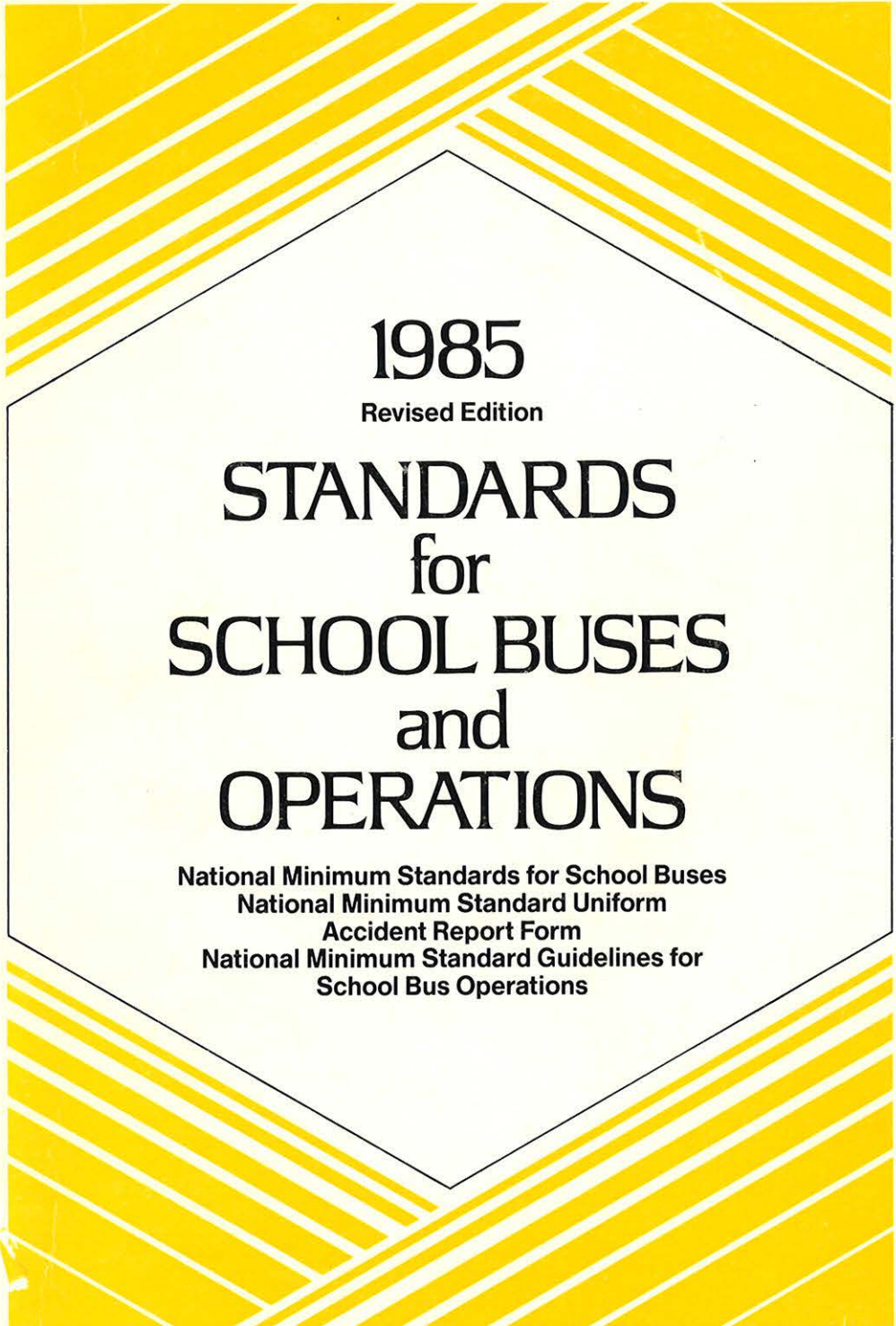




1985

Revised Edition

**STANDARDS
for
SCHOOL BUSES
and
OPERATIONS**

**National Minimum Standards for School Buses
National Minimum Standard Uniform
Accident Report Form
National Minimum Standard Guidelines for
School Bus Operations**

**NATIONAL MINIMUM STANDARDS FOR
SCHOOL BUSES
NATIONAL MINIMUM STANDARD
UNIFORM ACCIDENT REPORT FORM
AND
NATIONAL MINIMUM STANDARD GUIDELINES
FOR SCHOOL BUS OPERATIONS
1985 Revised Edition**

Recommendations of

**THE TENTH NATIONAL CONFERENCE ON
SCHOOL TRANSPORTATION**

Central Missouri State University
Warrensburg, Missouri
May 19-24, 1985

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FOREWORD

The 1985 National Conference on School Transportation was the latest in a series beginning in 1939 and continuing in 1945, 1948, 1951, 1954, 1959, 1964, 1970 and 1980. 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 them and added standards for small vehicles of 10 to 18 passengers. Both standards were further revised by the 1948 Conference. In 1951 an interim conference formulated tentative standards for transit and metropolitan types of school buses, and these were incorporated in the revised standards that came out of the 1954 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 operational 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.

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 applicable to motor vehicles sold in the United States. Whenever such standards either differ from, go beyond, or are in addition to the standards adopted by the 1985 National Conference, they automatically apply to school buses sold in all the states.

The structure for the 1985 Conference and its operating guidelines was carried out by the Interim Committee and representatives from Central Missouri State University with the cooperation of the School Transportation Section of the National Safety Council. Funding for the conference was shared solely by each individual participant of the Interim Steering and Writing Committees, and all delegates at the conference.

Bill G. Loshbough
General Conference Chairman

OBJECTIVES AND GUIDING PRINCIPLES

Since the first National Conference on School Bus Standards in 1939, certain objectives and guiding principles have had a vital role in the development of the minimum 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 guide-posts for making decisions on the minimum 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 minimum standards should be made by states only in order to permit desirable adjustments to local needs and only when such adaptations do not:
 - a. Basically conflict with the recommended National Minimum 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 Minimum 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 MINIMUM STANDARDS FOR SCHOOL BUSES

In order that these minimum 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 minimum 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 minimum 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 minimum 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. Norman Loper, Coordinator of Pupil Transportation, Alabama Department of Education, 304 Dexter Avenue, Montgomery, AL 36130.

The Interim Committee succeeds the Conference Steering Committee between conferences. Requests for modification of these Standards and development of new Standards should be directed to the chairman of the Interim Committee, addressed as follows: Mr. Bill G. Loshbough, Asst. State Supt. for Transportation, Dept. of Education, Education Bldg., Santa Fe, NM 87501-2786.

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 minimum 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.

As the title of this document suggests, these are intended to be minimum standards. However, it is in the interest of the entire school bus industry to maintain uniformity in vehicle identification (e.g., National School Bus Yellow, eight light warning system, stop signal arm).

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 shall be furnished and properly installed by the chassis manufacturer to meet engine specifications.

AXLES

1. The front and rear ends 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 inches (8) of mercury or less. An illuminated gauge 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 shall be provided.
 - 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 percent 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 the hydraulic-assist lines shall be protected from excessive heat and vibration and be so installed as to prevent 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.
2. Front bumper shall extend beyond forward-most part of body, grille, hood and fenders and shall extend to outer edges of fenders at bumper 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 bumper, chassis or body.

CERTIFICATION

1. Chassis manufacturer will, upon request, certify to the state agency having pupil transportation jurisdiction that its 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 National School Bus Yellow. (See Appendix)
2. Hood may be painted with non-reflective paint.

DRIVE SHAFT

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

ELECTRICAL SYSTEM

1. Battery:
 - a. Storage battery shall have a minimum cold cranking capacity rating equal to the cranking current required for 30 seconds at 0 degrees Fahrenheit (-17.8 C) and a minimum reserve capacity rating of 120 minutes at 25 Amp. 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 SBMI School Bus Design Objectives, January, 1985. (See Appendix)

2. Generator or Alternator:

- a. Type A bus shall have a minimum 60 ampere per hour alternator.
- b. Type B bus shall have a minimum 80 ampere per hour alternator.
- c. Type C and D buses shall have a generator or alternator with a minimum rating of at least 80 amperes (in accordance with Society of Automotive Engineers rating—See Appendix) with minimum charging of 30 amperes at manufacturer's recommended engine idle speed (12 volt system), and shall be ventilated and voltage-controlled and, if necessary, current-controlled.
- d. Type A, B, C and D buses, equipped with an electrical power lift, shall have a minimum 100 ampere per hour alternator.
- e. Direct-drive generator or alternator is permissible in lieu of belt drive. Belt drive shall be capable of handling the rated capacity of the generator or alternator with no detrimental effect on other driven components.
- f. Refer to SBMI School Bus Design Objectives, January, 1985 (See Appendix) for estimating required generator or 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 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).

EXHAUST SYSTEM

1. Exhaust pipe, muffler and tailpipe shall be outside 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 and shall extend 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 centerline as follows:

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

4. Exhaust system on 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 designed for the transportation of special education pupils may be routed to the left of the right frame rail to allow for the installation of a lift 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 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 frame, and welding to frame shall not be permitted except as provided or accepted by chassis manufacturer.
5. Frame lengths shall be provided in accordance with SBMI School Bus Design Objectives, January, 1985. (See Appendix)

FUEL TANK

1. Fuel tank or tanks of minimum 30 gallon capacity with a 25 gallon actual draw shall be provided by the chassis manufacturer. It/they shall be filled from 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 School Bus Design Objectives, January, 1985. (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 School Bus Design Objectives, January, 1985. (See Appendix)
6. The fuel tank on vehicles constructed for transporting special education pupils may be mounted on left chassis rail or behind rear wheels.
7. Auxiliary tank may be added in accordance with SBMI School Bus Design Objectives, January, 1985. (See Appendix)

GOVERNOR

1. An engine governor is permissible. However, when it is desired to limit road speed, 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 tachometer shall be installed so 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 suitable for attaching $\frac{3}{4}$ -inch pipe thread/hose connector. The engine shall be capable of supplying water having a temperature of at least 170 F 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. (SBM1 Standard No. 001—*Standard Code for Testing and Rating Automotive Bus Hot Water Heating and Ventilation Equipment.*) (See Appendix)

HORN

1. Bus shall be equipped with horn or horns of standard make, each horn capable of producing complex sound in bands of audio frequencies between 250 and 2,000 cycles per second and tested per Society of Automotive Engineers Standard J377. (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 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 vehicle 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 instrument panel in such a manner that each is clearly visible to driver while in normal seated position in accordance with SBMI School Bus Design Objectives, January, 1985. (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 of replaceable element shall be provided and shall be connected by flexible oil lines if it is not of built-in or engine mounted design. Oil filter shall have capacity of approximately one (1) quart.

OPENINGS

1. All openings in floorboard and 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 manufacturer 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 horsepower of the engine at the manufacturer's recommended maximum revolutions per minute.

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 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, C and D school buses.
3. All tires on any given vehicle shall be of same size and ply rating.
4. If vehicle is equipped with 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 accessible location outside passenger compartment.

TOW EYES OR HOOKS

1. Tow eyes or hooks may be furnished front and rear and attached so as

not to project beyond the front or rear bumpers. Tow eyes or hooks attached to the frame (chassis) shall be furnished by chassis manufacturer.

TRANSMISSION

1. When 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 detent between each gear position when the gear selector quadrant and shift selector are not steering column mounted.
2. When 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 wheel base of 264 inches or less shall have a right and left turning radius of not more than 42½ feet, curb to curb measurement.
2. Chassis with a wheel base of 265 inches or more shall have a right and left turning radius of not more than 44½ feet, curb to curb measurement.

UNDERCOATING

1. Chassis manufacturer shall coat undersides of front fenders with rust-proofing compound for which compound manufacturer has issued notarized certification of compliance to chassis builder that compound meets or exceeds all performance and qualitative requirements of paragraph 3.4 of Federal Specification TT-C-520b (See Appendix) using modified test.

WEIGHT DISTRIBUTION

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

BUS BODY STANDARDS

AISLE

1. Minimum clearance of all aisles shall be 12 inches.
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) specifying 97 ± 4 dBA for rubber tired vehicles. (See Appendix)

BATTERY

1. Battery is to be furnished by chassis manufacturer.
2. When battery is mounted as described in Chassis Standard (pages 7, 8), the body manufacturer shall securely attach battery on slide-out or swing-out tray in a closed, vented compartment in the body skirt, whereby battery may be exposed to outside for convenient servicing. Battery compartment door or cover shall be hinged at front or top and secured by adequate and conveniently operated latch or other type fastener.

BUMPER (FRONT)

See Chassis Standard

BUMPER (REAR)

1. Bumper shall be of pressed steel channel or equivalent material at least $\frac{3}{16}$ -inch thick and 8 inches wide (high), and of sufficient strength to permit pushing by another vehicle without permanent distortion.
2. It shall be wrapped around back corners of bus. It shall extend forward at least 12 inches, measured from rear-most point of body at floor line.
3. Bumper shall be attached to chassis frame in such manner that it may be easily removed, shall be so braced as to develop full strength of bumper section from rear or side impact, and 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 floor line.
5. The bumper provided by the chassis manufacturer may be used on Type A vehicles.

CEILING

See Insulation and Interior, Body Standard

CHAINS

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 arrow, and lettering shall be black. As an alternative, the rear bumper may be covered with reflective material.

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 bus body manufacturer.
2. Construction shall be reasonably dustproof and watertight.

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 under control of driver, and designed so as to afford easy release and prevent accidental opening. When hand lever is used, no part shall come together so as to shear or crush fingers.
- b. Service door shall be located on right side of bus opposite driver and within direct view of driver.
- c. Service door shall have minimum horizontal opening of 24 inches and minimum vertical opening of 68 inches. Type A vehicles shall have a minimum opening area of 1200 square inches.
- d. Service door shall be of 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 split-type door opens inward and the other opens outward, front section shall open outward.
- e. Lower as well as upper panels shall be of approved safety glass. Bottom of lower glass panel shall not be more than 35 inches from ground when bus is unloaded. Top of upper glass panel shall not be more than 6 inches from top of door. Type A vehicles shall have upper panel (window/s) 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.

2. Emergency Door:

- a. Emergency door shall be hinged on right side if in rear end of bus and on front side if on left side of bus. It shall open outward and shall 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.
- b. Upper portion of emergency door shall be equipped with approved safety glazing, exposed area of which shall be not less 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 emergency door.
- d. Words "EMERGENCY DOOR," both inside and outside 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.
- e. The emergency door 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.
- f. The side emergency door, if installed, must meet the requirements set forth in FMVSS 217, S 5.4.2.1, (b), regardless of its use with any other combination of emergency exits. (See Appendix)

FIRE EXTINGUISHERS

1. 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 so as to be easily read without moving the extinguisher from its mounted position.
2. 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.

FIRST-AID KIT

1. Bus shall have a removable, moistureproof and dustproof first-aid kit mounted in an accessible place within driver's compartment. This place shall be marked to indicate its location.
2. Suggested contents include:
 - 2-1" $\times$ 2 $\frac{1}{2}$ yards adhesive tape rolls
 - 24-sterile gauze pads 3" $\times$ 3"
 - 100- $\frac{3}{4}$ " $\times$ 3" adhesive bandages
 - 12-2" bandage compress
 - 12-3" bandage compress
 - 2-2" $\times$ 6 yards sterile gauze roller bandages
 - 2-nonsterile triangular bandages approximately 40" $\times$ 36" $\times$ 54" with 2 safety pins
 - 3-sterile gauze pads 36" $\times$ 36"
 - 3-sterile eye pads
 - 1-rounded end scissors

FLOOR

1. Floor in underseat area, including tops of wheelhousing, driver's compartment and toeboard, shall be covered with rubber floor covering or equivalent having minimum overall thickness of .125 inch.
2. Floor covering in aisle 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 type recommended by manufacturer of floor-covering material. All seams must be sealed with waterproof sealer.

HEATERS

1. Heaters shall be of hot-water type or combustion type.
2. If only one heater is used, it shall be of fresh-air or combination fresh-air and recirculating 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 throughout the bus temperature of not less than 40 degrees Fahrenheit at 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 function. 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 a shutoff valve installed in the pressure and return lines 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 approved by Underwriters Laboratories, Inc. (See Appendix) and 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. Heater motors, cores and fans must be readily accessible for service. Access panels shall be provided as needed.

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.
2. Only signs and lettering approved by state law or regulation, limited to name of owner or operator and any number 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 also, it shall be of fire-resistant material of type approved by Underwriters Laboratories, Inc. (See Appendix)
2. If floor insulation is required, it may be 5-ply, at least $\frac{5}{8}$ inches thick and/or it shall 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)

INTERIOR

1. Interior of bus shall be free of all unnecessary projections likely to cause injury. This standard requires inner lining on ceilings and walls. If ceiling is constructed so as 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 operating 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 90 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.
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 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 vehicle is about to stop on 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 front of vehicle.
 - (2). In addition to four red lamps described in (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 bus service door is opened.
 - (3). Area around lens of each alternately flashing signal lamp and extending outward approximately 3 inches shall be painted black. 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 lens, shall be painted on body or roof area against which signal lamp is seen (from distance of 500 feet along axis of vehicle). Visors or hoods with an appropriate black background to fit the shape of hoods/visors and roofcap may also be used.

- (4). 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 which are at least seven (7) inches in diameter and meet specifications of the Society of Automotive Engineers. (See Appendix) These signals must be connected to the chassis hazard warning 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 windows. Type A conversion vehicle lamps must be 21 square inches in lens area.
 - b. Buses shall be equipped with four combination red stop/tail lamps. 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.
 - c. 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 belt-line 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 which monitors 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 $\frac{1}{3}$ 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 $6\frac{1}{2}$ inches. A manual switch and a pilot light must be included to indicate when light is in operation.
7. Warning Device: 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.

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-coated and zinc-chromate 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 bus body, when subjected to 1000-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 Mirrors: Each bus shall have a minimum of one exterior left side and one exterior right side rearview mirror with a minimum of 50 square inches each of flat mirror glass. Type A and B vehicles may be manufacturer's standard. All exterior rearview mirrors must be adjustable to allow any driver to have visibility aft of the rear wheels at ground level.
3. Indirect Visibility: Each bus shall have a mirror system which will provide a clear, unobstructed view of the area in front of the bus and the area immediately adjacent to the left and right front wheels and at the entrance door when tested to the following:
 - a. Indirect Vision Mirrors: When a rod 30 inches long is placed upright on the ground at any point along a traverse line 1 foot forward of the forward-most point of a school bus and extending the width of the bus, at least 7 1/2 inches of the length of the rod shall be visible to the driver, either by direct view or by means of an indirect visibility system.
 - b. Bus types shall contain at least the following:

	LH Convex Rearview	LH Convex Crossview	RH Convex Crossview	RH Convex Rearview
Type A	X	X	X	X
Type B	X	X	X	X
Type C	X	X	X	X
Type D	X		X	X

Note: Elliptical or hemispherical mirrors may be substituted on a two-for-one basis if indirect visibility requirements are met.

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 body from chassis under severe operating conditions.
2. Insulating 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 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 96 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 same longitudinal area as upper rub rail, except at wheel-housing, 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 manufacturers' 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 locking retractor type seat belt shall be provided for the driver. Each belt section shall be bootied so as to keep the buckle and button-type latch off the floor and within easy reach of the driver. Belt shall be anchored in such a manner or guided at the seat frame so as to prevent the driver from sliding sideways from under the belt.

SEATS AND CRASH BARRIERS

1. All seats shall have minimum depth of 15 inches.
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. Seat, seat back cushion and crash barrier shall be covered with a material having 42-ounce finished weight, 54 inches width, and finished vinyl coating of 1.06 broken twill or other material with equal tensile strength, tear strength, seam strength, adhesion strength, resistance to abrasion, resistance to cold and flex separation.
4. Each seat leg shall be secured to the floor by a minimum of two (2) bolts, washers and nuts.
5. All seat frames shall be fastened to the seat rail with two (2) bolts, washers and nuts.

STEERING WHEEL

See Chassis Standard

STEPS

1. First step at service door shall be not less than 12 inches and not more than 16 inches from ground, based on standard chassis specifications.
2. Service door entrance may be equipped with two-step or three-step stepwell. Risers in each case shall be approximately equal. When plywood floor is used on steel, differential may be increased by thickness of plywood used.

- a. When three-step stepwell is specified, the first step at service door shall be approximately 10 to 14 inches from the ground when bus is empty, based on standard chassis specifications.
- b. Type D vehicles shall have a three-step stepwell with the first step at service door 12 to 16 inches from the ground.
3. Steps shall be enclosed to prevent accumulation of ice and snow.
4. Steps shall not protrude beyond 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 $\frac{3}{16}$ -inch rubber floor covering or other materials equal in wear resistance 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 angle to long dimension of step tread.
3. Three-sixteenth-inch ribbed step tread shall have a $1\frac{1}{2}$ -inch white nosing as integral piece without any joint.
4. Rubber portion of step treads shall have following characteristics:
 - a. Special compounding for good abrasion resistance and high coefficient of friction.
 - b. Flexibility so that it can be bent around a $\frac{1}{2}$ -inch mandrel both at 130 degrees Fahrenheit and 20 degrees 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. Flashing lamps 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" $\times$ 30" for Types B, C and D vehicles, and not less than 6" $\times$ 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.

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 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 1,000 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 tests 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 recommended 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 the 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 a minimum 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 unobstructed emergency opening 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.
 - 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 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 to be done at an accessible location and noted as splices on wiring diagram.
 5. A body wiring diagram of easy readable size shall be furnished with each bus body or affixed in an area convenient to the electrical accessory control panel.
 6. Body power wire shall be attached to 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.

SPECIAL EDUCATION SCHOOL BUS STANDARDS

INTRODUCTION TO SPECIAL EDUCATION SCHOOL BUS OR MPV

The specifications in this section are intended to be supplementary to specifications in the chassis and body sections. In general, special education 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 transportation for special education passengers is characterized by special 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.

The Ninth National Conference recognized the rapidity of change in this area of transportation and addressed this fact by passing a resolution calling for special sessions at the 1981 NAPT/NASDPTS and NSTA Conferences to update the proceedings of the conference relating to minimum standards for special education school buses and auxiliary equipment.

By federal regulation, buses, including school buses, are defined as vehicles designed to carry more than 10 persons. Vehicles with less than ten 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 different set of federal standards, does not preclude compliance with federal standards for school buses, or the use of National School Bus Yellow paint and school bus warning lamp systems.

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 wheelchair lift, wheelchair positions or other modifications, the capacity is reduced such that vehicles become MPVs, 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.

GENERAL REQUIREMENTS

1. School buses and multipurpose passenger vehicles designed for transporting children with special transportation needs shall comply with National Minimum Standards applicable to school buses.
2. School buses and multipurpose passenger vehicles designed for transporting children with special transportation needs shall comply with school bus Federal Motor Vehicle Safety Standards as applicable to their GVWR category.

3. Any school bus or multipurpose passenger vehicle that is used for the transportation of children who are confined to a wheelchair and/or other restraining devices which prohibit use of the regular service entrance, shall be equipped with a power lift, unless a ramp is needed for unusual circumstances.
4. Lift shall be located on the right side of the body, in no way attached to the exterior sides of the bus but confined within the perimeter of the school bus body when not extended.

AISLES

1. All aisles leading to the emergency door(s) from wheelchair area shall be of sufficient width (minimum thirty (30) inches) to permit passage of maximum size wheelchair.

COMMUNICATIONS

1. Special education buses may be equipped with a two-way radio communication system.

FASTENING DEVICES

1. Wheelchair fastening devices shall be provided and attached to the floor or walls or both to enable securement of wheelchairs in the vehicle. The devices must be of the type that require human intervention to unlatch or disengage. The fastening devices must be designed to withstand forces up to 2,000 pounds per tiedown leg or clamping mechanism or 4,000 pounds total for each wheelchair, whichever is the lesser of the two.
2. Additional fastening devices may be needed to restrain the student due to the many different configurations of chairs and exceptionalities.

GLAZING

1. Tinted glazing may be installed in all doors, windows and windshield.

HEATERS

1. An additional heater(s) may be installed in the rear portion of the bus on or behind wheel wells.

IDENTIFICATION

1. Buses with wheelchair lifts used for transporting physically handicapped children may display universal handicapped symbols located on the front and rear of the vehicle below the windowline. Such emblems shall be white on blue, shall not exceed 12 inches in size, and may be reflectorized.

POWER LIFT

1. Lifting mechanism shall be able to lift minimum pay load of eight hundred (800) pounds. A clear opening and platform to accommodate a 30-inch wide wheelchair shall be provided.
2. When the platform is in the fully up position, it shall be locked in position mechanically by means other than a support, or lug in the door.
3. 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.
4. Power lifts shall be so equipped that they may be manually raised in the event of power failure of the power lift mechanism.
5. Lift travel shall allow the lift platform to rest securely on the ground.
6. All edges of the platform shall be designed to restrain wheelchair and to prevent operator's feet from being entangled during the raising and lowering process.
7. Platform shall be fitted on both sides and rear with full width shields which extend above the floor line of the lift platform.
8. A restraining device shall be affixed to the outer edge (curb end) of the platform that will prohibit the wheelchair from rolling off the platform when the lift is in any position other than fully extended to ground level.
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 8 above. The lift platform must be skid resistant.
10. A circuit breaker or fuse shall be installed between power source and lift motor if electrical power is used.
11. The lift mechanism shall be equipped with adjustable limit switches or by-pass valves to prevent excessive pressure from building in the hydraulic system when the platform reaches the full up position or full down position.

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. In Type C and D vehicles, there shall be three (3) step risers, of equal height, in the entrance well.
- 2. An additional fold-out step may be provided which will provide for the step level to be no more than six (6) inches from the ground level.

RESTRAINING DEVICES

- 1. Seat frames may be equipped with attachments or devices to which belts, restraining harnesses or other devices may be attached.

SEATING ARRANGEMENTS

- 1. Flexibility in seat spacing to accommodate special devices shall be permitted due to the constant changing of passenger requirements.

SPECIAL LIGHT

- 1. Lights shall be placed inside the bus to sufficiently illuminate lift area and shall be activated from door area.

SPECIAL SERVICE ENTRANCE

- 1. Bus bodies may have a special service entrance constructed in the body to accommodate a wheelchair lift for the loading and unloading of passengers.
- 2. The opening to accommodate the special service entrance shall be at any convenient point on the right (curb side) of the bus and far enough to the rear to prevent the door(s), when open, from obstructing the right front regular service door (excluding a regular front service door lift).
- 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. The opening, with doors open, shall be of sufficient width to allow the

passage of wheelchairs. The minimum clear opening through the door and the lift mechanism shall be thirty (30) inches in width.

5. A drip moulding shall be installed above the opening to effectively divert water from entrance.
6. Entrance shall be of sufficient width and depth to accommodate various mechanical lifts and related accessories as well as the lifting platform.
7. 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 service doors.

SPECIAL SERVICE ENTRANCE DOORS

1. A single door may be used if the width of the door opening does not exceed forty (40) inches.
2. Two doors shall be used if any single door opening would have to exceed forty (40) inches.
3. All doors shall open outwardly.
4. All doors shall have positive fastening devices to hold doors in the open position.
5. All doors shall be weather sealed and on buses with double doors, they shall be so constructed that a flange on the forward door overlaps the edge of the rear door when closed.
6. If optional power doors are installed, the design shall permit release of the doors for opening and closing by the attendant from the platform inside the bus.
7. 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. These locking devices shall afford maximum safety when the doors are in the closed position. The door and hinge mechanism shall be of a strength that will provide for the same type of use as that of a standard entrance door.
8. Door materials, panels and structural strength shall be equivalent to the conventional service and emergency doors. Color, rub rail extensions, lettering and other exterior features shall match adjacent sections of the body.
9. Each door shall have windows set in rubber compatible within one-inch of the lower line of adjacent sash.

10. Door(s) shall be equipped with a device that will actuate a red flashing visible signal located in the driver's compartment when door(s) is not securely closed and ignition is in "on" position.
11. A switch shall be installed so that the lifting mechanism will not operate when the lift platform door(s) is closed.

APPENDIX, VEHICLE

SOCIETY OF AUTOMOTIVE ENGINEERS, INC.
400 COMMONWEALTH DRIVE
WARRENDALE, PA 15096
(412)776-4841

SCHOOL BUS MANUFACTURERS INSTITUTE
DIVISION OF TRUCK BODY AND EQUIPMENT ASSOCIATION
4907 CORDELL AVE.
BETHESDA, MD 20814
(301)652-8004

UNDERWRITERS LABORATORIES, INC.
333 PFINGSTEN RD.
NORTHBROOK, ILLINOIS 60062
(312)272-8800

PRODUCT STANDARD PSI-66
U.S. DEPARTMENT OF COMMERCE
14th AND E STREETS
WASHINGTON, D.C. 20230

AMERICAN SOCIETY FOR TESTING AND MATERIALS
1916 RACE STREET
PHILADELPHIA, PA. 19103

FEDERAL SPECIFICATION TT-C-520b
GENERAL SERVICES ADMINISTRATION
SPECIFICATION AND CONSUMER INFORMATION
DISTRIBUTION CENTER
WASHINGTON NAVY YARD
BUILDING 197
WASHINGTON, D.C. 20407

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, as follows:

C.I.E. Chromaticity coordinates		Daylight reflectance Y (%)			Dominant Wavelength (in millicrons)			Excitation Purity P (%)		
x	y	max.	std.	min.	max.	std.	min.	max.	std.	min.
.5211	.4549	-	41.	40.	584.5	583.5	582.5	-	93.7	89.0

At the 1980 Conference the colors in use were reviewed. A color standard was selected, slightly different from the above, and specific tolerances were chosen. These tolerances will insure a continuity of appearance from bus to bus, and within the same bus when different elements are finished or refinished at different times. Specification for the Standard Color, with light and dark tolerances (Upper and Lower Reflectances) are shown below in tabular form.

SPECIFICATION FOR STANDARD COLOR

For Source C				
CIE Chromaticity Coordinates		Reflectance Y (%)	Reflectance Tolerances	
x	y		Upper	Lower
.5089	.4408	40.14%	41.77%	38.45%

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, "Specification 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.

- G. If the motor vehicle's engine radiator fan drive is equipped with a clutch or similar device that automatically either reduces the rotational speed of the fan or completely disengages the fan from its power source in response to reduced engine cooling loads, the vehicle may be parked before testing with its engine running at high idle or any other speed the operator chooses for sufficient time, but not more than 10 minutes, to permit the engine radiator fan to automatically disengage.
- H. With the vehicle's transmission in neutral gear, the engine is accelerated to:
 - 1. Its maximum governed engine speed if it is equipped with an engine governor; or
 - 2. Its speed at its maximum rated horsepower, if it is not equipped with an engine governor, and the engine is stabilized at that speed.
- I. The A-weighted sound level reading on the sound level meter for the stabilized engine speed condition referred to in paragraph H is observed and, if it has not been influenced by extraneous noise sources, is then recorded.
- J. The vehicle's engine speed is returned to idle and the procedures set out in paragraphs H and I are repeated until two maximum sound levels within 2dBA of each other are recorded, the two maximum sound level readings are then averaged.
- K. The average obtained in accordance with paragraph J, with a value of 2 db(A) subtracted therefrom to allow for variations in test conditions and in the capabilities of meters, is the vehicle's interior sound level at the driver's seating position for the purposes of determining compliance with the requirements of this subsection.

NATIONAL MINIMUM STANDARD SCHOOL TRANSPORTATION UNIFORM ACCIDENT REPORT FORM

USING THIS MINIMUM STANDARD

Responsibility for implementing this accident reporting program should be given to the state agency that gathers accident statistics. If this state agency is not the one responsible for pupil transportation, then a cooperative policy between the two should be established for the development and implementation of all facets of the accident reporting program.

The responsible state agency/agencies should add to its administrative operation policy the comprehensive responsibility for procuring the accident reports and distributing them properly. Sufficient funds for these tasks also should be budgeted.

The responsible state agency/agencies should develop a training program to teach designated persons at all levels, both private and public, how to complete and distribute the Uniform School Bus Accident Report Forms. Law enforcement personnel also should be included in the training program. This training program should not stand alone. It should be integrated into appropriate training workshops and manuals and be reviewed periodically.

Timely response to the National Safety Council's *Annual Summary of School Bus Accidents* by the appropriate state agency/agencies is of the utmost importance. A system of follow-up during the year should be developed to assure that accident report forms are being completed and distributed promptly to facilitate completion of the National Safety Council's annual summary form.

The state agency/agencies should lend guidance to those at all levels who use school bus accident data to identify problems, recommend solutions and evaluate the effectiveness of the solutions.

The prompt adoption of this minimum standard by all states will provide a uniform data base that can be studied in order to see how the safety and economy of pupil transportation can be improved.

INTRODUCTION

School bus accident statistics and safety related data traditionally have been used to answer three basic questions:

1. What are the problems?
2. What are the solutions?
3. How well do the solutions work?

In an attempt to answer these questions, considerable sums of money have been expended and much progress has been made in accident reduction. But despite these gains, the lack of standard, uniform reporting instruments and their implementation have resulted in accident data that are incomplete, incomprehensive, inaccurate and inadequate. As a result, pupil transportation personnel have been limited to the use of unreliable data in their safety efforts.

The early implementation of this minimum standard throughout all states will vastly improve the reliability of the data and result in more meaningful expenditures of time and money for the reduction of accidents involving death, injury and property damage.

Implementing this standard requires the leadership of appropriate state agencies. They must develop a program and procedure to systematically retrieve the requested information in a prompt and accurate manner. This will require the full cooperation and training of all personnel involved.

It has been demonstrated that the use of reliable accident data has been an effective tool in the development of accident countermeasures. The goal of this standard is to improve the quality of the statistics gathered in the pupil transportation field and to encourage their use in the development of effective accident prevention programs. In addition, it is the goal of this standard to provide quality statistics for use in responding to proposed rulemakings and other legislative action.

Lastly, it should be recognized that the information requested on the Uniform School Bus Accident Report Form is the minimum amount of data required to complete the National Safety Council's annual summary form. Additional information may be required because of local variables.

INSTRUCTIONS FOR USING THE SCHOOL BUS ACCIDENT REPORT FORM

Purpose:

To compile accurate, uniform and reliable information about school bus accidents so that problems and trends can be identified and needed safety programs can be developed.

Information you provide in this Uniform School Bus Accident Report Form will be required to complete the National Safety Council's *Annual Summary of School Bus Accidents*. Please answer every question and promptly file this report with the proper state authorities.

Who should complete this form:

The person designated by state or local jurisdiction.

This form should be filled out WHETHER PUPILS ARE PRESENT OR

NOT if the accident you are reporting involves ANY amount of property damage or personal injury or fatality to:

- a. Occupants in the bus (pupils, drivers or other persons);
- b. Occupants of any other vehicle(s) involved in the accident;
- c. Non-occupants of the school bus or other vehicle (e.g., students in the loading or unloading zone, pedestrian bystanders, etc.).

DEFINITIONS

Accident

That occurrence in a sequence of events which usually produces unintended injury, death or property damage.

Bus

A motor vehicle with motive power, except a trailer, designed for carrying more than 10 persons. (Code of Federal Regulations, Title 49, Transportation.)

Driver

The person driving the school bus.

Intersection

An area which (1) contains a crossing or connection of two or more roadways not classified as driveway access and (2) is embraced within the prolongation of the lateral curb lines or, if none, 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.)

Loading and Unloading Zone

Any place the school bus stops to load or unload pupil passengers.

Pupil

A person who attends an educational institution.

School Bus

A bus that is sold, or introduced in interstate commerce, for purposes that include carrying students to and from school or related events, but does not include a bus designated and sold for operation as a common carrier in urban transportation (Code of Federal Regulations, Title 49, Transportation.)

There are four types of school buses:

TYPE A—A conversion or body constructed and installed upon a van-type compact truck or 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 conversion or body constructed and installed upon a van or front-section 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 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 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.

Other

Any other person.

UNIFORM SCHOOL BUS ACCIDENT REPORT FORM

School District _____ Bus Owner _____ Bus Body Make _____
 Bus Chassis Make _____ Model Year _____ Bus Driver Name _____
 Driver License No. _____ Citation Issued ☐ Yes ☐ No
 Police Report No., if known _____
 Date of Accident _____ Day of Accident _____
 Time of Accident _____ A.M. P.M. (circle)
 Location (County) _____

PART I—SCHOOL BUS PHYSICALLY INVOLVED

1. Type of Accident (see def.) (enter only one response):

- | | | |
|--|---|---|
| 01 ☐ Between motor vehicles | 04 ☐ Fixed object (complete Ques. 2) | 07 ☐ Other collision (animal, animal-drawn vehicle, streetcar) |
| 02 ☐ Noncollision | 05 ☐ Pedalcycle | |
| 03 ☐ Pedestrian | 06 ☐ Railroad train | |

2. Complete if Fixed Object Accident (enter only one response, that which caused most damage):

- | | | | |
|--|--|--|--|
| 01 ☐ Embankment | 04 ☐ Sign | 07 ☐ Fence | 10 ☐ Curb or wall |
| 02 ☐ Utility pole | 05 ☐ Guardrail | 08 ☐ Median barrier | 11 ☐ Culvert or headwall |
| 03 ☐ Tree | 06 ☐ Bridgerail | 09 ☐ Fire hydrant | 12 ☐ Other _____
specify |

3. Did accident result in? (enter only one response)

- | | |
|---|---|
| 01 ☐ Fatality | 03 ☐ Nonincapacitating injury (moderate) |
| 02 ☐ Incapacitating injury (serious) | 04 ☐ Possible injury (minor) |
- Property damage only. If property damage occurred, was it?:
- | | |
|---|--|
| 05 ☐ More than \$500.000 | 06 ☐ Less than \$500.00 |
|---|--|

4. Number injured: (see PART III)

5. Manner of Collision Between Vehicles or Objects:

- | | |
|-------------------------------------|--------------------------------------|
| 01 ☐ Angle | 03 ☐ Rear-end |
| 02 ☐ Head-on | 04 ☐ Other |

6. Bus Direction Analysis (enter only one response for 01 thru 28):

Collision with Pedestrian

Intersection (see def.)

- 01 ☐ Bus going straight
 02 ☐ Bus turning right
 03 ☐ Bus turning left
 04 ☐ Bus backing
 05 ☐ Other action _____
 specify

Nonintersection

- 06 ☐ Bus going straight
 07 ☐ Bus turning right
 08 ☐ Bus turning left
 09 ☐ Bus backing
 10 ☐ Other action _____
 specify

Collision with Other Vehicle

Intersection

- 11 ☐ Entering at angle,
both moving
- 12 ☐ Entering same direction,
both moving
- 13 ☐ Entering opposite direction,
both moving
- 14 ☐ Other action_____

specify

Nonintersection

- 15 ☐ Same direction,
both moving
- 16 ☐ Opposite direction,
both moving
- 17 ☐ One vehicle stopped
- 18 ☐ Other action_____

specify

All Other Collisions

Intersection

- 19 ☐ Fixed object
- 20 ☐ Other road vehicle,
train, pedalcycle
- 21 ☐ Other object, animal

Nonintersection

- 22 ☐ Fixed object
- 23 ☐ Other road vehicle,
train, pedalcycle
- 24 ☐ Other object, animal

Noncollision

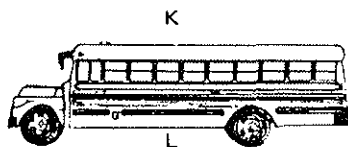
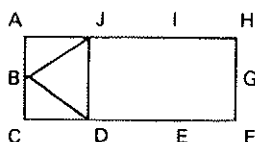
Intersection

- 25 ☐ Overturn
- 26 ☐ Other noncollision

Nonintersection

- 27 ☐ Overturn
- 28 ☐ Other noncollision

7. First Point of Impact (enter only one response in box)



Enter

8. Contributing Circumstances (enter as many responses as applicable):

Driver Action	Bus Driver Action		Other Vehicle Driver Action	
Speed	01		12	
Right of way—failed to yield	02		13	
Passed stop sign	03		14	
Disregarded signal	04		15	
Drove left of center	05		16	
Improper overtaking	06		17	
Made improper turn	07		18	
Followed too closely	08		19	
Backing	09		20	
Sudden movement	10		21	
No improper action	11		22	

Roadway

- 23 ☐ Defective surface (e.g., potholes)
- 24 ☐ Slippery
- 25 ☐ Inoperative traffic signal
- 26 ☐ View obstructed by
object (i.e., tree, fence,
shrubby, etc.)

Vehicle Defect

- 27 ☐ Tires
- 28 ☐ Brakes
- 29 ☐ Lights
- 30 ☐ Steering
- 31 ☐ No Vehicle Defect
- 32 ☐ Other_____

specify

9. Total Number of Lanes on Roadway
10. Posted Speed Limit
11. Approximate Speed of the Bus
12. Age of the School Bus Driver
13. Driver Sex 01 ☐ M 02 ☐ F
14. Driver's Experience Driving School Bus:
- | | |
|--|---|
| 01 ☐ Less than 6 months | 04 ☐ 2-5 years |
| 02 ☐ 1 year or less | 05 ☐ 5-10 years |
| 03 ☐ 1-2 years | 06 ☐ Over 10 years |
15. In the last three years, how many school bus accidents has the driver had?
16. Did the driver receive a pre-service school bus driver training course?
01 ☐ Yes 02 ☐ No
17. Did the driver receive in-service training course in the last 12 months?
01 ☐ Yes 02 ☐ No
18. Was bus driver's lap belt in use when the accident occurred?
01 ☐ Yes 02 ☐ No
19. Type of School Bus: (see definitions)
- | | | |
|------------------------------------|------------------------------------|-----------------------------------|
| 01 ☐ Type A | 03 ☐ Type C | 05 ☐ Other |
| 02 ☐ Type B | 04 ☐ Type D | |
20. Total Number of Passengers on Bus (excluding driver)
21. Bus Rated Seating Capacity
22. School Bus Use at Time of Accident:
- | | |
|--|---|
| 01 ☐ Regular Route | 03 ☐ Special Education Use |
| 02 ☐ Field/Activity Trip (School related use) | 04 ☐ Other Use |
23. Condition of Road at Time of Accident (enter as many responses as applicable):
- | | | | |
|---------------------------------|--|---|---|
| 01 ☐ Dry | 03 ☐ Under Repair | 05 ☐ Holes or ruts | 07 ☐ Wet |
| 02 ☐ Icy | 04 ☐ Snow packed | 06 ☐ Muddy | 08 ☐ Other _____ |
- specify
24. Light Condition (enter only one response):
- | | |
|--------------------------------------|--|
| 01 ☐ Dawn | 04 ☐ Dark, artificially illuminated |
| 02 ☐ Daylight | 05 ☐ Dark, not artificially illuminated |
| 03 ☐ Dusk | |
25. Weather Condition (enter only one response):
- | | | | |
|--------------------------------------|-------------------------------------|-------------------------------------|---|
| 01 ☐ Clear | 03 ☐ Raining | 05 ☐ Snowing | 07 ☐ Smog/smoke |
| 02 ☐ Sleeting | 04 ☐ Fog | 06 ☐ Dust | 08 ☐ Other _____ |
- specify

PART II—LOADING/UNLOADING ZONE ACCIDENTS (see definitions)

1. At the time of the accident, where was the bus? (enter only one response)

01 ☐ Approaching the zone

03 ☐ Leaving the zone

02 ☐ Stopped in the zone

04 ☐ Not in sight

2. Was the pupil(s)? 01 ☐ Hit by bus 02 ☐ Hit by other vehicle

3. Number injured: (see PART III)

4. Location of injured pupil(s):

01 ☐ On side of road

03 ☐ In roadway

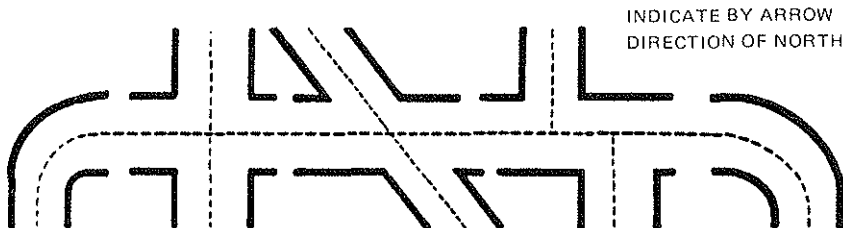
02 ☐ On sidewalk

04 ☐ Other _____ specify

Please describe behavior of pupil(s) in loading zone in "Description of Accident."

Description 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 SCHOOL TRANSPORTATION—RELATED PERSONNEL

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

REPORT SUBMITTED BY:

Signature _____

Name (Print) _____

Date _____

Position _____

PART IV—LOCAL VARIABLES

NATIONAL MINIMUM STANDARD GUIDELINES 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 in the 1985 Operations Standard were prepared to assist school administrators and private operators to better understand the needs of their particular pupil transportation programs. As inflation escalates the cost of vehicles and repairs, and as fuel becomes less available and more expensive, the challenge to maintain increasingly high standards of safety and performance takes on added significance.

Hopefully, those involved with pupil transportation related assignments will find this updated version of the 1980 National Minimum Standard Guidelines for School Bus Operations Standards document interesting, inspirational and informational.

I. ADMINISTRATION

- A. The state agency(ies) responsible for pupil transportation should 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 Report Form, manpower availability, etc.
 6. Promotion of a pupil transportation safety program utilizing community, 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 policies.

8. A manual or handbook for each school bus driver containing the state pupil transportation regulations.
9. A comprehensive school bus driver training program for both pre-service and in-service 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. Safety and ridership curricula for pupil passengers.
14. Annual visits to local school systems to evaluate transportation systems and provide direction as necessary.
15. Bus and equipment standards that would be conducive to better and safer bus performance.
16. Coordination with other agencies having responsibility for pupil transportation services, including the Uniform School Bus Accident Report Form.

B. Local administrators should:

1. Implement the state pupil transportation policy.
2. Become involved in: pupil transportation operations within their jurisdiction, including participation 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 and 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 which complies with Federal Highway Safety Program Standard 17.
4. Provide continuous supervision of loading and unloading areas at or near the school and conduct periodic emergency evacuation drills.
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 local pupil transportation policies and regulations, including those for special education.

II. PUPIL TRANSPORTATION DIRECTOR

A. State Pupil Transportation Director:

1. Specific duties include, but are not limited to:
 - a. Assisting in the implementation of basic pupil transportation policies throughout the state.
 - b. Managing the state's pupil transportation program which includes the ability to plan, budget and forecast requirements for the operation.
 - c. Supervising the preparation of manuals, handbooks and information for distribution to local transportation personnel and private operators.
 - d. Providing, upon request, assistance and direction to local school administrators as may be necessary.
 - e. Assisting in evaluation of state and local operations and, when appropriate, providing recommendations.
 - f. Planning and directing training for pupil transportation personnel.
 - g. Assisting local personnel in planning and conducting pupil passenger safety workshops.
 - h. Requiring and maintaining appropriate reports and records.

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

1. Specific duties include, but are not limited to:
 - a. Providing assistance in planning, budgeting and forecasting for the pupil transportation system.
 - b. Assisting school officials in school site selection and plant planning.
 - c. Providing, when appropriate, chassis and body procurement.
 - d. Developing and implementing a plan for equipment maintenance.
 - e. Recruiting, selecting, instructing and supervising personnel.
 - f. Routing and scheduling buses.

- g. Assisting in the development and implementation of pupil safety instructional programs.
 - h. Working with administrators, teachers, transportation personnel, students, parents and various public and private agencies to improve the quality of the transportation system.
 - i. Investigating and reporting accidents using the Uniform School Bus Accident Report Form, as well as problems associated with the pupil transportation system.
 - j. Maintaining records and preparing reports.
 - k. Developing and supervising the implementation of an ongoing evaluation plan for the pupil transportation system.
2. The pupil transportation director and/or private operator should have a basic understanding of the educational process and the corresponding role of transportation. Qualifications should 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.
3. The school transportation director and/or private operator should receive formal instruction in pupil transportation management. This training should include classroom work and field experience.

III. DRIVER

- A. Each state should develop and make available to each school bus driver at the time of employment, a driver's manual or handbook. (See

Section I) This manual should include the following subjects:

1. The state transportation policy.
2. Motor vehicle rules and regulations applicable to school bus operation.
3. Vehicle operation and maintenance.
4. Procedures for the driver to practice when involved in an accident, when witnessing an accident and when involved with post-accident reporting.
5. Rudiments of basic first aid procedures. Local school systems should supplement the state-produced manual with information on local policy and practices that may vary from, but should not conflict with, state level requirements.

B. Procedures for selection of school bus drivers should include:

1. A proper application form on which 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 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 should 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 board of education approved, licensed physician. Tests for tuberculosis (TB) and other communicable diseases should be included. The physical examination should be conducted annually and at such times as the superintendent of schools may deem necessary. (See Appendix C)
6. A determination of educational attainment. A school bus driver applicant should 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 should be through a state approved pre-service program.

2. An annual state approved in-service program shall be required.
- D. Behind-the-wheel instruction should 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 should be given in the specific handling characteristics of each. All instruction should include:
1. Familiarization with the bus and its equipment.
 2. Emergency exit drills. (See Appendix D)
 3. Use of the special warning and stop lamps and other traffic control devices.
 4. Procedures for loading and unloading pupils at bus stops.
 5. The necessity for cooperating with other highway users.
 6. Entrance to, and departure from, loading and unloading areas at school buildings.
 7. Entrance to, and departure from, the bus garage or other storage areas.
 8. Procedure for reporting mechanical difficulties.
 9. Post-accident and post-road failure procedures.
 10. Procedure for performing pre- and post-trip inspections.
 11. Procedure for recognizing cause and effect relationship between driving habits and vehicle maintenance.
- E. There are certain duties that all school bus drivers are required to perform. These may include:
1. Operating the vehicle in a safe and efficient manner.
 2. Conducting thorough pre- and post-trip inspections of the vehicle and special equipment.
 3. Ensuring the orderly conduct of passengers.
 4. Meeting emergency situations in accordance with operating procedures.
 5. Communicating effectively with school staff and public.

6. Completing required reports.
 7. Completing required training programs successfully.
 8. Providing maximum safety for passengers while on the bus and during loading and unloading.
 9. Wearing driver's seat belt whenever the bus is in motion.
- F. School bus drivers should be evaluated at regular intervals. These evaluations may include:
1. Written tests.
 2. Road performance checks.
 3. Evaluation interviews.

IV. BUS AIDE (See Section, *SPECIAL EDUCATION OPERATION*)

V. MAINTENANCE AND SERVICE PERSONNEL

- A. Adequate staff should 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 should develop and make available to maintenance and service personnel the necessary maintenance and service publications for the equipment being serviced.
 2. The transportation system should arrange, at regular intervals, for pre-service and in-service training for maintenance and service personnel. It should also require or encourage maintenance personnel to attend state sponsored workshops or training institutes.
 3. The training procedures should include instruction in:
 - a. Preventive maintenance procedures.
 - b. Repair procedures for each type of fleet vehicle and its special equipment.
 - c. Special 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.

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 drivers, pupils and parents. Each school district should institute a comprehensive pupil management program that is designed to share the responsibility for the pupil's safety and well being, as well as 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 E.
2. Establish pupil regulations governing the behavior and safety of pupils while on the bus and at the bus stop. (See Appendix F)
3. Institute and administer an instructional program that teaches pupils proper conduct and safety procedures. (See Appendix G)
4. Conduct a training program for school bus drivers to ensure that all policies, procedures and regulations are understood and why they must be enforced.
5. Ensure that parents receive written copies of 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 co-operation between school administrators and bus drivers.
7. Provide training in pupil management skills that extends beyond the scope of enforcing rules and regulations.

B. Driver responsibilities:

1. Drivers should be familiar with 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 drills. (See Appendix D)
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, must use appropriate written forms to describe violations to persons dealing with discipline problems. (See Appendix H)

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 procedures 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 (regarding rules and regulations):

1. Become familiar with them.

2. Encourage children to abide by them.
3. Assist children in understanding them.
4. Recognize their responsibilities for the actions of their children.
5. Effect desirable changes in their children's behavior.
6. Support safe riding practices.
7. Support procedures for emergency evacuation. (See Appendix D)
8. Support procedures for safely crossing the highway before boarding and after leaving the bus. (See Appendix I-A, I-B)
9. Support procedures to follow in emergencies.
10. Support respect for the rights and privileges of others.

VII. PROCEDURES

A. Policies and guidelines:

The responsible state agency and the local school district should have clear and concise policies and guidelines concerning the conditions for the operation of contractor and/or public-owned school buses within local school districts. These are important for two reasons: First, they have the effect of law when laws or agency regulations are not available. Second, they serve as the rule book for administrators charged with the administration of program services within the district. They become the basis for developing operating procedures and, as such, enable the administrator to function without calling board meetings when decisions have to be made. 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 Report Form.
15. Use of special lighting and signaling equipment:
 - a. Alternately flashing signal lamps shall be used when the bus is stopping or stopped for the purpose of taking on or discharging passengers, as follows:
 - (1) Alternately flashing amber lamps are to be used to warn motorists that the bus is stopping to take on or to discharge passengers.
 - (2) 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.
16. 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.
17. Pre-service and in-service training requirements:
 - a. All bus drivers should be provided with three hours of pre-service training each year before driving a school bus.

- b. Newly employed drivers should receive a minimum of 20 hours of in-service training during the first year of employment.

B. Standees:

1. Students must be seated at all times while being transported to and from school.
2. Standees will not be permitted under any circumstances.

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 J) 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 separate from the boarding zone.
4. A separate loading area for wheelchairs.
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 K 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 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 L. 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. Special attention must be given to the handicapped.

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 eliminate the need for pupils to cross the roadway. They should be avoided except when pupils would be subjected to greater than ordinary risks crossing the road to their residence after alighting from the bus.
- 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. Transportation supervisors should remember that stopped school buses pose a hazard on thoroughfares where relatively high speeds or high traffic volume prevail. It is usually unwise to load or unload passengers on such roadways.

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 traveling 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, 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 route inspections 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 (underinflated, 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.

- (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 and interior bus lights.
 - (2) Stop arm control.
 - (3) Windshield fan, defrosters and heaters.
 - (4) Horns.
 - (5) Service door and control.
 - (6) Mirrors: rearview, side view, convex and elliptical.
 - (7) Fuses and emergency equipment: flags, lanterns, flares.
 - (8) Driver's seat and seat belt.

- (9) Fire extinguisher.
- (10) First aid kit.
- (11) Wipers/washers.
- (12) Sanders, when equipped.

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

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. Planned maintenance may be defined as scheduled maintenance that involves making minor repairs and adjustments which, if neglected, may develop into major difficulties thereby necessitating extensive and expensive repairs in addition to costly downtime.
- a. Manufacturers' service manuals and warranty protection 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 operations 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.

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 Accident Report Form, 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.
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 state human rights divisions. Most states do not permit questions relative to age, sex, marital status, etc.
 - b. Physical examination. (See Appendix C)
 - c. Training and testing.
 - (1) Behind the wheel.
 - (2) Knowledge.
 - (3) Hours of instruction.

- d. Payroll record.
 - (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.
3. Route records should contain:
- a. Types of routes.
 - b. Route descriptions.
 - c. Route miles.
 - d. Information about the needs of special education pupils.
4. Maintenance records should contain the following:
- a. Line setting tickets.
 - b. Work orders.
 - c. Preventive maintenance records.
 - d. Vehicle depreciation.
 - e. Equipment specifications.
5. Cost records should contain data in the following categories:
- a. Vehicles.
 - b. Labor cost.
 - c. Parts cost.

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

1. Accident. The plan should spell out the following:
 - a. How to prevent further accidents.
 - b. How to evacuate and control pupils.
 - c. How to evaluate the need for medical assistance.
 - d. How to get help from the police, fire department and garage.
 - e. 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.
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.
3. Road failure. The emergency plan should cover the procedure for:
 - a. Securing the bus.
 - b. Controlling the passengers.
 - c. Diagnosing the cause(s) of the road failure.
 - d. Notifying school officials.
 - e. Recovering the disabled school bus.
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, 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, requests, 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, 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.

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. Insure 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. ACTIVITY BUS 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 responsibilities. Activity trips include field trips which are extensions of the instructional program, athletic trips and other outings. 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:

A. Policies and guidelines:

1. Purpose of trip (instructional, athletic, pupil/spectator's recreation, etc.).
2. Funding source (district or individual school funds, individual charge, parent group, etc.).
3. Administrative approval:
 - a. Person who has authority to approve trip.
 - b. A priority guideline should be developed for trip scheduling if all requests cannot be accommodated.
4. Advance notification (Allow adequate time for approval process and for making driver and vehicle arrangements.)
5. Methods of travel (district owned or contracted bus, commercial carrier or local transit equipment, air, boat, rail or combination of the above, private or school passenger automobile).
6. Trip Request Form (should include all necessary information from trip arrangements, payroll, reimbursement and other local needs). (See Appendix M)
7. Chaperones (An adult chaperone should be required on all activity trips. Responsibilities include passenger control with drivers maintaining final authority.)
8. 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.)
9. 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.)
10. Luggage (A procedure for transporting luggage or equipment pro-

hibited in the passenger compartment by state law and/or local regulations is necessary. Loose luggage or equipment which could cause injury or block passageways in the event of an accident or sudden maneuver should never be transported in the passenger compartment.)

11. 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.)
12. 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.)
13. 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.)
14. 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.)
15. 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.)
16. 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.)

B. Vehicle and equipment:

1. The following should be taken into consideration when selecting trip vehicles:
 - a. Miles to be traveled.
 - b. Terrain and climate conditions.
 - c. Number and age group of pupils.
 - d. Luggage and equipment.
 - e. Driver familiarity with the vehicle and route.
2. Consideration should be given for specialized equipment needed such as:
 - a. Luggage storage.
 - b. Chains or sanders (Chains should be prefitted prior to trip.)
 - c. Extra heaters.
 - d. Public address system.
 - e. Radio (A.M., C.B. or 2-way).
 - f. Tires (off-road tread or recaps; recaps on front axle are prohibited).
 - g. Spare tire.
 - h. Tool requirements (A kit containing items such as flashlight, pliers, screwdrivers, de-icer, extra chain tighteners, etc. is advisable.)
 - i. To determine equipment requirements for an extended trip, it is advisable to communicate with transportation personnel at the destination.
 - j. The driver should carry cash for telephone, fuel, bridge tolls, parking fees and personal needs.
3. Inspection (Vehicles should pass the same inspections as regular route buses and a detailed check prior to activity trips.)

C. Training:

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

- a. State laws and applicable policies and rules.
- b. Familiarity with activity trip vehicle and its components.
- c. Familiarity with specialized equipment and how to use it. (IX-B-2)
- d. Familiarity with local and state trip requirements.
- e. Route familiarization (This might include a dry run prior to the trip date, especially if extreme conditions, terrain or road difficulties may be encountered.)
- f. Discipline procedures on trips.
- g. Driving under adverse conditions (night driving, slippery roads or unfamiliar mountainous driving).
- h. Destination location and parking areas. (Maps should be made available to drivers.)
- i. Parking location if other than pupil destination.
- j. Provisions for bus security at destination.
- k. Knowledge of first aid practices.
- l. Emergency procedures, including contingency requirements.
- m. Other items (e.g., pupil counts, report form completion, convoy procedures, signs, etc.).

MINIMUM STANDARD GUIDELINES FOR SCHOOL BUS OPERATION: SPECIAL EDUCATION

INTRODUCTION

The purpose of this section of the operations guidelines is to recommend minimum standard guidelines for those entrusted with responsibility for transporting pupils requiring special care during the loading, unloading and transporting processes. The term special education means specially and individually designed courses of instruction and related support services, sufficient in both quantity and quality to meet the unique needs of handicapped children.

This section is concerned with identification of the multitude of practices and procedures that apply to the transportation of handicapped pupils. Special attention has been given to: development of general principles; identification of major characteristics of handicapped pupils, pupil needs relating to class placement, behavioral actions that can be anticipated and resulting corrective actions to be taken, types of medical concerns to be dealt with in an efficient and professional manner; development of emergency pupil management procedures.

Few of the practices and procedures are discussed in detail. All have been treated in sufficient depth to provide the administrator, driver and aide with sufficient information to develop and administer a quality program.

I. GENERAL PRINCIPLES

- A. Pupil management encompasses all preparation and action taken to meet each pupil's needs for comfort and safety while riding to and from school. For the handicapped pupil, this means a variety of adjustments to accommodate each individual's needs without compromising the safety of others and the primary role of the driver to drive the bus.
- B. Transportation of handicapped pupils is a highly personalized service, requiring a thorough assessment of and allowances for physical, social, emotional and intellectual capacities.
- C. Successful pupil management depends upon careful planning for each pupil's needs prior to placement and continued monitoring thereof throughout the school year. Good pupil management techniques avoid narrow, band-aid approaches by assessing needs and anticipating problems.
- D. Respect, communication and cooperation among drivers, parents, guardians, teachers and other school officials will help to ensure safe, reliable and comfortable transportation service. It is important to recognize that the driver often spends several hours a day with these pupils, thereby assuming a significant role in their lives.

- E. Transportation goals should be included in each pupil's individual education plan (IEP) and upgraded along with its goals.

II. CHARACTERISTICS OF HANDICAPPED PUPILS

- A. The definition of disability varies from state to state. In general, the following behaviors are characteristic, though no one pupil is likely to manifest all of them.
1. Learning disabled pupils typically have average or higher intellectual ability, but suffer from disorders that prevent them from processing or understanding information, particularly language. They may be disorganized or inefficient in solving problems. They may demonstrate impulsive or extreme emotional behaviors that seem out of proportion to the severity of the problem. Hyperactivity is also common among these pupils.
 2. Emotionally disturbed pupils may have great difficulty controlling their behavior. Emotional disturbance is characterized by low self-esteem. The pupil may either withdraw or act out his frustration and insecurity. Seemingly inappropriate types of behavior may be observed. Desirable behavior may lack stability from day to day. There is a tendency for the pupil to develop physical symptoms or fears that should be discussed with the pupil's teacher. A limited number of clear, consistent rules will set goals for the pupil to regulate his own actions. Avoid angry outbursts and punishment. Never label a pupil bad when he/she misbehaves. Simply remind the pupil of what is expected and why, and reinforce proper behavior. A lack of stability in desirable behavior practices is not willful disobedience but, rather, behavior beyond their control.
 3. Mental retardation encompasses a range of impairment from mildly (educable) retarded to trainable, to severely and profoundly handicapped. Many pupils may have physical handicaps in addition to mental retardation. They may be afflicted by disorders involving poor motor coordination, seizures and body tremors. Pupils may have few self-care skills. They require aid in dressing, expressing themselves and boarding the bus. They may be friendly and affectionate. They need frequent reminders of bus rules because they have limited retention. Many pupils can understand what you tell them (possess receptive language) but cannot speak to you. You should insist that they use every mode of communication of which they are capable to make their needs known to you.
 4. Physical handicaps include deafness, blindness, paralysis, lack of head, trunk or back control, or erratic movement. These pupils may be of average or above intelligence, but are frequently behind in social and academic development due to handicaps. Those with orthopedic handicaps often have leg braces, crutches, wheelchairs or other supportive equipment. These pupils must be seated and secured comfortably.

- a. Communication with pupils whose handicaps interfere with normal means of expression can pose a major challenge to the driver.
 - (1) Visually handicapped pupils respond best when they are addressed by name, and when the events around them are described carefully. Remember that they cannot see facial expressions or other body language that constitute a large part of communication for others. The visually impaired can develop self-sufficiency if their environment is structured in a stable and predictable way. They can fasten their own seat belts if they can find them on the same seat in the same position each day. They cannot easily recover them if they've fallen behind the seat, or if their seat changes and the seat belt is no longer in a familiar location.
 - (2) Deaf pupils use their visual skills to compensate for their hearing loss. Look at them when you talk. Speak clearly and distinctly to help them read your lips. Yelling does not help them understand. Facial expression and body language are very important; show them what you want. The driver may wish to carry a pad and pencil to write down what he cannot otherwise convey. Deaf children may find the noise level in their hearing aids uncomfortable and turn them off. A course in sign language is valuable to those drivers who routinely transport deaf children. Deaf pupils will probably be most content if there are others on the bus with whom they can communicate. Hearing impaired children, along with visually impaired pupils, are unlikely to be much different from other children in terms of behavioral problems.

- B. Although the behaviors described above are characteristic of certain categories of disabling conditions, it is important to remember that each pupil is an individual with his own distinct personality. No label can completely or adequately describe any pupil. It should be noted that handicapped pupils are people, and can be expected to behave and misbehave in a normal fashion. The driver of handicapped children needs to be more flexible, patient and creative in his/her approach to managing these pupils.

III. CLASS PLACEMENT

- A. Class assignment should include a routine consultation with transportation personnel to avoid bus problems that may later develop into classroom problems.
 1. Some pupils may need to be transported in wheelchairs or specifically designed car seats or vests to provide trunk and head support. The type of vehicle required must be ascertained in advance, and lead time may be needed to construct a device in which to transport the pupil.

2. Special needs for transportation service may also be indicated on the pupil's IEP.
 3. The last consideration in planning is the mixture of pupils in the vehicle. It may be desirable to group pupils by disability. In sparsely populated areas it may be impossible to do so.
- B. After class assignment is determined, the transportation director should research the pupil's transportation needs.
1. A thorough inventory of the pupil's needs should be taken by the school personnel in conjunction with the transportation director. This should include aspects of the pupil's personality and handicaps as they relate to the bus ride. This may determine such matters as seat assignment, orders of stops, equipment needed and techniques for effectively relating to the pupil. Seizures and other significant medical problems should be documented and available to the driver.
 2. Any deviation from normal schedules should be noted. Special care should be exercised to ensure that the pupil's medication schedule and bus schedule do not conflict.
 3. Arrangements should be made for alternate and emergency drop-off points and telephone numbers. These points may seem more related to operations than pupil management. Failing to deliver the pupil at his regular stop or at his regular time may create anxiety in the pupil and his parents, thereby undermining the driver's control of the situation.
 4. Arrangements for each pupil's transportation should be communicated to all involved parties, including parents, guardians, school personnel, driver, aide and the other pupils on the bus. Smooth bus service start-up will help make the pupil's first day of school a positive experience. It will instill confidence in the parent and reflect well on the entire school system.
 5. It is advisable that schools receiving special education pupils by bus service assign a staff member to meet all arrivals at loading and unloading zones. Pupils with severe disabilities (II, A, 2, 3, 4) should not be left unattended outside the school.

IV. DISCIPLINE AND BEHAVIOR CONTROL

- A. Safety of passengers and respect for person and property are needed when handicapped children are transported. A pupil cannot be allowed to behave in any manner which endangers others or causes serious harm enroute.
- B. Lenience or pity for the pupils because of their handicaps is counter-productive to the development of self-sufficiency. Many pupils sense this attitude and manipulate it to their advantage. Pupils must be

taught to accept responsibility for their actions. This can usually be accomplished if the following rules are obeyed:

1. Let the pupils know what is expected of them. Define terms and rules clearly. Enforce the rules fairly, firmly and consistently.
 2. Let the pupils know exactly what the consequences of their behavior will be. Always follow through on the disciplinary action you outline or the pupils will quickly learn that your authority is not to be taken seriously.
 3. Demonstrate what you want them to do, using as many modes as possible. Don't just tell them to fasten their restraining devices. Show them how to do it.
 4. Accentuate the positive. Continually telling the pupils, "Don't do this." and "Don't do that." leaves them wondering what they can do. On long bus rides that can be a tiring and boring experience, suggest methods of acceptable behavior.
- C. Behavior modification is a technique that requires pupils to behave in an appropriate way before they are given some reward. This increases the likelihood they will behave as desired. To be effective, you must take into consideration the ages of the pupils aboard and the nature of the reward, and provide a clear definition of acceptable behavior.
1. It is generally a good policy to develop a simple reward system for acceptable behavior. As a general rule, liberal amounts of praise should be a part of the system.
 2. The driver can develop a chart to keep track, on a timely basis, of those who have/have not behaved well. Rewards may be given to those with satisfactory ratings. A smiling face or a gold star on the chart, a preferred seat or other tangible rewards are examples. Such practices should be acceptable to parents, guardians and teachers.
 3. Some disruptive pupils respond well when given responsibility. Leading others in singing or a quiet game may channel excess energy into a more constructive activity that can be pursued safely on the bus ride.
- D. Other techniques of behavior management include rearranging seating, isolating troublemakers, etc.
1. Seating arrangements on the bus can be important in managing handicapped pupils. A good driver will learn to know his/her pupils and seat those who get along near each other.
 - a. The seat closest to the front of the vehicle may be used either as a reward or as a punishment, depending on the attitude of the pupils. Younger pupils often perceive sitting near the

driver as a privilege, and this may be granted as a reward for good behavior. Older pupils are more likely to view a front seat as undesirable, and it may then be used to isolate a trouble-maker.

- b. An insightful choice of seat partners can help the driver manage pupils. For instance, a young hyperactive pupil may be seated with an older, well behaved pupil. The older pupil is made to feel important by looking after the young charge, and the younger pupil may look up to the older and behave better to impress him. A more advanced pupil may be able to sit with one who is easily distracted and entertain the other by talking or looking at a book.
 - c. Very young or fragile pupils should be seated away from older, larger pupils who might harm them if they become angry or frustrated.
2. In cases of serious misbehavior, temporary suspension of bus privileges may be in order. This should only be done after consultation with parent or guardian and teacher in order to prevent a pupil from being left home unsupervised or spending the day alone on the streets. Suspension from the bus is usually most appropriate when the safety of other pupils is threatened by the pupil in question.
3. Most pupils respond best to rules if they have a voice in their development. The driver may tell pupils that the bus is their bus, thereby encouraging pride in making it a clean, safe and enjoyable place. For those pupils who are able, the driver may have them suggest rules for the bus and the means of enforcing them. Often pupils will develop more strict regulations than the driver.
4. Cases of serious misbehavior which do not respond to any of the above methods may require referral to a school counselor or psychologist for development of a more personalized behavior management scheme.
5. Behavior management systems will be most effective if developed after consultation with parents, guardians and teachers. Pupils can be confused and frustrated if they are allowed to behave one way on the bus and another in the classroom. Cooperation of all concerned parties is the ideal way to achieve a safe bus environment.
6. Some behavior results from severe emotional, mental or physical handicaps and cannot be adequately controlled by the techniques described herein. Such behavior is often readily diagnosed by a qualified member of the special education staff. It is recommended that when the behavior is identified, the following actions be taken:
 - a. Older and higher functioning students can be rerouted and

added as passengers on a bus to assist younger and lower functioning students. A buddy system can be developed with reinforcements for cooperative behavior. The most successful systems are those recognized and supported by the school. (IV, D, 1)

- b. Hyperactive children can be retained in their seats by use of appropriate restraining devices.
 - c. The transportation director should contact the school administration to determine the feasibility of assigning an aide to the bus. The aide can monitor the pupils and engage them in quiet activity during the bus ride.
 - d. The bus may be modified to control behavior resulting from pupils responding to outside influences. Windows may be tinted to reduce light and heat. The seating system can be compartmentalized. All equipment modifications must comply with state and federal regulations.
- E. The driver of the bus may improve his/her skills for controlling pupil behavior by periodically visiting the pupils in their classrooms.
- 1. By observation, the driver may learn the needs of pupils and the responses and techniques practiced by teachers. Uniformity in behavior management techniques between classroom and bus can be developed.
 - 2. Seeing the driver in the classroom strengthens the association between drivers and teachers. The driver's presence and the bus ride may be seen as an extension of the classroom where quiet behavior is required.

V. MEDICAL CONCERNS

- A. Handicapped pupils are often more susceptible to illness than others. Therefore, they may miss school more often. They are often on medication for their disability. Normally, a driver should never administer this medication. It is strongly recommended that drivers of handicapped pupils enroll in a first-aid course in preparation for medical emergencies that may arise.
- B. A change in dosage of medication can dramatically alter a pupil's behavior. Sudden personality changes should be reported to the parent, guardian and teacher at the earliest possible time. It is recommended that reporting be documented in writing.
- C. There are medical problems that may arise routinely on the bus for which a driver should be prepared.
- 1. Many handicapped children are subject to convulsive disorders and seizures. These can vary in intensity and length. A petit mal

seizure, lasting a few seconds, is often not noticeable. A grand mal seizure, involving arm thrashing and body rigidity, is of longer duration. Normally, seizures are self limiting. The driver's role is to see the pupil does not harm him/herself and rests comfortably afterward. Nothing should be placed in the pupil's mouth, nor should limbs be restrained in any manner. Extended seizures constitute a medical emergency and medical help should be summoned.

2. Some pupils may have respiratory difficulties and drool. They may choke on their own saliva or foreign objects. The method of dealing with these problems should be discussed with the parent, guardian, teacher and medical personnel. Some pupils may become nauseated during the ride. It is recommended that clean-up material be kept on the vehicle.
- D. Most medical incidents on the bus ride, while requiring special attention of the driver or aide, will not necessitate summoning professional assistance. Extended seizures and other serious medical matters may require either diverting the bus to a medical facility or summoning an ambulance. In any event, all medically related incidents should be reported to the school and parents or guardians at the earliest possible moment. It is recommended that reporting be documented in writing.

VI. PUPIL MANAGEMENT DURING EMERGENCIES

- A. It may be useful to educate those pupils who are capable of comprehending and retaining information about emergency measures. It is possible that the driver may be incapacitated in an accident and a pupil may have to take over.
- B. In emergencies where the driver is not injured, it is important to assure pupils that the situation is under control.
- C. The most important preparation for pupil management during emergencies is planning.
 1. Assess the abilities and handicaps of each pupil to determine each pupil's needs in an emergency.
 2. Plan how to evacuate each pupil if this becomes necessary. Determine what special attention might be needed after evacuation (e.g., providing reassurance to normally tense and insecure pupils). The appearance of confidence on the part of the driver will help calm the pupils.
 3. Develop and maintain a clearly visible seating chart that identifies the special needs of pupil passengers in the event of an emergency evacuation. This chart is useful to emergency service personnel who may respond, especially when the driver is incapacitated.
- D. Evacuation drills involving the driver and pupils shall be conducted twice each year. Handicapped pupils shall practice evacuation procedures within their capabilities.

E. The use of specialized equipment.

1. Wheelchairs:

- a. Brakes and a restraining belt should be installed on each wheelchair and maintained by the owner. Electric powered wheelchairs should have independent braking systems that can be locked in gear while the bus is in motion.
- b. Batteries shall contain non-liquid electrolyte.

VII. SUMMARY OF SUCCESSFUL PUPIL MANAGEMENT

- A. Inventory the abilities and handicapping conditions of each pupil. Gear the rules of the bus to each bus load of pupils.
- B. Continuity and consistency of expectations by those in authority at home, in the classroom and on the bus will do much to aid the pupil in his social development, independence, self-esteem and recognition of and respect for the rights of others.
- C. The school bus driver is an important participant in a special education child's experience. He/she should be familiar with the programs, children and staff. All drivers should be assigned to routes on a consistent basis.

POLICY DEVELOPMENT

Policy development should include, but not be limited to, the following: developing uniform policies for pupils, parents, drivers and aides; ensuring conformity to local, state and federal law; securing school board approval and adoption; publishing policies in concise format; distributing policies to all affected participants in the transportation system.

I. PUPIL POLICY

- A. Develop a written policy to facilitate a safer, more enjoyable ride for pupils. Accentuate the positive.
 - 1. Post in the bus.
 - 2. Include in driver and pupil handbooks.

II. PARENT OR GUARDIAN POLICY

- A. Develop a written policy for facilitating a safe, effective transportation system. Include:
 - 1. Pickup and delivery instructions.
 - 2. Maximum times in transit.

3. Types of approved orthopedic devices.
 4. Emergency or out of the ordinary procedures.
- B. Deliver written policies to parent or guardian prior to service commitment.

III. DRIVER POLICY

- A. Employment requirements (List all requirements that must be fulfilled prior to employment.)
1. Driver's record checked (criminal, etc.).
 2. Driver's license.
 3. Special certificates (if required by state).
 4. Physical exam.
 5. Psychological profile.
 6. First aid certificate (include CPR if required).
 7. Pre-employment written exam.
 8. Pre-employment driving exam.
- B. School system requirements:
1. Pre-trip inspection.
 2. Discipline.
 3. Pupil safety.
 4. Knowledge and use of safety equipment.
 5. Record keeping.
 6. Contract provisions.
- C. State and federal statutes and regulations (List all requirements placed on the driver.)
1. Pre-trip inspection.
 2. License renewal requirements:
 - a. Classroom in-service hours.
 - b. Driving in-service hours.

3. School bus stop laws.
 4. Speed limits.
 5. Railroad crossing laws.
 6. License requirements:
 - a. Special certificates.
 - b. Medical certificates.
 - c. Driving record requirements.
- D. An ongoing driver training program shall be implemented for both new and renewal drivers. Areas covered should include:
1. Defensive driving.
 2. Adverse weather conditions.
 3. Pupil behavior management.
 4. Pupil medical and emergency information.
 5. First-aid training.
 6. School bus evacuation.
 7. Pupil relations.
- E. Confidential data (have available in the vehicle for driver's use):
1. Pupil's name, address and telephone number.
 2. Nature of pupil's handicap.
 3. Emergency health care information.
 4. Name and telephone number of pupil's physician, parent, guardian or other responsible person.
 5. Provisions for pupil's welfare if and when pupil is not met at the designated bus stop.
 6. Locations of all emergency facilities along the route or within the general area.

IV. AIDE POLICY

- A. Employment requirements: (List all requirements that must be fulfilled prior to employment.)

1. Physical exam.
 2. Psychological/emotional profile.
- B. An ongoing aide training program should be implemented for new aides. Areas covered should include:
1. Pupil behavior management.
 2. First-aid training.
 3. School bus evacuation/emergency training.
 4. Use of special equipment required for transporting the handicapped.
- C. The aide/driver relationship.
1. The aide is responsible to the school bus driver.
- D. Assess contract services as a cost-effective alternative to district-owned system. Assess cooperative transportation systems with neighboring school districts.
- E. Determine location and destination of all pupils to be transported.
- F. Obtain information pertaining to individual needs for specialized equipment such as safety harnesses, seat belts, wheelchairs, gurneys, infant seats, etc.
- G. Plot the safest, most efficient route to avoid high traffic and high accident areas.
- H. Provide the drivers, the attending school and the transportation office with the following information:
1. List of pupils on the bus(es).
 2. Appropriate times for pick-up and return of pupils.
 3. Map indicating routing of the bus and location of pupils.
 4. An identification form for each pupil with information such as pupil's name, parent or guardian name, address, telephone number, location and description of home, physical and/or mental handicaps, medication, photograph, etc.
- I. Provide parents or guardians of all pupils with the driver's name, bus number, pick-up and delivery times, school hours, school calendar, etc.
- J. Require at least one dry run of all routes before start-up. Instruct the driver to meet parents in dry run.

V. ROUTING AND SCHEDULING POLICY

- A. Effective routing provides for economical and efficient operations with maximum pupil safety.
- B. Develop routing guidelines for maximum pupil ride times, size and type of vehicles to be used, acceptable pick-up locations, acceptable comingling of handicaps, acceptable orthopedic devices to transport, acceptable medical equipment to transport, etc.
- C. Assess computer scheduling systems for cost effectiveness and minimum routing problems.

VI. COMMUNICATION POLICY

- A. Determine the school district's communication needs for transportation.
- B. If two-way radio communication is needed, assess the geographical area to be covered and its topographical features.
- C. Select an appropriate radio system. Avoid citizen band radios.
- D. Train drivers, aides and dispatchers in the proper use of the system in both emergency and non-emergency situations. Minimize air time to maximize its usefulness.
- E. To avoid time consuming relay of information, routing data and confidential pupil information should be kept at the base station and in the bus.

APPENDIXES, 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 extinguishers, seats, etc.
10. Note driver attitude toward other motorists and pedestrians.
11. Follow the observation with a written report and discussion with the driver (and others, as appropriate).
12. File the written report in the driver's permanent record.

APPENDIX B
SCHOOL BUS DRIVER APPLICATION
(Example of a form that may be used)

Name _____

Present Address _____ Phone No. _____

How long have you lived at present address? _____

Last previous address _____

How long did you live there? _____ Social Security No. _____

Do you have any physical impairments that could interfere with the duties of a school bus operator? _____

Current driver's license: Operator's _____

Chauffeur's _____ Other _____

Number _____ State _____

Have you had any type of vehicle accident in the last three years?

Yes _____ No _____

If yes, give dates and explain _____

Have you been convicted of a moving traffic violation in the last three years?

Yes _____ No _____

If yes, give dates and explain _____

Has your driver's license been suspended or revoked during the last three years?

Yes _____ No _____

If yes, give dates and explain _____

To the best of my knowledge, the answers to the above are full and correct.

Date _____ Signature _____

References

(Do not use relatives. Include at least one business reference and one professional reference.)

	Name	Address	Tel.	Occupation
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____

APPENDIX C

SCHOOL BUS DRIVER PHYSICAL EXAMINATION FORM

(Example of a form that may be used)

Name _____ Address _____

Have you ever had: 1. Heart trouble? _____ 2. Epilepsy? _____

3. Fainting spells? _____ 4. Diabetes? _____

5. Tuberculosis? _____

If yes to any of the above, explain: _____

Signature of driver _____

*Visual acuity (if individual wears glasses, test and record acuity with and without glasses.)

With glasses: R 20/ _____ L 20/ _____ B 20/ _____

Without glasses: R 20/ _____ L 20/ _____ B 20/ _____

Field of vision _____ Degrees depth perception _____

Color perception _____ Muscular anomalies _____

Hearing without hearing aid: Right _____ Left _____

Heart sounds: At apex murmur _____ At base murmur _____

Rythm _____ Enlargement indicated _____

Pulse: Rate _____ Regularity _____

Blood pressure: Systolic _____ Diastolic _____

Conditions of arteries: Sclerosis _____ Pulsations _____

Lungs: Rales _____ Breath sounds _____ Chest X-ray _____

Weight _____ Height _____

Extremities: Deformities _____

Routine Office urinalysis _____

Evidence of infectious disease, mental disability, emotional instability or drug addiction _____

Remarks regarding any condition not within normal limits _____

After examination I find _____
(name)

is / / is not / / free from any ailment, disease or defect that might affect his or her ability to safely operate a school bus.

Date _____

Licensed Physician

*Visual examination may be performed by either a licensed physician or a licensed optometrist.

APPENDIX D

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.

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 danger of fire 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 line.

Appointed pupils should know how to:

- a. Turn off ignition switch.
 - b. Set emergency brake.
 - c. Summon help when and where needed.
 - d. Use fire axe or kick-out windows.
 - e. Set flags, flares or reflectors.
 - f. Open and close doors, and account for all pupils passing his station.
 - g. Help small pupils off bus.
 - h. Perform other assignments.
4. Written consent from parent or guardian should be obtained before assigning a pupil as a leader.
 5. 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.
 6. Drills should be restricted to school property and conducted under the supervision of school officials.
 7. Types of drills should be varied.
 8. Driver should stay in bus during evacuation drill. He/she must set the parking brake, turn the ignition off and place the transmission in gear.

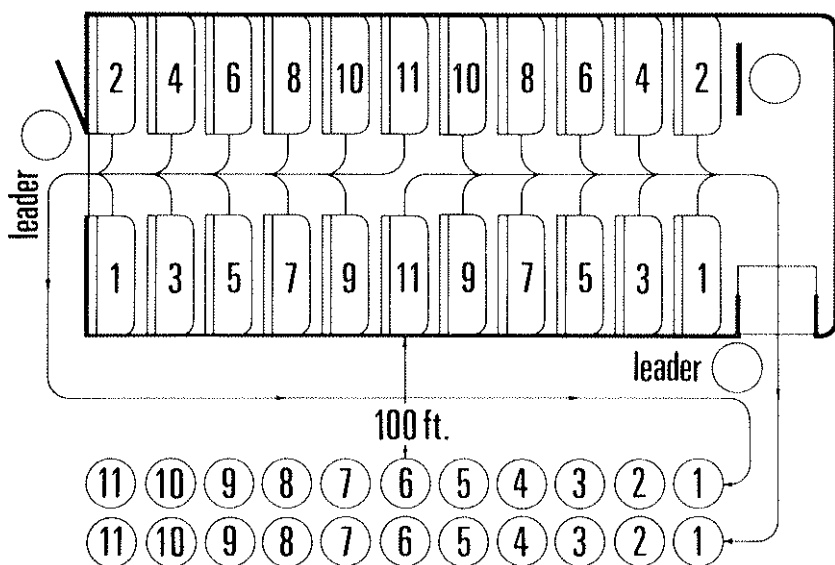
9. Pupils should not be permitted to take lunch boxes, books, etc. with them when they leave the bus. The objectives are to get pupils off safely in the shortest time possible and in an orderly fashion.
10. Pupils should travel a distance of at least 100 feet from the bus in an emergency drill and remain there until given further directions.
11. All pupils should participate in the drill, including those who ride only on special trips.
12. Each pupil should be instructed in proper safety precautions.
13. 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. (See Diagram)

65-66 PASSENGER BUS

(3 pupils to a seat)



65-66 passenger bus—11 rows of seats on each side
 59-60 passenger bus—10 rows of seats on each side
 53-54 passenger bus—9 rows of seats on each side
 47-48 passenger bus—8 rows of seats on each side

APPENDIX E

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 driver aides.
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 F

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 G

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 H

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
(name) checked below:

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

COMMENT: _____

_____ Driver's Signature _____

DATE OF OFFENSE: _____ FIRST OFFENSE _____

SECOND OFFENSE _____ THIRD OFFENSE _____

SCHOOL ADMINISTRATOR'S ACTION: _____

_____ School Administrator's Signature _____

PARENT'S/GUARDIAN'S COMMENT _____

PLEASE SIGN AND RETURN TO SCHOOL ADMINISTRATOR

Parent/Guardian's Signature _____

White-School Administrator's Copy Canary-Bus Driver's Copy

Pink-Parent's/Guardian'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:

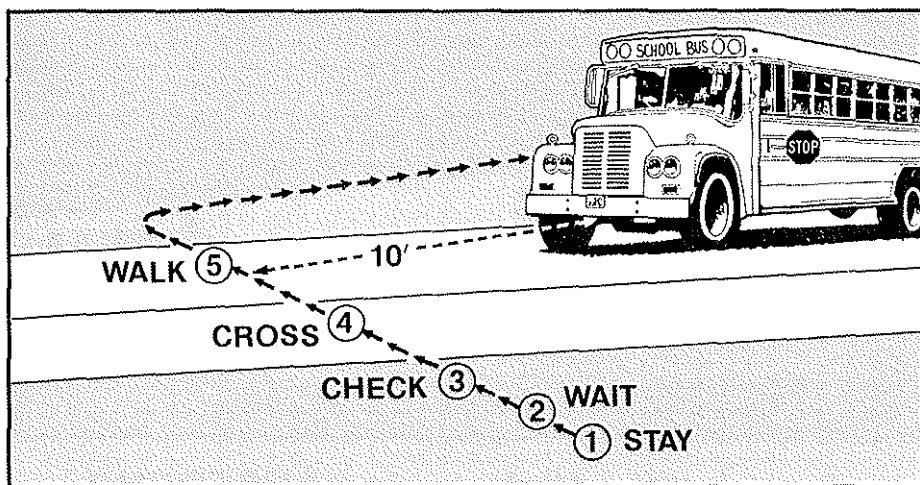
STAY—on your side of the road—far away from the traffic

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!**

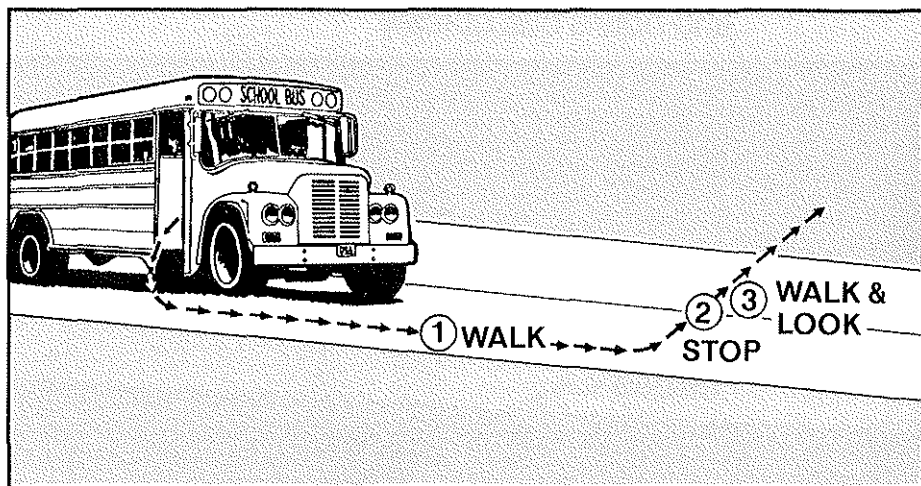
WHEN LEAVING YOUR BUS: Here's How to Cross the Road **SAFELY**

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 J

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 so as to provide 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. Plans for sidewalks for pupils walking to school should eliminate crosswalks in front of 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 K

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.	_____	_____	_____
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.	_____	_____	_____
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.	_____	_____	_____
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.	_____	_____	_____
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.	_____	_____	_____
6. The school bus is not required to back anywhere on school property.	_____	_____	_____
7. All school bus movement on the school grounds is one-way in a counter-clockwise direction.	_____	_____	_____
8. School bus traffic does not completely encircle the school building.	_____	_____	_____
9. The driver has proper sight distance at all points along the driveway.	_____	_____	_____
10. Crosswalks for pupils do not exist at the entrance to the school bus driveway.	_____	_____	_____
11. Separation is maintained between school bus traffic and all other traffic.	_____	_____	_____
12. Vehicular pickup points for non-bus pupils are on separate driveway from that used by school buses.	_____	_____	_____

- | | | | |
|--|-------|-------|-------|
| 13. Curbing and suitable drainage are provided along driveways. | _____ | _____ | _____ |
| 14. Curbing and driveway construction comply with state highway specifications. | _____ | _____ | _____ |
| 15. At ingress and egress areas to and from the school, there is a minimum radius on inner edge of driveway pavement of from 50 to 100 feet. | _____ | _____ | _____ |
| 16. On the school site, there is a minimum radius of inner edge of driveway pavement of 60 feet. | _____ | _____ | _____ |
| 17. Between reverse curves, at least a 50-foot tangent section is provided. | _____ | _____ | _____ |
| 18. At ingress and egress points a maximum grade of 2% is adhered to. | _____ | _____ | _____ |
| 19. A maximum grade of 5% is adhered to on the school bus driveway within the school site. | _____ | _____ | _____ |

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 L

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 lane 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 at which there is in operation flashing red lights and/or bell 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 M

TRIP REQUEST FORM

Number _____

School:		Teachers:		Date of trip:	
No. of Passengers:		Extra Equipment:			
Depart From:		Departure Time:		Destination:	
		Arrival Time:			
Purpose of Trip:					
Transportation Requested By:					
				Date Ordered:	
Reviewed and Approved by: Name:				Reimbursement Category:	
Trip Assigned to Bus No.:			Driver:		
Odometer Returning to the Yard:		Odometer Arriving Destination or Original Pick-up Point:		No. of Pass:	
Odometer Leaving Bus Yard:		Odometer Leaving Pick-up Point:		Teller:	
Total Mileage:		Actual Pupil Trip Mileage:		Parking Fees:	
Driver's Additional Time:		Actual Arrival Time at School:		Remarks:	
Time Out:		Time In:		Driver's Signature	

RESOLUTIONS

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

Whereas, the nation's greatest resource is children and their safety is a high public priority; and

Whereas, the transportation of children in certified school buses is recognized as the safest mode of passenger transportation available on the highways today; and

Whereas, behavioral research conducted by public and private agencies has indicated that passive restraint systems may offer more passenger protection for children who are not immediately supervised by adults; and

Whereas, research conducted by the United States government resulted in radically improved construction design and seating systems for collision protection and passive restraint systems for passenger protection in school buses manufactured after April 1, 1977; and

Whereas, extensive research conducted by the United States and Canadian governments, and other public and private agencies have yielded negative conclusions on the safety of seat belts installed in 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, has been proven to be 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 such time that extensive and 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 and determine if the passive restraint system currently mandated in school buses can be further improved to increase the safety of passengers; and
5. That all states are 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 TENTH
NATIONAL CONFERENCE ON SCHOOL TRANSPORTATION:**

1. Urge continued research into the safest way to transport handicapped pupils confined to wheelchairs, and urge wheelchair manufacturers to produce certified wheelchairs designed to be transported on school buses which are capable of withstanding crash forces equal to the safety provided by the Federal Seat Standards.
2. Urge the National Highway Traffic Safety Administration to establish and prescribe in Standard No. 221 a valid strength requirement for joints and outside panels of the bus body.
3. Urge state and local agencies providing transportation for school children to utilize vehicles which meet school bus federal standards for construction and operation whenever practicable and feasible.
4. Urge state legislatures and appropriate state agencies to enact laws, or promulgate rules and regulations and enforce same, precluding non-public schools or other agencies from licensing vehicles as school buses unless those vehicles meet state and federal school bus construction standards.
5. 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.
6. Urge the National Highway Traffic Safety Administration and seating manufacturers to sponsor independent research on recliner seating for activity travel and to make the resulting data available to professional organizations, trade journals and state directors of school transportation.
7. Urge the National Highway Traffic Safety Administration, school bus body manufacturers and appropriate state and local authorities to investigate the methods used to fasten school bus seats to the floor of the body and test these methods under crash conditions and report findings to the industry.
8. Urge school bus body manufacturers and replacement equipment suppliers to develop, test, certify and offer for sale, seating materials with improved fire resistance.
9. Urge school bus chassis manufacturers to solicit user evaluation prior to making design changes on such items as clutch, brake, accelerator and other driver controls.
10. Urge Governor's Highway Safety Representatives in all states to continue to support school bus driver training through the funding established in Section 1, 402 of Title 23, USC.
11. Urge federal and state agencies promulgating rules and regulations relating to school buses to document the need for such rule making

through an appropriate research effort as well as to determine the safety and cost benefit of the proposed rules.

12. 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.
13. Pledge to serve as resource persons within their respective states to accelerate implementation of improved pupil transportation programs based upon the conference proceedings.
14. Encourage the appropriate state agencies to continue providing active support and assistance to school systems for improving school transportation programs.
15. 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 Tenth National Conference on School Transportation, professional trade journals and newsletters written for the school transportation industry, in order to provide for an improved and expanded base of knowledge and understanding of school transportation.
16. Encourage and support appropriate activities which will conserve energy, nonrenewable and natural resources, in the daily and long term operation of school transportation programs. Further, we recognize that lowest-priced equipment and components available may not be the most cost-effective and/or fuel-efficient; and, therefore, urge that future decisions related to school bus specifications and purchases be based on life cycle costing procedures which include the consideration of the initial purchase price, all maintenance and operational costs including labor, fuel, oil and parts required to operate the bus over its entire life; and, further encourage that in future conferences, operating procedures (including proper driver practices, routing and scheduling) be adopted that are the most fuel-efficient without sacrificing pupil safety.
17. Grant to the conference Editing Committee the editorial prerogative needed to prepare the official conference proceedings. The Conference Steering Committee shall provide oversight during the editing process.
18. Urge the National Association of State Directors of Pupil Transportation Services to monitor the adoption of the Uniform School Bus Accident Report Form in each state and, as each state adopts its accident reporting form, a copy be filed with the Association as a reference for all states.
19. Urge the body and chassis manufacturers to provide training facilities throughout the country where school bus mechanics can be properly trained, certified and classified as school bus mechanics.

20. Urge all state legislatures and appropriate state agencies to enact laws and/or promulgate rules and regulations and to enforce same to preclude nonpublic schools or other agencies from using untrained school bus drivers.
21. Urge all school districts to provide monthly instruction for pupils in grades kindergarten through six concerning the proper procedures to follow while boarding and alighting from a school bus.

BE IT FURTHER RESOLVED THAT THE SPONSORING ORGANIZATIONS (NASDPTS, NAPT, NSTA, NSC, SBMI, AND CMSU):

1. Review the progress being made toward realization of the goals established for school transportation by the Tenth National Conference on School Transportation and prepare for future conferences as needed.
2. Provide copies of these resolutions to school bus body and chassis manufacturers, National Highway Traffic Safety Administration, Environmental Protection Agency, and other agencies, organizations and individuals deemed appropriate.
3. Provide to the school transportation industry via newsletters, professional journals and other media, status reports as to the publishing and availability of the proceedings of the Tenth National Conference on School Transportation.
4. Invite representatives 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. Encourage state school transportation authorities appointing delegates to future national conferences to continue to include knowledgeable individuals in their delegations regardless of race, sex or ethnic background.
6. Direct future school bus body standards writing committees to address the driver seat and driver compartment area to further enhance the safety and comfort of the driver and to ensure that regardless of physical stature, the driver is able to safely and comfortably operate all driver controls.
7. Appoint a special committee to conduct research, experimentation and investigation as may be necessary to determine the most advantageous location for the spare tire on Type A school buses.
8. Continue their efforts to encourage professional personnel working in areas within or allied with school transportation to participate in future national conferences.
9. Initiate a study of the feasibility of the potential use of 102-inch-wide school buses and, if appropriate, prepare draft standards for the con-

struction and use of these vehicles for presentation to future conferences.

10. 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.
11. 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 Eleventh National Conference on School Transportation without need for a waiver of Conference Operating Rules.

RESOLUTIONS OF APPRECIATION

BE IT RESOLVED THAT THE DELEGATES OF THE TENTH NATIONAL CONFERENCE ON SCHOOL TRANSPORTATION:

1. Express appreciation to the National Association 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 at Central Missouri State University, Mr. Bill G. Loshbough, General Conference Chairman and Dr. Robert D. Benton, 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 for his outstanding contributions and continuing commitment to the national movement for safe and efficient school transportation.
4. Commend with gratitude the work of J. Pope Baird as a leader among school transportation officials of the United States and acknowledge his record as the only person who participated in all of the National Conferences, 1939 through 1980.
5. Recognize the continuing interest and leadership of Dr. Norman Key in school transportation, for his numerous articles on school transportation and related safety topics and for his establishment of a permanent scholarship at Central Missouri State University for school transportation and other safety majors.
6. Express appreciation to the National Safety Council for publishing and marketing the proceedings of the Tenth national Conference on School Transportation.

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Minimum Standard Uniform Accident Report Form

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