: check by slowly engaging the clutch while the parking brake is "on". (In some air brake systems, the parking brake will remain applied if there is a partial or complete air pressure loss in the service brakes.)

b. Transmission operation: an automatic transmission should not slip and a manual transmission should allow for easy and smooth gear changes throughout the entire shifting range.

c. The clutch: the clutch should engage easily and smoothly without jerking, slipping excessively or chattering. A properly adjusted clutch should have some free play when the pedal is fully released.

d. Service brakes: test at low speeds; bring the bus to a complete stop. It should stop in a straight line, without skidding or swerving to one side.

e. The engine: never race a cold engine. Instead, increase speed slowly so that all parts may be properly lubricated. Require the cooling of diesel engines before turning off, as recommended by the engine manufacturer.

f. The steering: report any unusual riding or handling characteristics.

g. The suspension: report any unusual riding or handling characteristics.

Note: Not all drivers have the ability to spot every problem. They should, however, make a thorough stationary and operating inspection of their bus each day. Inspection should become an integral part of driving and they must always be alert to any warning signal that indicates something is wrong. This alertness will permit them to spot trouble and act accordingly before it causes serious damage or results in an accident.

F. Maintenance of equipment:

1. Teamwork and written policies are essential to a well organized maintenance program.

a. Strong and reasonable school bus maintenance policies should be adopted that will provide efficient guidelines for the director of transportation, maintenance personnel and operators of the vehicles.

b. Such policies should include the maintenance responsibilities of each person involved and should provide for a planned maintenance program.

2. Preventive maintenance is a carefully organized system of inspections at regular

mileage or time intervals combined with the immediate attention to all reported defects.

- a. Manufacturer's service manuals and warranty protection guidelines, as well as state inspection guidelines, contain valuable information for successful preventive maintenance programs. These instructions and procedures should be carefully followed for maximum efficiency and safety in fleet operation. Vehicle and component manufacturers (transmission, electrical, etc.) offer training for fleet mechanics. Those interested in efficient operation will take advantage of these training programs.
- b. Objectives of a planned maintenance program:
 - (1) Keeping the vehicles in safe and efficient operating condition.
 - (2) Preventing road failures.
 - (3) Conserving fuel.
 - (4) Lowering the maintenance cost by reducing the need for major repairs or overhaul.
 - (5) Extending the useful life of the vehicle and its components.
 - (6) Enhancing vehicle appearance.
3. School districts or private contractors should develop a system whereby written communication would allow interchange and feedback relative to maintenance work needed and maintenance work completed. An efficient system should include:
 - a. Driver's report form to initiate needed maintenance.
 - b. Mechanic certification of completed work.
 - c. Method of permanently recording repairs and maintenance history of each vehicle.
 - d. Inspection by state agency or its designee.

G. Records:

1. Accident records function as the data base for statistical analysis which, in turn, provides material for accident prevention programs. In addition to the uniform school bus acci-

dent reporting criteria, additional accident records may include:

- a. A list of all pupils injured, their home addresses, phone numbers, the extent of their injuries and appropriate explanations.
 - b. A list of bus occupants and witnesses including addresses, phone numbers and statements.
 - c. Extent of damage and estimate of repair costs.
 - d. Post accident data: i.e., disposition of litigation and/or summonses, driver deposition, net effect of personal injuries, etc.
 - e. A signed statement from the bus driver concerning the particulars of the accident.
 - f. Complaints, challenges and disposition of hearings, etc.
2. Personnel records should contain the following types of information:
 - a. Applications from all employees which include the following:
 - (1) Confirmed work history.
 - (2) Driving record.
 - (3) Criminal record.
 - (4) Military record, if applicable.
- In considering application formats, districts should verify acceptable questions with the states human rights division. Most states do not permit questions relative to age, sex, marital status, etc.
- b. Physical examination.
 - c. Training and testing records.
 - (1) Behind the wheel.
 - (2) Knowledge.
 - (3) Hours of instruction.
 - (4) Name(s) of instructor(s).
 - d. Payroll records.
 - (1) Absences and their causes.
 - (2) Current wages.
 - (3) Years of service.

e. Complaints, commendations, evaluations, etc.

f. Organizational records.

(1) Number of employees.

(2) Wage scales.

(3) Other records as required.

g. Accidents, violations, etc.

3. Route records should contain:

a. Types of routes (urban, suburban, rural)

b. Route descriptions including accurate route maps.

c. Route miles.

d. Information about the needs of special education pupils.

e. Information pertaining to road conditions, hazards etc.

4. Maintenance records should contain the following:

a. Line setting tickets.

b. Work orders.

c. Preventive maintenance records.

d. Vehicle depreciation.

e. Equipment specifications.

f. Inspection reports.

5. Cost records should contain data in the following categories:

a. Vehicles.

b. Labor cost.

c. Parts cost.

d. Inventory cost.

e. Administrative costs.

H. Emergency procedures:

Each school system should have an emergency plan. Copies of the plan should be carried in each bus. This plan should be developed in cooperation with the personnel in those agencies that will render service during emergencies. The school transportation director, school administrators, teachers, drivers, maintenance and service per-

sonnel, pupils and others should be instructed in the procedures to be followed in the event of:

1. Accident:

a. How to evacuate and control pupils.

b. How to evaluate the need for medical assistance.

c. How to get help from the police, fire department and garage.

d. How to collect and record data essential to the preparation of the required accident reports. An operational plan to provide two-way communication with parents and/or guardians is imperative.

e. How to prevent further accidents.

2. Sudden disability of driver:

a. Procedures for handling situations resulting in the fatal injury or disability of the bus driver should be established and communicated to appropriate persons. A list including the bus operator, emergency telephone numbers, list of students assigned to the bus, and the special needs of students should be on the bus.

3. Bus Breakdown. The emergency plan should cover procedures for:

a. Securing the bus.

b. Controlling the passengers.

c. Diagnosing the cause(s) of the bus breakdowns.

d. Notifying school officials.

e. Recovering the disabled school bus.

f. Providing replacement transportation of passengers.

4. Inclement weather conditions: The emergency plan should provide procedures for determining:

a. When schools are to be closed.

b. Who is to make such decisions.

c. How decisions are to be relayed to parents, pupils, school officials and staff (including teachers and cafeteria manager), drivers, contractors, maintenance and service personnel, the news media and others.

- d. How to react to such natural phenomena as floods, hurricanes, tornadoes, etc.
- 5. Other types of emergency situations. The emergency plan should cover such conditions and events as:
 - a. Civil defense drills.
 - b. Strikes by school staff, teachers, drivers or contractors.
 - c. Road or bridge washouts and landslides that might block school bus routes.
 - d. Bus hijacking.

I. Communication

It is necessary to keep those in charge of the system, bus companies, parents and pupils informed of all operational procedures. The school district must ensure that the channels of communication are set up so that information can be disseminated quickly and effectively. The school district must ensure that inquiries, request, suggestions and recommendations are given prompt and appropriate attention and are handled efficiently. Some of the ways information can be disseminated and their purposes are:

- 1. **Bulletins:** To explain the school district's transportation policy to school administrators, teachers, bus companies, drivers, parents, pupils and others associated with the operation and to clarify new laws and safety policies so that everyone knows what is expected of them.
- 2. **Meetings:** To provide an opportunity for those associated with the school transportation program to share their views and to help build broad community support for safe transportation.
- 3. **Public Press:** To inform parents of policy, route, stop and schedule changes; of the safety record of the operation; and positive driver achievement records.
- 4. **Conferences:** To discuss solutions to disciplinary problems with drivers, disruptive pupils and their parents; to review policy decisions affecting drivers, contractors, pupils and school administrators.
- 5. **Letters:** To inform parents of all school and state regulations, new routes, etc.; reply to more urgent inquiries regarding pupil transportation safety, policy and procedures.

- 6. **Telephone Calls:** To provide quick contact between bus drivers and the school, or between parents and the school in the event of urgent or emergency situations.
- 7. **Radio, Television:** To inform the public of procedures the schools will follow in case of severe weather conditions or other natural phenomena, new policies, laws, etc.
- 8. **Formal Hearings:** To be used, as required, for student suspensions from transportation, route challenges, serious complaints against driver, etc.

VIII. Evaluation Of The Pupil Transportation System

- A. Each school district should have a plan for evaluating its pupil transportation program. Such evaluations should enable school districts to:
 - 1. Verify compliance with rules, regulations and laws.
 - 2. Audit the efficiency of program service.
 - 3. Monitor operational economy.
 - 4. Ensure the safety of the program in operation.
 - 5. Improve the quality of service.
- B. Major types of evaluations:
 - 1. Informal reviews by district personnel.
 - 2. Formal evaluations:
 - a. Private consultant.
 - b. State agency.
 - 3. Periodic evaluations:
 - a. Monthly
 - b. Annually
 - c. Biannually
- C. Areas subject to evaluation include:
 - 1. Board of education policy.
 - 2. Routing procedures.
 - 3. Types of service provided.
 - 4. Financial obligations.
 - 5. Quality of service.

IX. Transportation Other Than To And From School

A. School-Related Activity Operations

Each school system providing activity bus operations shall have comprehensive policies and guidelines for this type of transportation which delegate responsibility for this function to the supervisor of pupil transportation. To provide safe and efficient activity transportation, lines of responsibility and authority need to be defined and personnel involved must have an understanding of their respective responsibility.

In the interest of providing the safest means of transportation available, students should be transported to school-sponsored activities in school buses which meet state and federal standards. These school-related activity trips may include: field trips which are extensions of the instructional program, athletic trips, vocational and/or trade training, volunteer activities and recreational outings such as dances, picnics and overnight camping trips. These trips range from a few miles to those extending over several days and covering large distances.

The following items need to be considered when developing criteria for activity trip transportation:

1. Policies and guidelines:

- a. Purpose of trip (instructional, athletic, pupil/spectator's recreation, etc.)
- b. Funding source (district or individual school funds, individual charge, parent group, etc.).
- c. Administrative approval:
 - (1) Person who has authority to approve trip.
 - (2) A priority guideline should be developed for trip scheduling if all requests cannot be accommodated.
- d. Advance notification (Allow adequate time for approval process and for making driver and vehicle arrangements.)
- e. Methods of travel (may include district owned or contracted bus, commercial carrier or local transit equipment, air, boat, rail or combination of the above, private or school passenger automobile), when required by special or unique needs.

- f. Trip Request Form (should include all necessary information from trip arrangements, payroll, reimbursement and other local needs.). (See Appendix L)
- g. Chaperones (An adult chaperone should be required on all activity trips. Responsibilities include passenger control with drivers maintaining final authority.)
- h. Discipline and emergency medical procedures (A trip release to be signed by parents should include procedures concerning difficult or severe behavioral and medical problems and emergency policies.)
- i. Communication (drivers, pupils, chaperones and parents should be made aware of applicable rules and regulations. Parents should have destination information, mode of transportation, chaperones, departure and return times, appropriate dress and what the pupils should bring with them. A signed note from the parent or guardian is important. A detailed itinerary for all persons involved may be advisable. Identification of special medical problems in the event of an emergency enroute is necessary.)
- j. Luggage (A procedure for transporting luggage or equipment prohibited in the passenger compartment by state law and/or local regulations is necessary. Loose luggage or equipment which could cause injury or block passageways should never be transported in the passenger compartment.)
- k. Out-of-state trips (Policies should detail whether out-of-state trips are permitted and any applicable restrictions. Regulations for states to be visited should be reviewed prior to the trip.)
- l. Insurance policies (Policies should be reviewed or agents contacted to determine adequacy of coverage. This is an absolute necessity for trips scheduled to another state or country. If vehicles other than district-owned are used, the board of education should determine the minimum insurance coverage to be carried. A current copy of the contract or commercial carrier's insurance should be on file with the school district.)

- m. Road and weather check (A person responsible for checking road conditions should be designated. School transportation personnel from other districts, state patrols, highway divisions and auto clubs are generally cooperative in supplying road information. If warranted, the weather bureau should also be contacted. A planned route and any contingent route for trips should be determined prior to initiation of the trip.)
 - n. Contingency plans (Policies should detail who has authority to make decisions if the unexpected happens during a trip. Impassable roads, accidents or mechanical breakdowns are examples. Drivers and chaperones should have access to that authority's phone number. It is also advisable to obtain phone numbers of transportation personnel in various communities and school districts where activity vehicles regularly travel. Provisions should include plans for staying overnight if conditions do not permit a safe trip home. It is advisable to develop a mutual aid directory for contact within athletic league boundaries which could provide assistance in the event of mechanical emergencies. Drivers should be trained in procedures and regulations relating to trip accidents.)
 - o. Driving hours (School districts should have regulations based on a common sense application of the Bureau of Motor Carriers Safety Manual: 15 hours of duty of which 10 hours are driving time; 8 hours continuous off-duty prior to a long trip; no more than 60 hours driving in a week.)
 - p. Driver selection (Criteria for driver assignments are necessary to avoid conflict and confusion. The criteria should include a driver's knowledge, skill, experience and familiarity with activity trip vehicles. The area to be traveled should also be a consideration. Drivers should be notified at least 3 days in advance of trip date. Drivers who only drive trips occasionally should be periodically tested for driving ability and vehicle familiarity. They shall hold the same license and certification as regular school bus drivers.)
 - q. A list of all students and passengers being transported should be kept by the driver and left with proper authorities at the school or institution.
 - r. An emergency evacuation drill or at least a talk through should be given by the driver before each trip. (See Appendix M)
2. Vehicle and equipment:
- a. The following should be taken into consideration when selecting trip vehicles:
 1. Miles to be traveled.
 2. Terrain and climate conditions.
 3. Number and age group of pupils.
 4. Luggage and equipment.
 5. Driver familiarity with the vehicle and route.
 6. Federal Motor Carrier Safety Standards if contract operated and crossing state lines.
 - b. Consideration should be given for specialized equipment needed such as:
 1. Luggage storage.
 2. Chains or sanders (Chains should be prefitted prior to trip.)
 3. Extra heaters.
 4. Public address system.
 5. Radio (A.M., C.B. or 2-way).
 6. Tires (off-road tread or recaps; recaps on front axle are prohibited).
 7. Spare tire.
 8. Tool requirements (A kit containing items such as flashlight, pliers, screwdrivers, de-icer, extra chain tighteners, etc., is advisable.)
 9. To determine equipment requirements for an extended trip, it is advisable to communicate with transportation personnel at the destination.
 10. The driver should carry cash for telephone, fuel, bridge tolls, parking fees and personal needs.

- c. Inspection (Vehicles should pass the same inspections as regular route buses and a detailed check prior to activity trips.)

3. Training

- a. Specialized training should be provided for activity trip drivers. Training should include, but not be limited to, the following:

- (1) State laws and applicable policies and rules.
- (2) Familiarity with activity trip vehicle and its components.
- (3) Familiarity with specialized equipment and how to use it.
- (4) Familiarity with local and state trip requirements.
- (5) Route familiarization (This might include a dry run prior to the trip date, especially if extreme conditions, terrain or road difficulties may be encountered.)
- (6) Discipline procedures on trips.
- (7) Driving under adverse conditions (night driving, slippery roads or unfamiliar mountainous driving.)
- (8) Destination location and parking areas. (Maps should be made available to drivers.)
- (9) Parking location if other than pupil destination.
- (10) Provisions for bus security at destination.

B. Non-School-Related Activity Operations

1. Introduction

This sub-section is intended to address the various uses of a yellow school bus for operations other than to and from school and school-related activities.

2. Use, Procedures, and Policies

- a. The school bus operator, in accordance with state regulations and/or laws governing school bus use, should establish procedures whereby school buses can be scheduled for non-routine use. Such scheduling should not conflict with, or be

given priority over, the regular class-related demands for school buses by the school system.

- b. The school system, as part of local government or in cooperation with transportation contractors, may utilize buses during times of community emergency or crisis, when demand for other public vehicles, such as trains and transit buses, is so great as to exceed available supply.

3. Legal Requirements

- a. School buses operating on public roads and crossing state and national boundaries must adhere to the rules of the road in the jurisdictions in which they are operating.
- b. All permits and fees need to be procured in accordance with applicable state and local laws before the trip is undertaken.

4. Operational Requirements

- a. Vehicle equipment used for activities must be in good working order, well-maintained, and otherwise capable of withstanding the demands of the trip.
- b. All school buses and drivers operating under this section (Section IX) shall comply with all state and federal requirements including Federal Motor Carrier Safety Regulations applicable to inter- and intra-state passenger transportation.
- c. Aisles and exits must be kept free of blockages at all times.

NATIONAL STANDARD FOR SCHOOL BUS OPERATION: SPECIAL EDUCATION

The transportation administrator and pertinent staff shall become familiar with the following laws, guidelines, policies and procedures:

The purpose of this section is to recommend standard policies, procedures, and guidelines for persons entrusted with the responsibility of managing transportation for special needs students. The term "SPECIAL EDUCATION" means specially designed instruction to meet the unique needs of a handicapped student. Transportation is one of the "related services" required when necessary to provide such instruction.

This section reviews the current laws governing special transportation related to the individualized education program process, recommended staff training, and policy development.

The guidelines, policies, and procedures recommended, though general in nature, do contain adequate information to guide those persons responsible for pupil transportation in developing an action plan for the safe delivery of transportation services for special needs students.

I. Laws Affecting Special Needs Student Transportation

A. Laws

1. Section 504 of P.L. 93-112, a part of the Rehabilitation Act of 1973, states in part:

No otherwise qualified handicapped individual in the United States shall, solely by reason of his handicap, be excluded from participating in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance. In general terms, Section 504 requires that all handicapped students (regardless of age) are eligible for a free, appropriate public education. It also requires the facility, services, and activities provided to the handicapped be compatible to those provided to non-handicapped, and that handicapped students must have an equal opportunity for participation in any nonacademic and extracurricular services and activities provided by a school district. It is possible for a school

district to be required to provide specialized transportation services to a handicapped student who is not in special education.

2. "Education of the Handicapped Act", P.L. 94-142, was passed by Congress in 1975, and regulations were promulgated by implementation of Part B of the Education of the Handicapped Act, effective October 1, 1977. A free and appropriate public education is required for all students deemed handicapped who are determined capable of benefiting from special education, and meet specific age limits. While Federal law has specified ages 5 through 21, the age range changes to 3-21 with the 1990-1991 school year. Some states require service to extended ages.

B. Characteristics

To be handicapped under P.L. 94-142, a student must have certain characteristics which adversely affect educational performance, and need special education and related services. There are eleven categories, which are:

1. "Deaf" means a hearing impairment which is so severe that the child is impaired in processing linguistic information through hearing, with or without amplification, which adversely affects education.
2. "Deaf-blind" means concomitant hearing and visual impairments, the combination of which causes such severe communication and other developmental and educational problems that they cannot be accommodated in special education programs solely for deaf or blind children.
3. "Hard of hearing" means a hearing impairment, whether permanent or fluctuating, which adversely affects a child's educational performance, but which is not included under the definition of "deaf" in this section.
4. "Mentally retarded" means significantly sub-average general intellectual functioning existing concurrently with deficits in adaptive behavior and manifested during the develop-

mental period, which adversely affects a child's educational performance.

5. "Multihandicapped" means concomitant impairments (such as mentally retarded-blind, mentally retarded-orthopedically impaired, etc.), the combination of which causes severe educational problems that they cannot be accommodated in special education programs solely for one of the impairments. The term does not include deaf-blind children.

6. "Orthopedically impaired" means a severe orthopedic impairment which adversely affects a child's educational performance. The term includes impairments caused by congenital anomaly (e.g., clubfoot, absence of some member, etc.) impairments caused by disease such as poliomyelitis, bone tuberculosis, etc. and impairments from other causes (e.g. cerebral palsy, amputations, and fractures or burns which cause contractures).

7. "Other health impaired" means

a. having an autistic condition which is manifested by severe communication and other developmental and educational problems; or

b. having limited strength, vitality or alertness, due to chronic or acute health problems such as a heart condition, tuberculosis, rheumatic fever, nephritis, asthma, sickle cell anemia, hemophilia, epilepsy, lead poisoning, leukemia, or diabetes, which adversely affects a child's educational performance.

8. "Seriously emotionally disturbed" is defined as follows:

a. The term means a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree, which adversely affects educational performance:

(1) An inability to learn which cannot be explained by intellectual, sensory, or health factors;

(2) An inability to build or maintain satisfactory interpersonal relationships with peers and teachers;

(3) Inappropriate types of behavior or feelings under normal circumstances;

(4) A general pervasive mood of unhappiness or depression; or

(5) A tendency to develop physical symptoms or fears associated with personal or school problems.

b. The term includes children who are schizophrenic. The term does not include children who are socially maladjusted, unless it is determined that they are seriously emotionally disturbed.

9. "Specific learning disability" means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing, or motor handicaps, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage.

10. "Speech impaired" means a communication disorder such as stuttering, impaired articulation, a language impairment, or a voice impairment, which adversely affects a child's educational performance.

11. "Visually handicapped" means a visual impairment which, even with correction, adversely affects a child's educational performance. The term includes both partially seeing and blind children.

C. Related Services

As part of the mandate of a free appropriate public education, "Related services" are required when determined necessary to assist a handicapped child to benefit from special education. Transportation is a related service under P.L. 94-142, and is defined to include:

1. Travel to and from school and between schools.

2. Travel in and around school buildings.

3. Specialized equipment (such as special or adaptive buses, lifts, and ramps) if required to provide special education for a handicapped child.

II. The Implementation Process For P.I. 94-142

A. Identification and referral of students for special education.

1. A child, suspected of being handicapped, can be referred to a school district for evaluation to determine if the student is eligible for special education by several interested persons, but most frequently, it is a school instructional staff person, parent, or guardian. While not probable, it is possible for a transportation staff member to make a referral if they have knowledge to suspect a child's handicapped.
2. Once a student referral is made, an assessment team is assembled to evaluate the student. As the assessment team gathers information for appropriate evaluation of the student's alleged handicap, indications will be evident as to whether the student will qualify for special education, will need transportation as a related service, the type of specialized transportation service required, and if specialized care or intervention is required as a result of a medical or health problem, a chronic disease, a contagious or communicable disease, or other reasons.

B. The Role of Transportation Staff in the Assessment Process

When the assessment team determines that a student may need transportation as a related service, and has characteristics which could require care, or intervention, which would exceed that required for a non-handicapped student, or require the use of adaptive or assistive equipment, the pupil transportation staff shall be invited to participate in the assessment process as a resource person.

1. The transportation staff person could be expected to serve two major functions as a member of the assessment team.
 - a. Primary, would be to educate the assessment team members regarding the transportation environment. This could include such things as the type and configuration of the vehicle the student would likely be assigned to ride, the probable length of ride, conditions with respect to temperature extremes during loading/unloading and on the bus (as an example, the lift door might be open for ten minutes on

numerous occasions during pick up/drop off during sub-zero temperature), the type of device/occupant securement system to be used, if the vehicle is equipped with an emergency communication system, the degree of training and skills of the driver, if a bus attendant would be assigned without specific suggestion from the assessment team, etc.

- b. Secondary, would be to gather information regarding the student's expected transportation needs so as to properly plan for a timely efficient, and safe initiation of transportation service.

C. Evaluation And Planning Relative to a Student's Special Transportation Needs

Assuming information being developed by the assessment team indicates a need for transportation as a related service, and the student will likely need special care or intervention during transportation, or has adaptive or assistive equipment needs, transportation staff participation on the assessment team can help develop information which could address the following concerns:

1. Can the student be safely transported, given the transportation environment, including the length of the ride, without undue risk to the student or others?
2. Does the student have medical health, physical or behavioral concerns which would expose the student to unreasonable risk given the anticipated transportation environment?
3. Can assistive or adaptive equipment identified as necessary to accommodate the student during the transportation process be safely secured and transported, and are there adequate instructions regarding its use?
4. Education and transportation staff may lack the professional expertise and skills to make expert decisions regarding the above issues. The IEP meeting may include participants who are qualified to assist in determining transportation needs, particularly where significant medical or behavioral concerns are identified. When appropriate, a health care plan for the student should be developed which specifies the type and frequency of care required or expected, the skill level of the person expected to give the care, recommended if general observation of the student by the driver would be adequate, or if a staff person independent of the vehicle driver is

needed for the care or intervention of the student's needs.

5. Questions regarding appropriate and safe use of assistive or adaptive equipment, including mobile seating devices, ventilator or oxygen equipment, can be referred to such persons as physical therapists, occupational therapists, rehabilitation engineers, or equipment vendors for advice.

III. Individualized Education Program (IEP)—Assessment Team

The Assessment Team is the formal group that designs a student's educational plan, establishes goals and objectives, and determines the related services that are necessary for a student to benefit from special education. The Assessment Team report most often serves as the basis for Assessment Team discussions and decisions regarding a student's program content. If it is determined that a student needs transportation as a related service, and needs care or intervention exceeding that required for a non-handicapped student, or needs adaptive or assistive equipment, transportation staff shall be invited to be a participant on the team.

- A. By law, this committee must consider several issues related to the student's educational program. When transportation is considered as a related service, there are a number of questions which must be addressed:
 1. Can the student utilize regular transportation?
 2. If not, can regular transportation be safely utilized if supplementary staff, equipment, and/or services are provided?
 3. If not, what type of specialized transportation is required?
 4. Is an attendant or other qualified personnel available?
 5. Responsibility of pick-up and delivery of students i.e., are parents or guardians available?
- B. In addition to the above considerations, it is often necessary to review various alternative transportation options to meet a student's needs. Some alternatives frequently considered, and which must be allowable when determined appropriate are:
 1. Parent or relative providing transportation.

2. Public or private transportation.

3. A change of program placement, eliminating the necessity of transportation as a related service.

- C. The individualized education program establishes a written statement of a student's educational rights, and deviation from conditions in the plan without having re-convened an Assessment Team to change the plan, would most likely be considered a violation of the student's rights. As to transportation, plans should only state the requirement for transportation without spelling out all details of the delivery service. To put all details in the IEP would require the convening of the Assessment Team each time there was a change, which would prove impractical. Most often, issues such as make of vehicle, size of vehicle, routing and riding time, are not part of a plan, and are left to the discretion of the transportation administrator.
- D. While participating on an Assessment Team, a transportation staff member should be particularly vigilant so as to challenge transportation requirements that would be impossible to provide (such as a maximum riding time of 30 minutes when the student lives 45 minutes from school), or appears to be unsafe, or is not understood.

IV. Guidelines

The following guidelines are intended to assist in establishing a training program for transportation staff that will enable them to respond to the concerns presented by special needs students (which is required by P.L. 94-142) and provide transportation staff with the skills needed to respond to routine and emergency circumstances during transportation.

A. School/Educational Administration

School administrators and education staff who make program decisions for special education students, including the requirement for transportation as a related service, are frequently unfamiliar with transportation capabilities and limits. Those persons should have training in areas which would include:

1. When transportation staff would be consulted, or included in the Assessment Team process.
2. The types of vehicles used for special transportation.

3. The types of equipment and occupant securement systems used.
4. A knowledge of state and local transportation policies and procedures, including communications and reporting procedures.
5. A general knowledge of the extent of training and skill levels available within the transportation staff.
6. A general knowledge of transportation regulations which could assist in determining if transportation would be appropriate as a related service.
7. A general knowledge of alternative transportation options.
8. A general knowledge of current legislative, legal, and administrative decisions.
9. A general knowledge of the application of Least Restrictive Environment regulations to transportation placements.

B. Transportation Administration

With increased responsibility being imposed on special education transportation providers through actions taken by legislative, legal, and administrative authorities, transportation administrator/supervisors must involve themselves in the leadership role to a greater degree than that which is usually necessary for other types of transportation.

1. Duties And Responsibilities

While the duties and responsibilities of a transportation administrator/supervisor most likely would differ between various transportation providers, there are common areas of knowledge that are necessary to satisfactorily perform the responsibilities of an administrator/supervisor. Some are:

- a. Knowledge of federal, state, and local laws and regulations regarding the equipment required on vehicles used for special education students transportation.
- b. Knowledge of federal, state, and local laws and regulations regarding special education staff.
- c. Knowledge of such operational regulations as student pick up/drop off, including whether curb to school, or door to school.

- d. A general knowledge of special education transportation regulations, such as student riding time, and suspension period limitations.
- e. A general knowledge of a special education student's due process rights and procedures.
- f. A general knowledge of the student referral, evaluation and IEP process.
- g. A general knowledge of the identity of resource persons and the location and availability of appropriate training.
- h. A general knowledge of vehicle staffing requirements, including when an attendant might be needed.
- i. A general knowledge of the availability of emergency medical services in the community that could assist if such an emergency were to occur during transportation.
- j. A general knowledge of state and local laws relating to child abuse and reporting procedures.

C. Drivers And Attendants

Drivers and attendants, as the direct service providers with hands-on responsibility, must operate special equipment, manage student behavior, administer health care, according to their qualifications, and serve as a seating specialist in positioning and securing adaptive and assistive devices and occupants.

1. Selection and Retention of Transportation Staff

The responsibilities frequently differ so substantially between the role of the non-handicapped student transportation staff and the handicapped student transportation staff that, while some staff feel comfortable transporting and associating with one category of student, they prefer to not be associated with the other category of student. Thus, it is important to fully explain to applicants for special education transportation staff positions the full implications of the duties expected. By eliminating applicants prior to hiring who would not feel comfortable performing some required services, that staff retention level will be relatively high. Staff retention is critical given the considerable costs associated with the extra training required. Having staff who have a continuing

of individual students is a tremendous asset to their care.

2. Training Components

To perform the responsibilities assigned in a safe and effective manner requires a substantial degree of specific training. Some training components which would be beneficial to transportations staff are:

- a. Introduction to special education, including characteristics of handicapping conditions, the student referral, assessment, IEP process, and protecting confidentiality of student information.
- b. Legal issues, including federal and state law, administrative rules, and local policy.
- c. Operational policies and procedures, including:
 - (1) loading/unloading
 - (2) pick up/drop off (curb to curb-door to door)
 - (3) evacuation procedures
 - (4) lifting procedures
 - (5) student accountability and observation, including evidence of neglect, abuse
 - (6) post trip vehicle interior inspections for students, medicine, and other articles left prior to parking vehicle
 - (7) reporting procedures and report writing
 - (8) record keeping
 - (9) lines of responsibility relative to roll as educational team member
 - (10) lines of communication, including parents and educational staff
 - (11) route management, including medical emergencies, no adult at home, inclement weather, field trips
 - (12) behavior management, including:
 - (a) Techniques for the development of appropriate behavior
 - (b) Techniques for the management and extinguishing of inappropriate behavior

(c) Techniques and procedures for the response to unacceptable behavior.

(d) Procedures for dealing with inappropriate or unacceptable student behavior that creates emergency conditions, or poses a risk to health and safety.

(e) Procedures for documenting and reporting inappropriate or unacceptable student behavior.

D. Special Equipment Use and Operation

There is a wide variety of equipment being identified to accommodate special education students that is required to be part of the transportation vehicle's environment. It is necessary for the transportation staff to be familiar with the design and operating procedure of this special equipment, as well as knowing how to conduct equipment inspection and make simple "field adjustments" during breakdowns. Some examples are:

1. Power lifts or ramps
2. Emergency escape exits, including doors, windows and roof hatches.
3. Special fire suppression systems
4. Power cut off switch
5. Emergency communications system
6. Air conditioning system
7. Mobile seating device, including trays and accessories, securement system hardware, and occupant securement system.
8. Adaptive and assistive devices used to support or secure students, mobility aids, special belts, harnesses and hardware (such as special crutches or braces).
9. All specially equipped school buses shall be equipped with electronic voice communication systems which may be provided and installed by the body manufacturer, distributor, school district, operator or other party.

E. Medical/Health Issues

As a result of new regulations, which are making educational opportunities available to more special education students who have severe medical/health conditions, the transportation staff is

finding it necessary to provide both routine and emergency health care to students during the transportation process. Additionally, transportation staff may be exposed to infectious or communicable diseases which could be debilitating, or in extreme circumstances, fatal. Training regarding medical/health issues can reasonably be divided into two categories; precautionary handling, and care and intervention.

1. Precautionary Handling

All transportation staff, including drivers, attendants, mechanics, and service personnel, such as washing and cleaning staff, should be trained in "universal precautions" relative to the handling and exposure to contagious and communicable disease, including available immunizations. Suggested topics could include:

- a. characteristics of contagious and communicable diseases
- b. disease management techniques
- c. use of protective equipment and devices

2. Care, Intervention, and Management

Medically fragile, technology dependent, and highly disruptive students require specific care and intervention. Proficiency in basic first aid and cardiopulmonary resuscitation provides adequate training to care for most health concerns during transportation. For those students who need additional care, management, or intervention, or present specific health risks, a care plan shall be developed during the assessment process by the Assessment Team which would specify the following:

- a. a brief description of the student's current medical, health, or behavioral status.
- b. a description of the medical/health care or intervention necessary during transportation, including the frequency required.
- c. a description of who should provide the care or intervention.
- d. the type and extent of training of skills necessary for the driver and/or attendant.
- e. the inspection, operation, use and care of the students special adaptive/assistive equipment.

- f. a description of emergency procedures to be implemented during a medical/health crisis, including communication with medical staff.
- g. a description of the procedures to be followed in changing the care plan when conditions indicate a change is warranted.

V. Information Confidentiality

Information provided to transportation staff to assist in the orderly and safe transportation of a student, including handicapping condition, medical/health issues, or other personal characteristics or information, is protected by the provisions of the Family Educational Rights and Privacy Act, and transportation staff shall be trained regarding confidentiality requirements.

VI. Policy Development

In special education, there are any number of laws, rules, and regulations which dictate the service that must be provided, but few of them offer directions or suggestions as to how the service is to be provided. To guarantee a uniform and safe delivery of transportation service, and provide consistent directions to a transportation staff made up of persons with different personalities, temperament, and decision making capabilities, a written local school board adopted transportation policy and procedure directives shall be required.

A. Subjects Which Need Policy and Procedure Directives

1. Control of student medicine transported between home and school on a vehicle
2. Student suspension
3. Physical intervention and management
4. Authority to use special harnesses, vest, and belts
5. Early closing of school due to inclement weather or other emergencies
6. Authority to operate special equipment (driver, attendant, parent, students, school staff, others?)
7. When no adult is home to receive students
8. When to exclude special equipment which has a different design or configuration than that last used, has tears or breaks in the fabric or metal

ings, that are operated by the military or other federal, state, or local government agencies, churches, schools, colleges or universities are not classified as school buses.

School Bus Accident—A motor vehicle accident resulting in personal injury, death or property damage of \$500 or more in which a school bus (as previously defined) with or without a pupil on board is involved either directly or indirectly; a collision involving a vehicle or pupil while the pupil is crossing the street under the protection of the school bus flashing red light system (and stop arm(s), if applicable). If, for example, a school bus and passenger vehicle collide, the collision is a school bus accident since the school bus is directly involved. If a pupil is crossing the street under the protection of the school bus flashing red light system (and stop arm(s), if applicable) and is struck by a motor vehicle, this is also a school bus accident, even though the school bus sustained no physical damage. The school bus was indirectly involved.

Driver—The person driving or in physical control of the vehicle.

Intersection—An area which (1) contains a crossing or connection of two or more roadways not classified as a driveway access and (2) is embraced within the prolongation of the lateral curb lines or, if not, the lateral boundary lines of the roadways. Where the distance along a roadway between two areas meeting these criteria is less than 10 meters (33 feet), the two areas and the roadway connecting them are considered to be parts of a single intersection. (Classification of Motor Vehicle Traffic Accidents, ANSI D16.1, American National Standards Institute.)

Passenger loading and unloading area—Any place the school bus stops to load or unload pupil passengers.

Pupil—A person who attends an educational institution.

School bus types—There are two basic approaches for defining a vehicle as a school bus; by function, or by structural design. When reporting a school bus accident to the state and subsequent state reporting of accident data for use at the national level, the appropriate term or definition which best describes the school bus involved, should be used.

General Information

National School Bus Accident Reporting Data

The following data should be integrated into a state's generic traffic collision report for motor vehicle accidents, if not currently documented:

Carrier's name, school district, school bus contractor, etc.

Dirver's name, driver's license number, birth date, sex, driving record

Vehicle make, body make, chassis make, model year, vehicle identification number

Engine location, forward, beneath, or behind windshield (specify)

GVWR and rated seating capacity -- Mark W if bus is wheelchair equipped

Number of passengers on the bus, excluding driver

Date, time, and location of accident

Police report number (if applicable)

Citation issued _____ Yes _____ No

Part I —School Bus Physically Involved

1. Type of Accident?

_____ Between motor vehicles

_____ Non-collision pedestrian

_____ Railroad Train

_____ Fixed object

_____ Pedalcycle

_____ Other collision

2. Complete if fixed object accident

- | | |
|--|---|
| <input type="checkbox"/> Embankment | <input type="checkbox"/> Sign |
| <input type="checkbox"/> Utility pole | <input type="checkbox"/> Guardrail |
| <input type="checkbox"/> Tree | <input type="checkbox"/> Bridgerail |
| <input type="checkbox"/> Fence | <input type="checkbox"/> Median barrier |
| <input type="checkbox"/> Fire hydrant | <input type="checkbox"/> Curb or wall |
| <input type="checkbox"/> Culvert or headwall | <input type="checkbox"/> Parked vehicle |
| | <input type="checkbox"/> Other |

3. Did Accident Result In?

- | | |
|--|---|
| <input type="checkbox"/> Fatality | <input type="checkbox"/> Non-incapacitating injury (moderate) |
| <input type="checkbox"/> Incapacitating injury (serious) | <input type="checkbox"/> Possible injury (minor) |
| <input type="checkbox"/> Property damage only (no one was killed or injured, but property damage equalled or exceeded \$500) | |

4. Manner of Collision Between Vehicles or Objects?

- | | |
|----------------------------------|------------------------------------|
| <input type="checkbox"/> Angle | <input type="checkbox"/> Rear-end |
| <input type="checkbox"/> Head-on | <input type="checkbox"/> Broadside |
| | <input type="checkbox"/> Other |

5. Bus Direction Analysis

Collision with Pedestrian

- | Intersection | Non-Intersection |
|---|---|
| <input type="checkbox"/> Bus going straight | <input type="checkbox"/> Bus going straight |
| <input type="checkbox"/> Bus turning right | <input type="checkbox"/> Bus turning right |
| <input type="checkbox"/> Bus turning left | <input type="checkbox"/> Bus turning left |
| <input type="checkbox"/> Bus backing | <input type="checkbox"/> Bus backing |
| <input type="checkbox"/> Other action | <input type="checkbox"/> Other action |

Collision with Other Vehicle

- | Intersection | Non-Intersection |
|--|---|
| <input type="checkbox"/> Entering at angle, both moving | <input type="checkbox"/> Same direction, both moving |
| <input type="checkbox"/> Entering same direction both moving | <input type="checkbox"/> Opposite direction both moving |
| <input type="checkbox"/> Entering opposite direction both moving | <input type="checkbox"/> One vehicle stopped |

All Other Collisions

Intersection

- Fixed object
- Other road vehicle, train, pedalcycle
- Other object, animal

Non-Intersection

- Fixed object
- Other road vehicle, train, pedalcycle
- Other object, animal

Non-Collision

Intersection

- Overturn
- Other non-collision

Non-Intersection

- Overturn
- Other non-collision

6. First Point of Impact? (Diagram on state collision report)

7. Contributing Circumstances?

Driver Action

- Speed
- Failed to yield right-of-way
- Passed stop sign
- Disregarded signal
- Drove left of center
- Improper overtaking
- Made improper turn
- Followed too closely
- Backing
- Sudden movement
- No improper action
- Improper distance judgement

Other Driver

- Speed
- Failed to yield right-of-way
- Passed stop sign
- Disregarded signal
- Drove left of center
- Improper Overtaking
- Made improper turn
- Followed too closely
- Backing
- Sudden movement
- No improper action
- Improper distance judgement

Other factors

Roadway

- Defective surface
- Slippery
- Inoperative traffic signal
- View obstructed by object

Vehicle Defect

- Tires
- Brakes
- Lights
- Steering
- No vehicle defect
- Other

8. Total number of lanes on roadway?
9. Posted speed limit?
10. Approximate speed of the bus?
11. Was bus driver's lap belt in use when the accident occurred?
12. School bus use at time of accident?
- | | |
|--|--|
| <input type="checkbox"/> Regular Route | <input type="checkbox"/> Special Education use |
| <input type="checkbox"/> Field/Activity Trip | <input type="checkbox"/> Other use |
13. Condition of road at time of accident?
- | | |
|--|---------------------------------------|
| <input type="checkbox"/> Dry | <input type="checkbox"/> Under Repair |
| <input type="checkbox"/> Icy | <input type="checkbox"/> Snow packed |
| <input type="checkbox"/> Holes or ruts | <input type="checkbox"/> Muddy |
| <input type="checkbox"/> Wet | <input type="checkbox"/> Other |
14. Light Condition?
- | | |
|-----------------------------------|---|
| <input type="checkbox"/> Dawn | <input type="checkbox"/> Dark (lighted) |
| <input type="checkbox"/> Daylight | <input type="checkbox"/> Dark (not lighted) |
| <input type="checkbox"/> Dusk | |
15. Weather condition?
- | | |
|-------------------------------------|----------------------------------|
| <input type="checkbox"/> Clear | <input type="checkbox"/> Raining |
| <input type="checkbox"/> Sleet | <input type="checkbox"/> Fog |
| <input type="checkbox"/> Snowing | <input type="checkbox"/> Dust |
| <input type="checkbox"/> Smog/Smoke | <input type="checkbox"/> Other |

Part II—Loading/Unloading Accidents

1. At the time of the accident, where was the bus?
- | | |
|---|---|
| <input type="checkbox"/> Approaching the zone | <input type="checkbox"/> Leaving the zone |
| <input type="checkbox"/> Stopped in the zone | <input type="checkbox"/> Not in sight |
2. Was the pupil(s)
- | | |
|--------------------------------------|--|
| <input type="checkbox"/> Hit by bus? | <input type="checkbox"/> Hit by other vehicle? |
|--------------------------------------|--|
3. Number injured (See Part III)

4. Location of injured pupil(s)

_____ On side of road

_____ In roadway

_____ On sidewalk

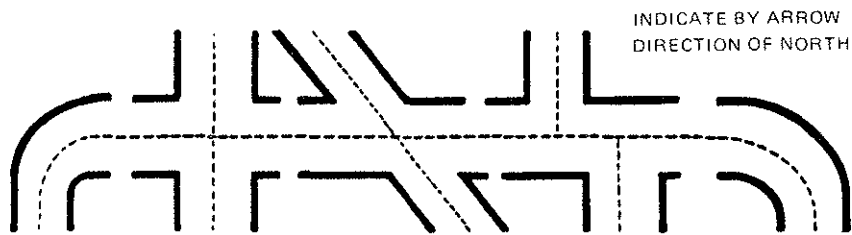
_____ Other

5. Description of behavior of pupil(s)

6. Description of accident

7. Diagram of accident

Complete the following diagram showing direction and positions of vehicles involved, designating clearly the point of contact. (If this diagram will not serve for the accident in question, use adjacent space provided.)



Part III—Injury Tally Sheet

1. Ages and injury severities for all persons on bus?

2. Ages and injury severities for person(s) off bus, in loading/unloading area?

SCHOOL TRANSPORTATION-RELATED PERSONNEL

Age	On Board Bus									Off Bus Loading/Unloading Area										
	Killed			Injured						Killed			Injured							
	M	F	All	Serious	Moderate	Minor	All	Serious	Moderate	Minor	All	Serious	Moderate	Minor	All					
Under 5	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
5	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
6	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
7	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
8	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
9	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
10	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
11	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
12	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
13	181	182	183	184	185	186	187	188	189	190										
14																				
15																				
16																				
17																				
18																				
19																				
20																				
Over 18	151	152	153	154	155	156	157	158	159	160										
Driver	161	162	163	164	165	166	167	168	169	170										
Others	171	172	173	174	175	176	177	178	179	180										
Totals	181	182	183	184	185	186	187	188	189	190										

REPORT SUBMITTED BY:

Signature _____

Name (Print) _____

Date _____

Position _____

Part IV—Local Variables

Part V—Supplemental Accident Data

All accident data which is not integrated into a state's generic motor vehicle traffic collision report should be documented on a supplemental school bus accident report and tabulated by the appropriate state agency.

In addition to the standard generic accident data, the following information should also be included in documenting school bus accidents.

1. Bus Driver's Experience

_____ Hours of pre-service training

_____ Hours of in-service training in past 12 months

_____ Number of accidents in past three years

2. Types of Buses (see definitions, school bus)

_____ Type A

_____ Type B

_____ Type C

_____ Type D

3. Seat Back Height

APPENDIX, OPERATIONS

APPENDIX A

Actions to be Taken During and Following the Observations of School Bus Routes

Supervisory actions that should be taken during and after the transportation director completes a review of bus routes are:

1. Check the route and schedule for accuracy.
2. Determine that loading and unloading occurs only at authorized stops.
3. Check to see that vehicles are operated in compliance with prescribed regulations.
4. Observe the driver-pupil relationship.
5. Check loading and unloading conditions at school centers.
6. Check for evidence of supervision in loading zones.
7. Note hazardous road conditions.
8. Note the nature, frequency and locations of bus stop law violations.
9. Observe conditions of bus, e.g., cleanliness, tires, windows, emergency exit(s), first aid kits, fire extinguisher, seats, etc.
10. Observe vehicle inspection guide for evidence of pre-trip inspection.
11. Note driver attitude toward other motorists and pedestrians.
12. Follow the observation with a written report and discussion with the driver (and others, as appropriate).
13. File the written report in the driver's permanent record.

APPENDIX B

School Bus Driver Application
(Example of a form that may be used)

Applicant Name _____

Present Address _____

Date of Birth _____ Social Security No. _____

Addresses at which applicant has resided during the past three (3) years:

Current Driver's License Number _____

State of Issue _____ Expiration Date _____

Class of License _____ Endorsements _____

Restrictions _____

Do you have any physical impairments that could interfere with the duties of a school bus driver? (See physical form). _____

Have you had any type of vehicle accident in the last three (3) years? Yes No

If yes, give dates and explain: _____

Have you been convicted of a moving traffic violation in the last three (3) years? Yes No

If yes, give dates and explain: _____

Has your driver's license been suspended or revoked during the last three (3) years? Yes No

If yes, give dates and explain: _____

Has your license ever been revoked, suspended, or denied since the time you obtained your original license? Yes No If yes, give dates and explain. _____

Have you held a license in another state during the last three (3) years? Yes No

If yes, which state(s) _____

List the names and addresses of your current and previous employers during the ten (10) years preceding the date of this application:

Employer _____

Address _____

Dates _____ Reason for leaving _____

Job Title & Duties _____

Employer _____

Address _____

Dates _____ Reason for leaving _____

Job Title & Duties _____

Employer _____

Address _____

Dates _____ Reason for leaving _____

Job Title & Duties _____

Additional employers may be listed on a separate sheet.

Education and training (circle the highest obtained)

8 9 10 11 12 GED 13 14 15 16 17 18 19+

Degrees Earned: _____

Indicate any other formal training: _____

I understand that the information provided by me, may be checked and previous employers may be contacted for the purpose of investigating my background. This certifies that this application was completed by me, and that all entries on it and information on it are true and complete to the best of my knowledge.

_____ Date _____ Signature _____

I authorize the employer to conduct a criminal history check, and to investigate all written information contained on this application.

_____ Date _____ Signature _____

APPENDIX C

Instructions For Conducting Emergency Exit Drills

There is an urgent need, due to the increased number of pupils being transported and the ever-increasing number of accidents on the highways, to instruct pupils on how to properly vacate a school bus in case of an emergency. It is possible for pupils to block the emergency door if all are trying to get out at the same time. There is also a possibility of danger when pupils jump from the rear emergency door exit. To avoid these situations, schools should organize and conduct emergency exit drills for all pupils who ride the school bus, even occasionally.

Reasons for actual emergency evacuations:

1. Fire or danger of fire. Being near an existing fire and unable to move the bus, or being near the presence of gasoline or other combustible material is considered dangerous and pupils should be evacuated. The bus should be stopped and evacuated immediately if the engine or any portion of the bus is on fire. Pupils should be moved to a safe place 100 feet or more from the bus and instructed to remain there until the driver has determined that the danger has passed.
2. Unsafe position. When the bus is stopped because of an accident, mechanical failure, road conditions, or human failure, the driver must determine immediately whether it is safer for pupils to remain on or evacuate the bus.
3. Mandatory evacuations. The driver must evacuate the bus when:
 - a. The final stopping point is in the path of a train or adjacent to railroad tracks.
 - b. The stopped position of the bus may change and increase the danger (e.g., a bus comes to rest near a body of water or at a precipice where it could still move and go into the water or over a cliff). The driver should be certain that the evacuation is carried out in a manner which affords maximum safety for the pupils.
 - c. The stopped position of the bus is such that there is danger of collision.
4. Sight distance. In normal traffic conditions, the bus should be visible for a distance of 300 feet or more. A position over a hill or around a curve where such visibility does not exist should be considered reason for evacuation.

Important factors pertaining to school bus evacuation drills:

1. Safety of pupils is of the utmost importance and must be first considered.
2. All drills should be supervised by the principal or by persons assigned to act in a supervisory capacity.
3. The bus driver is responsible for the safety of the pupils. When the driver is incapacitated and unable to direct the evacuation, school patrol members, appointed pupils or adult monitors should be authorized to direct these drills. It is important to have regular substitutes available.

Pupils appointed to direct evacuation drills should possess the following qualifications:

- a. Maturity.
- b. Good citizenship.
- c. Live near end of bus route.

Appointed pupils should know how to:

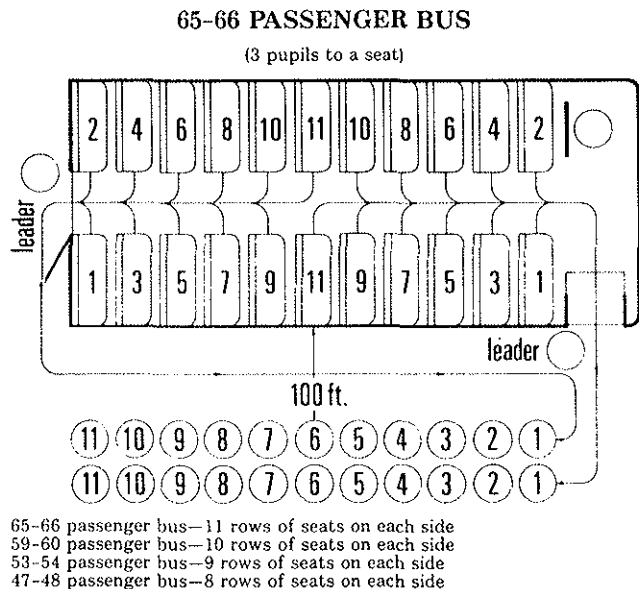
- a. Turn off ignition switch/shut down engine.
 - b. Set emergency brake.
 - c. Summon help when and where needed.
 - d. Use kick out windows or emergency escape exits.
 - e. Set warning devices.
 - f. Open and close doors, and account for all pupils passing his station.
 - g. Help small pupils off bus.
 - h. Perform other assignments.
 - i. Use of electronic voice equipment to summon help.
4. Drills should be scheduled in a manner similar to fire drills held regularly in schools. They should be held more often during fall and spring months and conducted when the bus arrives at the school building with the pupils.

5. Drills should be restricted to school property and conducted under the supervision of school officials.
6. Types of drills should be varied.
7. Driver should stay in bus during evacuation drill. He/she must set the parking brake, turn the engine off and place the manual transmission in gear.
8. Pupils should not be permitted to take lunch boxes, books, etc., with them when they leave the bus. The objectives are to get pupils off safely in the shortest time possible; and in an orderly fashion.
9. Pupils should travel a distance of at least 100 feet from the bus in an emergency drill and remain there until given further directions.
10. All pupils should participate in the drill, including those who ride only on special trips.
11. Each pupil should be instructed in proper safety precautions.
12. Pupils should be instructed in how and where to obtain assistance in emergencies. Written instructions and telephone numbers should be posted in the bus.

There are several different drills:

1. Everyone exits through the front entrance door(s).
2. Everyone exits through the rear-most emergency door(s).
3. Front half exits through the front door and rear half exits through the rear-most door.

4. All rear engine buses are equipped with a left side emergency door in lieu of a rear emergency door.
5. Some states also require side emergency doors in addition to rear emergency doors.
6. Students should be familiar with the operation of emergency windows, both side and rear, and roof hatches. All exits should be opened by students during evacuation drills to ensure their ability to operate such devices.
7. Every school bus driver shall ensure the students assigned to their bus are familiar with the emergency exit configuration of their assigned bus.
8. Identification of seat rows and positions similar to airline seating is recommended, i.e., left front seat 1, a, b, c, right front seat 1, d, e, f, etc.



APPENDIX D

Policies And Procedures for Pupil Management

1. The bus driver's authority over, and responsibility for, pupils while in transit.
2. The pupil's right to due process when disciplinary action is taken.
3. A step-by-step procedure for resolving problems when the driver needs assistance.
4. The conditions under which a pupil might be temporarily or permanently suspended from the bus riding privilege.
5. Procedures for handling emergencies.
6. Use of bus monitor or bus attendants.
7. Requirements and responsibility for school bus passenger and pedestrian safety instruction.
8. Parent's or guardian's responsibility for damage caused by their children to the bus or its equipment.

APPENDIX E

Pupil Rules

1. Pupil shall arrive at the bus stop before the bus arrives.
2. Pupil shall wait in a safe place, clear of traffic and away from where the bus stops.
3. Pupil shall wait in an orderly line and avoid horseplay.
4. Pupil shall cross the road or street in front of the bus only after the bus has come to a complete stop and upon direction of the driver.
5. Pupil shall go directly to an available or assigned seat when entering the bus.
6. Pupil shall remain seated and keep aisles and exits clear.
7. Pupil shall observe classroom conduct and obey the driver promptly and respectfully.
8. Pupil shall refrain from throwing or passing objects on, from or into buses.
9. Pupil is permitted to carry only objects that can be held on his/her lap.
10. Pupil shall refrain from the use of profane language, tobacco, alcohol, drugs or any other controlled substance on the bus.
11. Pupil shall refrain from eating and drinking on the bus.
12. Pupil shall not carry hazardous materials, nuisance items and animals onto the bus.
13. Pupil shall respect the rights and safety of others.
14. Pupil shall refrain from leaving or boarding the bus at locations other than the assigned stops at home or school.
15. Pupil shall refrain from extending head, arms or objects out of the bus windows.
16. Pupil shall refrain from hitching rides via the rear bumper or other parts of the bus.

APPENDIX F

Pupil Instruction

Since most pupils ride buses to and from school or on activity trips, it is essential that all be taught safe riding and pedestrian practices. Instructional programs appropriate for each grade level and for the needs of each group of youngsters should be developed. Pupils may not need complete information if they are eligible only for activity trips. This instruction should be provided as early as practical in the school year and should include the following:

1. Safe walking practices to and from the bus stops.
2. Wearing of light-colored or reflective clothing when going to and from the bus stop in darkness.
3. How and where to wait safely for the bus.
4. What to do if the bus is late or does not arrive.
5. How to enter and leave the bus.
6. Safe riding procedures.
7. Safe highway crossing before boarding or leaving the bus.
8. Procedures to follow in emergency situations and evacuations.
9. Respect for the rights and privileges of others.

APPENDIX G

BUS CONDUCT REPORT

Bus No. _____ School _____ Date _____

Pupils in the _____ School District who ride buses are subject to rules and regulations designed to provide safe transportation to and from school. Any behavior which distracts the driver is a serious hazard to the safe operation of the vehicle, and as such, jeopardizes the safety of all passengers. Consequence of continued inappropriate behavior could result in your child being denied the bus riding privilege.

_____ has been cited for an infraction of the rules checked below:
(name)

- Failure to remain seated
- Scuffling or fighting
- Profanity or obscene language
- Smoking on bus
- Throwing objects on bus
- Extending arm or head out window
- Lighting matches
- Throwing objects from window
- Refusing to obey driver
- Bothering others
- Other (See Comment)

Comment: _____

Driver's Signature _____

Date of Offense: _____ First offense Second offense Third offense

School Administrator's Action: _____

School Administrator's Signature _____

Parent/Guardian's Comment _____

Please Sign And Return To School Administrator

Parent/Guardian's Signature _____

White—School Administrator's Copy
Pink—Parent/Guardian's Copy

Canary—Bus Driver's Copy
Gold—Pupil's Copy

First offenses require at least a notification to the pupil and parent or guardian either by phone or in person by appropriate school personnel. Second and subsequent offenses may require a conference with the pupil, parent or guardian, driver and school administrator(s) which may result in a period of suspension of pupil's riding privileges.

A form such as the one above should be used for reporting purposes.

WHEN BOARDING YOUR BUS:
Here's How to Cross the Road SAFELY

FOLLOW THE 10 FOOT RULE:

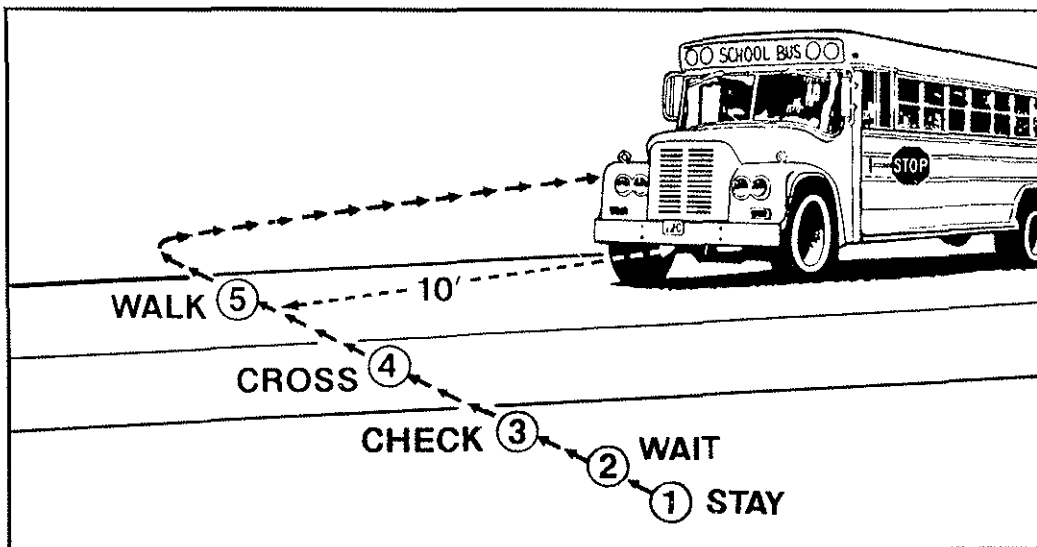
STAY—on your side of the road—far away from the traffic

WAIT—for the bus to stop and for your driver's signal to cross

CHECK—traffic both ways—then check again

CROSS—walk directly across, checking traffic both ways

WALK—approximately 10 feet ahead of the bumper and board bus quickly



REMEMBER

- Stay on your side of the road until your driver signals you to cross
- Check and recheck for traffic
- Follow the 10 foot rule
- Board bus quickly—go directly to your seat

**Drivers SHOULD stop...But
THEY MAY NOT!**

APPENDIX H-B

WHEN LEAVING YOUR BUS: Here's How to Cross the Road SAFELY

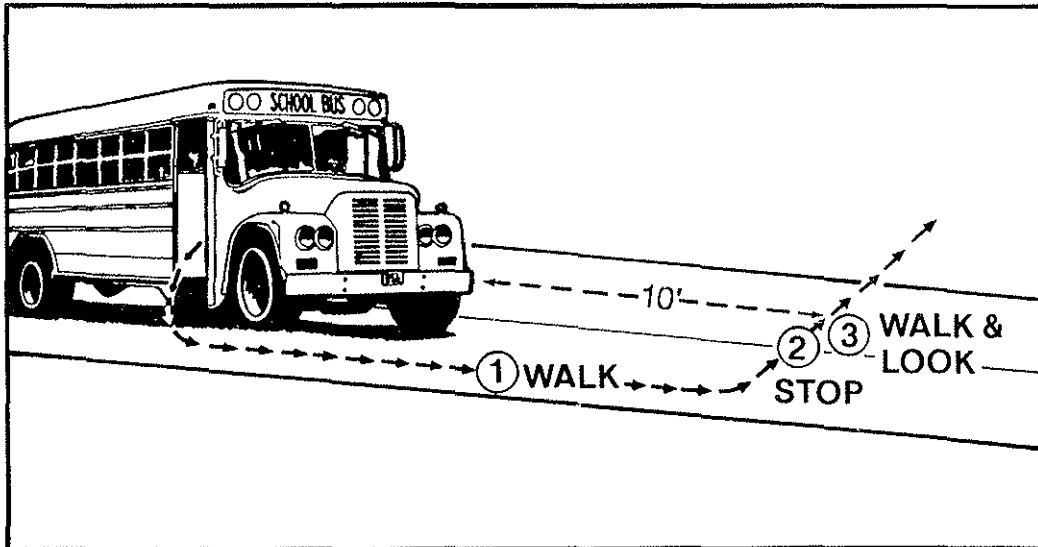
WALK—along the side of the road until
you can see your driver

STOP—wait for the signal to cross

WALK & LOOK—for traffic both ways

—if you see a vehicle that has not
stopped, go back to the bus immediately

—if all vehicles have stopped, cross the road quickly



Crossing the Highway is DANGEROUS

REMEMBER {
• WALK
• STOP
• WALK & LOOK

**Drivers SHOULD stop...But
THEY MAY NOT!**

APPENDIX I

Planning School Sites For School Bus Safety

1. In the selection of school sites, major consideration should be given to the safety of pupils riding school buses. School buses will be forced to utilize the roads in and around the school site plus public highways leading into the school area. High-density traffic flow near school exits and entrances due to the proximity of freeways, periodic commercial traffic or massive commuter traffic from industrial plants should be avoided. It must be recognized in many cases that the area designated for the school site has been selected prior to hiring an architect. It is suggested, therefore, that this information be issued to boards of education and municipal planning authorities alerting them to the dangers inherent in the process of site selection. It is also suggested that boards of education discuss the selection with the superintendent of schools, traffic engineers and the state office of school plant planning and solicit their help in evaluating possible school sites.
2. The location of the school plant on a site should be determined to provide a safe means of entrance and egress for all pupils. When boards of education are considering school sites, the state, county and local roads servicing the area should have a minimum 30-foot paved width where loading and unloading is contemplated off the main thoroughfare. If it is necessary to load or unload pupils on the main thoroughfare in front of the school, at least a 40-foot wide paved road should be provided.
3. All school bus traffic should be considered as one-way traffic flow, preferably with the service door side of the bus always next to the loading and unloading zone.
4. Whenever possible, separate pickup and delivery points some distance from the school bus loading areas should be designated for parents, service, teacher and administrative traffic. Accident inducing conditions are created by haphazard pickup and delivery of pupils in the bus loading zones, particularly during inclement weather.
5. Whenever possible, roads should not be constructed that completely encircle a school. Areas that pupils must cross to engage in outside activities should be free of all vehicular traffic.
6. All school bus roads entering into or exiting from main arteries should have a 50- to 100-foot-radius turn on inner edge of pavement. Within the school site, roads should have at least a 60-foot radius on inner edge of pavement on all curves. At least a 50-foot tangent section should be provided between reverse curves. In order to minimize driveway entrance and exit widths, island construction may be required. Driveway openings must conform to local requirements. Driveway openings on state highways should be approved by the state highway department.
7. Curbing, with suitable drainage, should be constructed on all roads utilized by school buses within the school site. Consideration should be given to state highway department performance specifications. A minimum of 30-feet should be maintained for one-way traffic and 36-feet for two-way traffic. Roads should be wider on all curves.
8. It is desirable to separate all parking from the loading zone utilized by the school bus.
9. In the construction of parking areas, it might be advantageous if only the visitor parking area were located in close proximity to the school. Care should be exercised in the placement of these areas to preclude the visitor from crossing the school bus traffic pattern.
10. Prior to designing and laying out roads and parking lots, architects should consult with the school administration on the following items:
 - a. Total number of pupils and school personnel.
 - b. Number of present and projected pupils to be transported.
 - c. Number of buses.
 - d. Type of schedule.
 - (1) Staggered opening and closing times.
 - (2) Single opening and closing times.
 - e. Extra-curricular activities that would necessitate use of school buses.
11. It is desirable to locate parked buses on school grounds to prevent glare from reflective surfaces of windows, doors and windshields from being transmitted to the pupils in the classroom.

12. Attention should be given in planning school bus parking, loading and unloading areas. Parking should exclude the necessity for backing the bus.
13. Sidewalk plans for pupils walking to school should eliminate crosswalks in front of the buses.
14. Architects' plans for school buildings often include bus canopies. Such units are not considered feasible for schools with large enrollments. Canopies are advantageous in schools attended by handicapped pupils. Height of the canopy should accommodate the highest school buses. Each canopy support post adjacent to the driveway curb should have a three-(3) foot minimum setback from the curb to minimize the possibility of crushing a pupil between the support post and arriving school buses.
15. For areas that will be constantly utilized by heavy school buses, the type of pavement and base should conform to state highway department specifications.
16. All roads within the school site should be graded to avoid configurations that could impair a motorist's vision. It is suggested that a maximum 5% grade be allowed on all roads and, at entrance and exit points, a maximum 2% grade be allowed. Blind corners and intersections should be eliminated. Trees and shrubbery planted on the school site should not obstruct a motorist's vision.
17. Plans for the location of access and service roads should exclude conditions that would require school buses to be backed on the school premises.
18. All pupil loading and unloading should be provided for on the school site.
19. Plans for loading facilities should include separate areas specially designed for handicapped pupils. Attention should be given to entrance ramps and handrails.
20. Plans for roads and loading areas should accommodate emergency vehicles which must have access to the school at all times.
21. Where necessary, traffic control devices should be provided to assist school traffic to enter regular flow.

APPENDIX J

Evaluation Checklist For School Bus Driveways In The Vicinity Of The School

Name Of The School: _____ Date: _____

Location Of The School: _____

	YES	NO	DOES NOT APPLY
1. School bus loading and unloading areas are provided on the school site.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. When loading and unloading of school pupils take place on main thoroughfare in front of the school, the roadway has a minimum width of 40 feet of hard surface.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. The driveway leading to and from the loading and unloading area for school buses has a minimum width of 30 feet of paved surface.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	YES	NO	DOES NOT APPLY
4. If diagonal parking is provided for buses in the loading and unloading area, a minimum width of 60 feet of paved surface is available.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Parking for loading and unloading of pupils at school is bumper-to-bumper() or diagonal(); in either case, the necessity for backing does not exist.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. The school bus is not required to back anywhere on school property.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. All school bus movement on the school grounds is one-way in a counter-clockwise direction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. School bus traffic does not completely encircle the school building.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. The driver has proper sight distance at all points along the driveway.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Crosswalks for pupils do not exist at the entrance to the school bus driveway.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Separation is maintained between school bus traffic and all other traffic.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Vehicular pickup points for non-bus pupils are on separate driveway from that used by school buses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Curbing and suitable drainage are provided along driveways.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Curbing and driveway construction comply with state highway specifications.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. At ingress and egress areas to and from the school, there is a minimum radius on inner edge of driveway pavement from 50 to 100 feet.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. On the school site, there is a minimum radius of inner edge of driveway pavement of 60 feet.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Between reverse curves, at least a 50-foot tangent section is provided.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. At ingress and egress points a maximum grade of 2% is adhered to.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. A maximum grade of 5% is adhered to on the school bus driveway within the school site.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

NOTE: A "yes" answer for each of the items indicates a well-planned traffic pattern for school buses.

Signatures: Person making the report: _____
 Director of School Transportation: _____

NOTE: Most of the items included in this Evaluation Checklist are based on a 1966 Report of the Special Committee on School Plant Evaluation "School Planning: Safe Transporting." Bureau of Pupil Transportation, Department of Education, Trenton, New Jersey 08652.

APPENDIX K

Recommended Procedures For School Bus Drivers At Railroad Grade Crossings

General

1. The driver of any school bus, whether carrying passengers or not must, before crossing any track or tracks of a railroad, bring the bus to a full and complete stop within not less than fifteen feet or more than fifty feet from the rails nearest the front of the bus.
2. When drivers are making stops for railroad crossings, they shall carefully observe traffic and reduce speed far enough in advance to avoid trapping other motorists in panic stops or rear-end collisions with the bus. On multiple land roadways, no such stops shall be made in the center or left-hand lanes.
3. No special signs, signals or flashers designated for use on school buses shall be activated while the bus is stopped or stopping for this purpose. Note: The option to activate hazard lights or four-way flashers is at the discretion of the transportation agency.
4. The driver, when stopped, shall fully open the service door, and must, after the stop and while so stopped, listen and look in both directions along the track or tracks for approaching engines, trains or cars. Upon resumption of motion, the service door may be closed.
5. If the view of the track or tracks, for a distance of one thousand feet in either direction is not clear or is obstructed in any way, no portion of the bus may be propelled onto the tracks until, by personal inspection, the driver has made certain that no train is approaching. In no instance may a signal indicating safety be considered as conclusive or serve to abrogate this precaution.
6. Drivers shall, in every instance, cross in such gear that will not necessitate changing gears while traversing such crossing and shall not, under any circumstances, shift gears while actually crossing tracks or railroad crossings.
7. In the event that a train has passed over the crossing, no bus driver shall drive the bus onto the track or tracks until such train has sufficiently cleared the crossing so that the driver is certain that no train, hidden by the first train, is approaching on an adjacent track.
8. For improved vision and hearing, a window at the driver's left should be opened and all noisy equipment (fans, etc.) should be off until the bus has cleared the crossing.

At Crossings Controlled by Signals Only

1. In addition to the above, the driver of a school bus which has stopped at any railroad track or tracks where there are flashing red lights and/or bells in operation, shall not proceed across such track or tracks unless by authorization from a law enforcement officer or train personnel, though this does not relieve the driver of personal responsibility for safe crossing.
2. In the event that switching operations or stopped trains delay the use of the crossing unnecessarily for frequent or extended periods of time, complaint should be made through proper channels to railroad management and traffic authorities.

At Crossings Controlled by Crossing Gates or Barriers

1. No bus driver shall drive the bus through, around or under any crossing gate or barrier at a railroad crossing while such gate or barrier is closed or being opened or closed.
2. The bus driver must never accept a lack of movement as indicating that the device is either in or out of order or not properly handled, but must always take a railroad grade crossing as a conclusive warning of danger and must not cross the tracks until he has conclusively ascertained that no train is approaching.

Weather Conditions

During wet, stormy or foggy weather, before placing part of the bus on the tracks, the driver must know conclusively that the crossing can be made safely. Any use of flares, etc., in addition to warning signals or devices maintained at such railroad crossings, must be taken as an additional warning of danger.

Management of Passengers

When any school bus must stop to cross any railroad track, all passengers must be silent until the crossing is completed. A signal for silence shall be given by the driver in whatever manner is deemed suitable.

Adapted from Fact Sheet, "Recommended Procedures for School Bus Drivers at Railroad Grade Crossings," revised, School Transportation Section, 1984, National Safety Council, 444 N. Michigan Avenue, Chicago, Illinois 60611.

APPENDIX L

Trip Request Form

Trip Date _____	School _____	
Trip Destination _____		
Depart from _____	No. Passengers _____	
Extra Equipment _____		
Departure Time _____	Arrival Time _____	
Meal Stop Required <input type="checkbox"/> yes <input type="checkbox"/> no If yes, where _____		
Purpose of Trip _____		
Transportation Requested by _____	Date _____	
Approved by _____	Date _____	
Reimbursement Category _____		
Transportation Use		
Vehicle Assigned _____	Driver _____	
Spot Time _____	Spot Location _____	
Routing Information _____		

Dispatcher Signature _____	Date _____	
Time Out _____	Time In _____	Total Time _____
Mileage Out _____	Mileage In _____	Total Miles _____
Actual No. Passengers _____		
Remarks _____		

Driver's Signature _____	Date _____	

APPENDIX M

Evacuation Procedures for Activity Trips and Field Trips

In order to ensure the safety of school bus passengers in an actual emergency, every school bus driver assigned to transport students on activity trips or field trips, shall assign an evacuation team prior to each trip. The team may consist of teachers, coaches, students or any other passenger.

Passengers assigned to evacuation teams must be seated where they can effectively carry out their responsibilities in an emergency.

Each Evacuation Team will consist of at least the following:

1. A passenger assigned to set the parking brake, turn off the engine, turn on overhead flashers and to call in on the radio or other means, and report the incident to the Transportation Department, in case the driver is unable to do so.
2. A passenger assigned to lead passengers to a safe location at least 100 feet from the bus and for taking the first aid kit off the bus.
3. Two passengers assigned to stand outside the bus, next to the front door, to help students exit the bus and for taking the fire extinguisher.

4. Two passengers assigned to stand outside the bus next to the rear door, to help students exit the bus.

In addition to assigning an evacuation team, the following information shall be discussed and/or demonstrated prior to each activity trip or field trip:

1. Location and use of the fire extinguisher.
2. Location of the first aid kit.
3. Location of the warning reflectors.
4. Location and use of all emergency exits.
5. How to shut off the engine and set the parking brake.
6. How to open the service door, to include, safety releases on manual, air or vacuum doors, if so equipped.
7. Instruct passengers to keep aisles clear at all times and not to block emergency exits.

The driver of this trip did assign an evacuation team and explained the emergency procedures to our group.

Sponsor

APPENDIX N

Guidelines for Enroute Emergency Bus Evacuation Procedures

The intent of this procedure is to provide guidelines for evacuating a bus only when absolutely necessary for the safety of students and staff in an emergency situation.

Preparing An Emergency Evacuation Plan:

Bus staff should have an emergency evacuation plan which considers the individual capabilities and needs of each student, the type of behavior which might be exhibited during an emergency evacuation, and the

type of wheelchair or support equipment being used for students. Some issues to consider in establishing an evacuation plan are:

1. Which students could help, and to what extent.
2. How to deal with individual emergencies during the evacuation process, such as seizures.
3. Whether students should be evacuated in their wheelchairs, or removed from their wheelchairs before evacuation.

4. How to disconnect or cut wheelchair securement and occupant protection equipment, including belts, trays, and other support equipment.
5. Identify which students might run after evacuation so they could be evacuated last.
6. Know the length of time a student requiring life support equipment or medical care procedures can survive if such service is interrupted or delayed during the evacuation process.

Every driver and/or attendant should be able to physically carry-out their emergency evacuation plan upon request without hesitation. Many emergencies only allow 3 to 5 minutes to complete an evacuation before possible serious injury to students might occur.

Assessing The Need To Evacuate:

Student safety and control is best maintained by keeping students on the bus during an emergency and/or impending crisis situation if doing so does not expose them to unnecessary risk or injury. A decision to evacuate should include consideration of the following conditions:

1. Is there a fire involved?
2. Is there a smell of raw or leaking fuel?
3. Does the possibility exist that the bus will roll/tip causing further threat to safety?
4. Is the bus likely to be hit by other vehicles?
5. Is the bus in direct path of a sighted tornado?
6. Would evacuating students expose them to speeding traffic, severe weather, or a dangerous environment?
7. Considering the medical, physical, and emotional condition of the students, does staying on the bus or evacuating pose the greatest danger to the students' safety?

General Procedures To Follow For Emergency Evacuation:

1. Keep the situation as orderly and low-key as possible.
2. If time and conditions permit, bus staff should use their communication system to advise their office:

- A. Their exact location, including nearest intersecting road or familiar landmark.
 - B. The condition creating their emergency.
 - C. The type of assistance needed (police-fire-ambulance).
 - D. Notification that the bus is being evacuated.
3. Analyze conditions to determine safest exit from bus.
 4. During evacuation, monitor conditions and adjust procedures to meet unexpected circumstances.
 5. Move evacuated students to the nearest safe location at least 100 feet from the bus.
 6. Be prepared to give information to emergency medical personnel regarding individual students' medical or physical requirements.

Equipment Considerations:

1. Bus staff should, as part of their pre-trip inspection, familiarize themselves with the location and method of opening all emergency exits.
2. If time permits, a lift platform can be lowered half the distance to the ground, providing a step for evacuating wheelchairs. If there is a smell of spilled fuel, the lift should be operated manually.
3. When re-entry to the bus is not probable, communication equipment and first aid kits can frequently be passed through a window, making them accessible outside the bus. Consideration should also be made for student medication, if carried and needed.
4. If a large bus is being used, and evacuation is made through the rear exit door, consideration should be given to the method to be used for re-entry to the bus, if necessary, considering the height of the floor from the ground. Some states allow a stirrup-type step on the rear bumper.
5. If a battering ram is needed, a fire extinguisher can often serve that purpose.
6. A belt cutter should be stored in the bus, in a location readily accessible to the driver. The cutter should have a protected mouth to restrict the entry of fingers, etc.

Local District Policy:

Bus staff should be familiar with local district policy regarding:

1. Evacuation procedure to follow when enroute and a tornado is sighted, with no shelter near.
2. The type of medical information to be available on long distance trips in case of student injury.

Note: The safety of the bus and equipment is secondary to the safety of the students. No attempt should be made to save equipment or personal items until all students are removed from the bus, safely out of danger, and supervised.

APPENDIX O

Special Education Department Forms

Form 1

A. Consent For Disclosure Of Medical Information And Records

To: _____

 (Physician's Name and Address)

I, _____, the (parent) (guardian) of _____ (Student)

consent and authorize you to disclose and provide to the _____ its
 (School District)

nursing and other necessary staff, upon their request, any information or records which you have or have obtained concerning the diagnosis, evaluations, tests, medical problems or conditions, medications, or treatments of my child or ward named above.

It is the expressed intent of this document to waive any and all privileges which I or my child or ward might have with respect to disclosure of the above information and records to the school district, including the doctor-patient privilege, psychologist-client privilege, and social worker-client privilege.

 Signature of Parent or Guardian

Dated: _____

Please Return To: _____

B. Request For Medical Verification Of Health Status And Needs

_____ School District

(Address)

Name: _____ Birthdate: _____

Address: _____ Phone: _____

Parent/Guardian Name: _____ Phone: _____

Address (if Different): _____

Physician: _____ Phone: _____

Note to Physician: Should you have any questions regarding this request, please contact
_____; Phone _____

I. Verification Of Medical, Health And Behavior Status.

- A. Briefly describe the current medical, health and behavioral status.
- B. Identify any medical conditions not addressed in A above.
- C. Identify any health concerns that are not addressed in A above.
- D. Identify any behavioral concerns that are not addressed above.

II. PARTICIPATION IN THE SCHOOL DAY PROGRAM

- A. Briefly describe the staff supervision and interventions necessary for the student to safely participate in the normal school day program given the student's health and medical status.
- B. Identify the training required for all staff including bus attendants and drivers to provide the supervision and interventions addressed in A above.
- C. Identify any additional restrictions or modifications in school activities or medical care that would be necessary for student to safely participate in the school day program.
- D. Identify any additional special equipment, aids, restraints, or mobility assistance needed for student to safely participate in the school day program.

C. Medical Procedure Authorization

I delegate and authorize the staff* of the _____ School District to perform for _____ (student) the acts, tasks, and functions indicated on the Request for Medical Verification of Health Status and Needs, dated _____ which I previously provided to the district. This authorization is subject to the condition that district staff assigned to perform these activities have been provided the required training as specified in the above Request.

I have reviewed the attached procedures for _____ (procedure) which will be utilized and approve them, subject to any specific modifications necessary for this student which I have noted on the procedures.

I agree to supervise the performance of these activities and procedures by being continuously available through direct communications with district staff performing them and by regularly reviewing the student's health/medical status and needs, as well as the procedures being utilized by the staff.

Signature of Physician

Date

D. Student Transportation Card—Handicapped Students

Student's Name _____ Age _____

Address _____ Home Phone _____

Father's Work Ph _____ Mother's Work Ph _____ Emergency Ph _____

Please check appropriate type of transportation required for your child:

- Walks to bus unassisted Walks to bus, but needs assistance Needs to be carried
 Requires a car seat Wheelchair Requires special restraint

Needs to be met at school? _____ Other (Specify) _____

On return/home, needs to be met at Bus Stop? _____

Names & Addresses of persons nearby student's residence who have consented to care for the student if the parents are not available:

Name _____ Name _____ Name _____

Address _____ Address _____ Address _____

Phone _____ Phone _____ Phone _____

- Please check if any of the following applies to your child: Asthma Heart Disease Diabetes
 Chronic Respiratory Problems Blind Deaf Non-Verbal Bee Sting Hemophiliac
 Allergies—to what? _____

Seizures: How long does seizure last? _____ How often do they occur? _____

_____ Action needed, if any _____

Is your child on medication? Yes No If yes, what medication, what dosage, and when given? _____

Family Doctor _____ Address _____

Doctor's Phone _____ Family designated hospital _____

Parental Contact: If possible and practical, in the event of major emergency, parent contact will be made.

Parental Approval: If in the opinion of the driver a major emergency exists, the parent(s) have agreed in writing and will assume the cost of:

1. Contacting the family doctor Yes No
2. Contacting any doctor available Yes No
3. Contacting rescue squad Yes No
4. Transporting to designated hospital Yes No

Other Helpful Information: _____

As parent or guardian, I agree to one or more of the above procedures as indicated and agree that this information may be shared with my child's transporter. **CONFIDENTIALITY WILL BE MAINTAINED**

Date _____ Parent or Guardian's Signature _____

DO NOT WRITE BELOW THIS LINE

Bus Company _____ Bus No. _____ School Attending _____

Telephone _____ Special Instructions for Driver _____

**SPECIAL RESOLUTION BY THE DELEGATES OF THE ELEVENTH
NATIONAL CONFERENCE ON SCHOOL TRANSPORTATION**

Whereas, the nation's greatest resource is its children, and

Whereas, their safety is one of its major public priorities, and

Whereas, the nation's largest most cost efficient mass transportation system is comprised of 370,000 school buses and transports more than 22 million passengers daily in excess of 4 billion miles annually; and

Whereas, completed behavioral research studies substantiate the belief that the passive restraint systems offer greater protection for children transported without adult supervision, and

Whereas, improvements in collision protection and the development of the passive restraint system incorporated in the manufacture of school buses since April 1, 1977, are directly attributable to the extensive research conducted by the governments of the United States and Canada, and

Whereas, extensive research conducted by these governments, and other public and private agencies within their domains, have yielded negative conclusions relative to the mandated installation of seat belts on school buses;

Therefore, be it resolved

1. That local, state and federal governments and the general public recognize and affirm the outstanding safety record of school buses; and

2. That local, state and federal governments and the general public recognize the passive restraint system in school buses manufactured after April 1, 1977, as being a more effective passenger protection system in school buses than the protection provided by seat belts; and

3. That local, state and federal governments discourage the mandatory installation and use of seat belts in school buses until scientific research proves them to be more effective in injury prevention than the existing passive restraint systems; and

4. That local, state and federal governments and interested organizations conduct sound, comprehensive testing on current occupant protection systems in school buses to determine if the current passive restraint system in school buses can be improved to provide greater safety for students; and

5. That all states be encouraged to accelerate the replacement of school buses manufactured prior to April 1, 1977; and

6. That a copy of this resolution be transmitted to the President of the United States and to the leadership of the United States Congress and the Governors of each state.

**Be It Resolved That The Delegates Of The Eleventh National Conference
On School Transportation**

1. Urge continued research to improve the safety of handicapped pupils transported in wheelchairs and other seating devices.

2. Urge wheelchair manufacturers to design and construct wheelchairs with the capability of withstanding crash forces equal to the safety provided by the Federal Seat Standards.

3. Believe the safety interests of medically fragile children who can not utilize wheelchairs or conventional school bus seats can best be served through other medically-oriented means and therefore, urge NHTSA to explore, expeditiously, this concept with other federal organizations to jointly develop transportation programs

that can meet the special needs of medically fragile children.

4. Urge the National Highway Traffic Safety Administration to establish and prescribe valid strength requirements for joints and outside bus body panels. (FMVSS 221)

5. Urge state and local agencies to utilize vehicles which meet school bus federal standards for construction and operation.

6. Urge the National Committee on Uniform Traffic Laws and Ordinances to evaluate the effectiveness of its recommended law on overtaking and passing stopped school buses.

7. Urge school bus body manufacturers and replacement equipment suppliers to continue to develop, test, certify and offer for sale, seating materials with improved fire resistance.
8. Urge Governors' Highway Safety representatives in all states to continue to support school bus driver training through the funding established in Section I, 402 of Title 23, USC.
9. Urge the School Bus Manufacturers' Institute to develop standards for consistent coding of all school bus chassis and body wiring; to provide for similar color codes of wiring for given chassis circuits; and to provide for body continuations of those circuits among all school bus manufacturers.
10. Urge college and university book stores, state departments of education, other appropriate state agencies; professional associations and libraries to act as repositories for the acquisition and dissemination of the proceedings of the Eleventh National Conference on School Transportation.
11. Encourage the editors of professional trade journals and newsletters written for the school transportation industry to provide an improved and expanded base of knowledge and understanding of school transportation activities.
12. Urge the body and chassis manufacturers to provide training facilities throughout the country so that school bus mechanics can be properly trained, certified, and classified for employment purposes.
13. Urge the Steering Committee to research options for an interior storage alternative which will meet safety criteria concerns. (i.e. airline type overhead storage compartments)
14. Urge NHTSA to conduct fuel system integrity tests and develop performance standards for alternate fuels to ensure that students be afforded the same level of protection as those transported on buses powered by conventional fuels.
15. Urge the United States Congress to authorize and direct the U.S. Department of Transportation to establish a new DOT organizational effort and intra-agency entity to address the full spectrum of highway/traffic safety needs of America's school age population and develop a national plan for pupil transportation.
16. Urge the S.B.M.I. to develop standards for the consistent placement of the accessory switch panel on Type B, C & D buses and that a standard arrangement of the switches on said panel be agreed upon.
17. Encourage that the Writing Committee and sub-committee membership for the 1995 and all future conferences be divided equally between the four (4) regions as recognized by the National Association of State Directors of Pupil Transportation and limited to one (1) state representative per committee to the greatest extent possible.
18. Urge the writing committees to adopt procedures that bring forth preplanned proposals to the delegates in a written timely manner for reconsideration and accept as many proposed changes as late as possible to be printed and presented to the delegates in writing and/or viewed by overhead projection when feasible.
19. Urge that a committee be formed to investigate the practicality of designing a rear door to provide for the rapid and safe evacuation of all students in case of a fire or other emergencies.

**Be It Further Resolved That The Sponsoring Organizations
(NASDPTS, NAPT, NSTA, NSTA, NSC, SBMI, AND CMSU):**

1. Review the progress being made toward realization of the goals established for school transportation by the Eleventh National Conference on School Transportation and prepare for future conferences as the need arises.
2. Provide copies of these resolutions to school bus body and chassis manufacturers, the officials of the National Highway Traffic Safety Administration, Environmental Protection Agency, and any other agency, or organization and/or individual deemed appropriate.

3. Provide the school transportation industry via newsletters, professional journals, and other media with status reports as to the publishing and availability of the proceedings of the Eleventh National Conference on School Transportation.
4. Invite a representative from the National Transportation Safety Board, National Highway Traffic Safety Administration, the Insurance Institute for Highway Safety, and other appropriate agencies and organizations to ensure that all available information and input is provided for discussion on key issues.
5. Continue their efforts to encourage professional personnel working in areas within or allied with school transportation to participate in future national conferences.
6. Encourage transportation administrators to support the establishment of a central collection point for data and information relative to court actions, opinions, and judgements against transportation officials, employees, and operations.
7. Appoint a special committee, consisting of a state or local transportation person as the chairman and at least one representative from the School Bus Manufacturers Institute and one representative from the chassis industry, to provide technical information to the writing committees and Conference during the Twelfth National Conference on School Transportation.

RESOLUTIONS OF APPRECIATION

1. Express appreciation to the National Association of State Directors of Pupil Transportation Services, National Association for Pupil Transportation, National School Transportation Association, School Transportation Section-National Safety Council, The School Bus Manufacturers Institute, and Central Missouri State University for sponsoring this national conference.
2. Commend Dr. Robert L. Marshall, Dr. Robert L. Baldwin, associates and staff of Central Missouri State University, Don Carnahan, General Conference Chairman, and Dr. Dwight Carlson, On-Location Conference Chairman, for the excellent manner in which the conference was organized and conducted.
3. Recognize and express appreciation to Stanley A. Abercrombie and J. Pope Baird for their continuing commitment to the national movement for safe and efficient school transportation.
4. Recognize the continuing interest and leadership of Dr. Norman Key as reflected in his numerous articles on school transportation and his establishment of a permanent scholarship at Central Missouri State University for school transportation and other safety majors.
5. Express appreciation to the National Safety Council for publishing and marketing the proceedings of the Eleventh National Conference on School Transportation.

SPECIAL RESOLUTION BY THE DELEGATION OF THE ELEVENTH NATIONAL CONFERENCE ON SCHOOL TRANSPORTATION

Whereas, the greatest domestic threat facing our nation today is drugs; and

Whereas, the National Institute for Drug Abuse reports that employee drug use has increased the on-the-job accident rate three-fold; and

Whereas, the U.S. Department of Transportation has promulgated comprehensive drug testing regulations for motor carriers who operate commercial motor vehicles in interstate commerce, including buses; and

Whereas, the U.S. Department of Transportation has excluded school bus motor carriers and in-

trastate bus motor carriers from the comprehensive drug testing regulation requirements; and

Whereas, at the direction of the U.S. Supreme Court, a Federal Appeals Court in the District of Columbia recently ruled that school bus drivers can be legally tested for drugs; and

Whereas, the nation's greatest resource is its children, their safety and protection is our highest priority and their education is our investment in the future;

Now therefore, be it resolved

1. That the National Conference on School Transportation strongly urges the U.S. Congress to develop and promulgate mandatory drug testing legislation for drivers of

buses involved with transporting school pupils from home to school and on school-related activities.

SPECIAL RESOLUTION BY THE DELEGATES OF THE ELEVENTH NATIONAL CONFERENCE ON SCHOOL TRANSPORTATION

Whereas, the safe transportation of students is the first priority in pupil transportation; and

Whereas, compartmentalization has proven to be an effective passive restraint system for pupils; and

Whereas, there is reason to believe that seat back height may be a factor in providing this restraint system;

Therefore, be it resolved that

1. NHTSA study and develop crash data which will help determine the most appropriate seat height.

2. This testing and study incorporate operational considerations involving the ability of school bus drivers to see and provide pupil control, whereas driver vision is important to the safe operation of school buses at intersections and railroad grade crossings of greater than 90 degrees, and whereas seat back height may affect passenger evaluation and the operation of the number of emergency exits which may be deemed necessary.

3. Recommendations be made that incorporate the consideration for both construction and operational needs.

SPECIAL RESOLUTION BY THE DELEGATION OF THE ELEVENTH NATIONAL CONFERENCE ON SCHOOL TRANSPORTATION

Whereas, it is important to provide continuity for the conference; and

Whereas, there is a need to provide on-going information on the proceedings and actions of the conference;

Therefore, be it resolved that

1. Interim and steering committees for the 12th National Conference On School

Transportation meet at least once a year and provide to national trade publications and professional pupil transportation journals a status report of the resolutions passed by the 11th National Conference On School Transportation, the status of the collection of uniform accident data by states and other appropriate conference information.

SPECIAL RESOLUTION BY THE DELEGATION OF THE ELEVENTH NATIONAL CONFERENCE ON SCHOOL TRANSPORTATION

Whereas, there is a need to maintain a direct line of communication between NHTSA and users of school buses; and

Whereas, the delegation which met in Warrensburg in 1990 as a representative group charged with writing standards for school buses and operation; and

Whereas, these representatives have been selected by each State Director of Transportation;

Therefore, be it resolved

1. That in recognition of the current school bus safety rulemaking activities underway at the *National Highway Traffic Safety Administration* in the areas of FMVSS No. 217,

"Bus Window Retention and Release" for emergency exits; FMVSS 221, "School Bus Body Joint Strength"; FMVSS No. 301, "Fuel System Integrity"; FMVSS No. 302, "Flammability of Interior Materials"; FMVSS No. 111, "Rearview Mirrors"; and FMVSS No. 131, "School Bus Pedestrian Protection Devices", the 11th National Conference on School Transportation resolves to support NHTSA in these endeavors and do provide assistance and comment to NHTSA as requested and appropriate.

2. That where meaningful and practicable, the 11th National Conference on School Transportation recommends that NHTSA apply the same safety performance requirements to all school bus types.
3. That NHTSA shall provide a copy of each public notice on school bus safety rulemaking to the state directors of pupil transportation, to the school bus manufactures, and the national school bus associations for the purpose of eliciting their technical and operational input into the rulemaking process.
4. That each State Director of Pupil Transportation gather the necessary data and information from knowledgeable organizations and individuals within their state in preparing responses to the NHTSA public notices of rulemaking.
5. That state directors respond either pro or con to all NHTSA public notices of rulemaking.

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OLC—On Location Chairman	ICC—Interpretation Committee Chairman
SP—Special Conference Guest	IC—Interpretation Committee
GCC—General Conference Chairman	RC—Resolutions Committee
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