

South Carolina Guidelines for the Seating of Preschool-Aged Children in School Buses

Introduction

Each year an increasing number of preschool-aged children are bused to public schools, including charter school programs. As always, safety is the number one concern of school transportation providers. To assure the safety of preschool-aged students on school buses, the National Highway Traffic Safety Administration (NHTSA) recently conducted crash testing of preschool-sized dummies in school bus seats. The test results indicated that preschool-aged children are safest when transported in a child safety restraint system (CSRS) that meets Federal Motor Vehicle Safety Standard (FMVSS) 213, "Child Restraint Systems," and that is correctly attached to the school bus bench seat.

Based on its research, in February 1999 NHTSA released the *Guideline for the Safe Transportation of Pre-school Age Children in School Buses* (hereinafter referred to as the NHTSA Guidelines). The NHTSA Guidelines and other information are contained within the *South Carolina Guidelines for Seating of Preschool-Aged Children in School Buses*.

The purpose of the *South Carolina Guidelines for Seating of Preschool-Aged Children in School Buses* is to

- convey the NHTSA Preschool Seating Guidelines (appendix A);
- provide clarification and interpretation of the NHTSA Guidelines; and
- provide additional background and South Carolina Department of Education recommendations to districts regarding technical and operational issues associated with transporting preschool-aged students, including
 - a. definitions of terms,
 - b. applicable standards and rules,
 - c. South Carolina Statutes,
 - d. South Carolina State Board of Education Regulations,
 - e. technical procedures for equipping of buses to transport preschool-aged students,
 - f. operational procedures for transporting preschool-aged students,
 - g. answers to frequently asked questions (FAQs),
 - h. child passenger safety contacts,
 - i. NHTSA *Guideline for the Safe Transportation of Pre-school Age Children in School Buses*,
 - j. information on the proper spacing of passenger seats,

- k. Website resources, and
- l. Information available on the American Academy of Pediatrics Website.

Please note that in several instances within these guidelines the word “shall” is used. The use of “shall” is to be interpreted, for the purposes of these guidelines, as follows:

- A. Federal Motor Vehicle Safety Standards apply, under federal regulations, to the manufacture and sale of new motor vehicles. The South Carolina Department of Education owns the state fleet of school buses and by practice maintains compliance with all FMVSSs. Therefore, this document uses the word “shall” when referring to FMVSSs.
- B. The recommendations herein should be followed in total, to the maximum extent possible. The word “shall” is used to emphasize that there may be considerable risk in choosing to adopt part but not all of these recommendations, since many of the recommended practices must be implemented together to ensure safety.

If you have any questions or comments about the information and recommendations contained herein, please e-mail Richard Podmore at rpodmore@ed.sc.gov, or call him at 803-734-8245.

Definitions of Terms

Child Safety Restraint System (CSRS). Any device (except a passenger system lap seat belt or lap/shoulder seat belt) designed for use in a motor vehicle to restrain, seat, or position a child who weighs less than fifty pounds.

Kindergarten-Aged Child. A child who turned five years of age on or before September 1 during the current school year.

Preschool-Aged Child. A child who is younger than a kindergarten-aged child and who weighs forty pounds or less.

Seat Belt–Ready Seats, Lap Belt–Ready Seats, CSRS-Ready Seats. These terms, which are used interchangeably throughout this document, refer to the FMVSS 210 seats that come from the factory ready to accept lap seat belts and therefore child safety restraint systems.

Type A School Bus. A van conversion or bus constructed utilizing a cutaway front-section vehicle with a left side driver’s door. The entrance door is behind the front wheels. This definition includes two classifications: Type A1, with a gross vehicle weight rating (GVWR) less than or equal to ten thousand pounds; and Type A2, with a GVWR greater than ten thousand pounds.

Type B School Bus. A bus constructed utilizing a stripped chassis. The entrance door is behind the front wheels. This definition includes two classifications: Type B1, with a GVWR less than or equal to ten thousand pounds; and Type B2, with a GVWR greater than ten thousand pounds.

Type C School Bus. A bus constructed utilizing a chassis with a hood and front fender assembly. The entrance door is behind the front wheels.

Type D School Bus. A bus constructed utilizing a stripped chassis. The entrance door is ahead of the front wheels.

C. E. White’s Integrated Child Restraint School Bus Seat.* A school bus seat that has an integrated child restraint seat. The bus seat can also be used as a regular school bus bench seat. The child restraint features of the integrated seats are designed for children weighing twenty to fifty pounds (see attachment).

Thomas Built Buses’s Mobile Occupant Mini-Seat (MOMS) Seating System.* A school bus seating system consisting of a specially designed school bus bench seat that is equipped with child restraint anchorages (compliant with FMVSS 210) that work in conjunction with a removable Century infant or convertible child safety seat designed specifically for the system (see attachment).

Federal Motor Vehicle Safety Standards (FMVSSs). Federal requirements for safety equipment and performance specifications under which new vehicles or items of motor vehicle equipment sold in the United States must be built (49 Code of Federal Regulations, Part 571). Applicability of the requirements to different vehicle types (including school buses) is defined within each FMVSS. (See the next section, “Applicable Standards and Rules,” for a summary of FMVSS referred to in this guideline.)

* *Please note that the Department of Education does not endorse specific products and services. Products performing similar functions may be available from other sources.*

Applicable Standards and Rules

Federal Motor Vehicle Safety Standards (FMVSS)

FMVSS 209, Seat Belt Assemblies. This standard specifies requirements for seat belt assemblies. The requirements apply to straps, webbing, or similar material, as well as to all necessary buckles and other fasteners and all hardware designed for installing the assembly in a motor vehicle, and to the installation, usage, and maintenance instructions for the assembly.

FMVSS 210, Seat Belt Assembly Anchorages. This standard establishes requirements for seat belt assembly anchorages to ensure proper location for effective occupant restraint and to reduce the likelihood of failure. The requirements apply to any component, other than the webbing or straps, involved in transferring seat belt loads to the vehicle structure.

FMVSS 213, Child Restraint Systems. This standard specifies requirements for child restraint systems used in motor vehicles and aircraft. Its purpose is to reduce the number of children killed or injured in motor vehicle crashes. FMVSS 213 is applicable to all child restraint systems designed to transport children under fifty pounds. Examples of the common terms used for the kinds of child safety seats (usually portable and removable) manufactured to meet this standard are:

“Infant Only” Seats. Small, lightweight safety seats which are designed for use rear-facing only. This kind can be used only as long as the baby’s head is enclosed by the top rim of the seat. The label on the seat gives the upper weight limit (seventeen to twenty-two pounds). One seat can be converted into a car bed for babies who must lie flat. It is important to maintain a 45-degree angle when installing the seat to ensure that the infant can breath properly (sometimes it is necessary to insert a rolled-up towel or cut-up Pool Noodles, which are made of Styrofoam, under the seat to achieve this angle).

“Convertible” Seats. Larger seats usually designed to fit children from birth to about forty pounds. Some new models have weight limits as high as thirty-five pounds for rear-facing use. These products are especially good for babies under age one who are growing more rapidly than average. It may be turned around to face the front when the baby is one year old and weighs at least twenty pounds. It is important to follow manufacturer guidelines regarding adjustment of the harnessing straps when reversing the seat from rearward facing to forward facing.

“Forward-Facing Only” Seats. Nonconvertible child safety seats used only in the forward-facing position. This category has different lower weight limits. Most start at twenty to twenty-five pounds and go up to about forty pounds (check the manufacturer’s label) and fit children from one year old to about four years old. *Note:* Some of these seats have removable harness systems to accommodate later use as a belt-positioning booster seat for children larger than forty pounds on non-school bus vehicles in combination with the three-point lap/shoulder harnesses that are part of the vehicle. It is recommended that “forward facing only” seats be used on school buses *only with the*

child seat's built-in harnessing system in place and in use, securing the child to the seat. Shield booster-type seats should not be used on school bus bench seats.

Whichever seat you use, the baby should ride rear-facing until he or she is one year of age and weighs at least twenty pounds (see the attached American Academy of Pediatrics information regarding FMVSS 213–compliant child safety seats).

FMVSS 222, School Bus Passenger Seating and Crash Protection. This standard establishes occupant protection requirements for school bus passenger seating and restraining barriers. The purpose of this standard is to reduce the number of deaths and the severity of injuries that result from the impact of school bus occupants against structures within the vehicle during crashes and sudden driving maneuvers. This standard is frequently referred to as “compartmentalization.”

FMVSS 225, Child Restraint Anchorage Systems. This standard establishes requirements for child restraint anchorage systems to ensure their proper location and strength for the effective securing of child restraints to reduce the likelihood of anchorage systems’ failure and to increase the likelihood that child restraints are properly secured. In the future, vehicles will be equipped with child restraint anchorage systems that are standardized and independent of the vehicle seat belts. FMVSS 225–compliant systems are sometimes referred to as UCRA (universal child restraint anchorages) systems. By September 1, 2002, UCRA systems will be required in two seating positions on Type A1 school buses and optional for all Type A2, B, C, and D school buses.

FMVSS 302, Flammability of Interior Materials. This standard specifies burn resistance requirements for materials used in the occupant compartments of motor vehicles, including the materials used for child safety seats. Its purpose is to reduce deaths and injuries to motor vehicle occupants caused by vehicle fires, especially those originating in the interior of the vehicle from sources such as matches or cigarettes.

South Carolina Law

Excerpts from Chapter 67, Title 59, of the South Carolina Code of Laws

Section 59-67-20. Regulations of State Board of Education governing design and operation of school buses.

The State Board of Education, by and with the advice of the Department of Public Safety, shall adopt and enforce regulations not inconsistent with Chapter 5 of Title 56 to govern the design and operation of all school buses used for the transportation of school children when owned and operated by any school district or privately owned and operated under contract with any school district in this State and such regulations shall by reference be made a part of any such contract with a school district. Every school district, its officers and employees, and every person employed under contract by a school district shall be subject to such regulations. Any officer or employee of any school district who violates any of such regulations or fails to include the obligation to comply with such regulations in any contract executed by him on behalf of a school

district shall be guilty of misconduct and subject to removal from office or employment. Any person operating a school bus under contract with a school district who fails to comply with any such regulations shall be guilty of breach of contract and such contract shall be canceled after notice and hearing by the responsible officers of such school district.

Section 59-67-100. Seating space; aisle; seats; number and location of pupils.

Sufficient seating space shall be provided so far as practicable for each passenger transported inside each school bus, no aisle in the school bus shall be less than twelve inches in width and all seats shall be securely fastened to the floor or body of the vehicle. All pupils must be within the body of the bus at all times while the bus is in motion. They shall not be permitted to ride on the running boards or in any other place outside the bus, nor shall they be permitted to ride with heads or arms protruding through open windows. Commencing with the 1974–75 school year, the number of pupils transported on a school bus shall not exceed by more than ten percent the manufacturer's rated seating capacity of such bus; and by the school year 1975–76, seating space shall be provided for each pupil transported. Provided, however, that a limited number of standees may be permitted until the bus routes can be adjusted to accommodate the overload but not to exceed twenty school days.

Section 59-67-270. Inspection of buses.

All school buses shall be subject to inspection at any time or place by officers of the State Highway Patrol or inspection forces. No school bus shall continue in operation in the transportation of pupils when found to be unsafe until the unsafe conditions disclosed by such inspection shall have been corrected.

Section 59-67-290. Negligence or carelessness of driver not imputable to passengers.

The negligence or carelessness of the driver of any motor-driven vehicle used for the transportation of children to and from school shall not be imputed to the passengers on such vehicle.

Section 59-67-410. Control by state [sic] Board of Education of school bus transportation.

The control and management of all school bus transportation in the State shall be vested in the State Board of Education.

Section 59-67-425. Transportation of children attending kindergarten or child development programs.

Three, four, or five-year old children attending public school-sponsored kindergarten or child development programs must be permitted to ride state-owned buses to the extent funds are made available by the General Assembly or as long as transportation services may be provided at no additional cost to the State.

Section 59-67-570. Rules and regulations.

The State Board of Education may adopt such rules and regulations as may be necessary to carry out the intent and purposes of this article. Such rules and regulations shall have the full force and effect of law. But rules and regulations that affect the functions of the Department of Public Safety under this article or the operation of buses on the highways shall be adopted only jointly with the Department of Public Safety.

**South Carolina State Board of Education Regulation
Excerpts from Article 5, Transportation Regulations, Section 43-80**

[Regulation A. Responsibilities of School District Board of Trustees.]

The school district board of trustees shall be responsible to the State Board of Education for the supervision of the school transportation program in the district. This shall include the recruitment of school bus drivers, employment and dismissal of school bus drivers, supervision of school bus drivers and the pupils being transported, proposed routing of buses, accurate transportation records as to mileage, number of pupils transported pursuant to Section 59-67-100, driver's time reports, school bus safety, and enforcing all other transportation regulations. The recruitment and employment of school bus drivers and supervisory personnel is the responsibility of the school district board of trustees. The transportation of pupils is an integral and essential part of the school program, and teachers and administrative personnel shall be assigned to school bus duties in the interest of the transportation program.

[Regulation I. Adequate Supervision Required.]

Regularly assigned buses may be used to transport pupils to vocational classes upon approval of the South Carolina Department of Education provided regular buses are the most cost effective method of transportation. If a regular assigned bus is not the most cost effective method, the District shall examine less costly transportation options. The South Carolina Department of Education shall reimburse the district for the least expensive alternative transportation mode. When buses are used, the class schedules shall be arranged so that buses can complete their regular morning and afternoon routes. **As with all school bus transportation services, the school district Board of Trustees shall be responsible for providing adequate supervision on the bus at all times.**

Technical Procedures for Equipping Buses to Transport Preschool-Aged Students

The following technical procedures are South Carolina Department of Education recommendations, which augment or interpret the attached NHTSA Guidelines. It is suggested that school districts follow these procedures to the maximum extent practical in transporting preschool-aged children (as defined herein) on school buses. It is also recommended that districts follow the attached NHTSA Guidelines for items not otherwise covered herein.

School bus seating and crash protection equipment–related procedures for transporting preschool-aged children include all of the following:

- A. **Child Safety Restraint Systems (CSRSs).** CSRSs suitable for the child’s weight and age and meeting FMVSS 213 shall be used. All CSRSs shall have a manufacturer certification label attached to the system that confirms compliance with all applicable FMVSS requirements and that provides information as to correct positioning for the weight and age of the child.
- B. **Securement of CSRS to Seat.** All CSRS attachment hardware and anchorage systems shall meet FMVSS 210, “Seat Belt Assembly Anchorages,” or FMVSS 225, “Child Restraint Anchorage Systems.” School bus seats designated for CSRSs must meet FMVSS 225 or include lap belts that meet FMVSS 209, “Seat Belt Assemblies,” and anchors that meet FMVSS 210 (designed to secure lap belts, i.e., “lap belt–ready” seats). Manufacturers should be consulted for information on hardware and installation procedures for equipment meeting these FMVSSs. In the State’s school bus fleet, only buses designated to transport students with disabilities comply with these securement requirements. All future bus purchases, starting with the 2000 model year, will have compliant securement systems on the first two rows of seats, and all buses designed to transport students with disabilities will continue to have compliant seats.
- C. **Maximum Seat Spacing.** School bus bench seats on which CSRSs are secured shall be installed at the maximum distance apart (front to rear) that is allowed by FMVSS 222, per the NHTSA Guidelines. This distancing exists to provide the maximum available space for the CSRSs, to accommodate operational access needs, and to provide maximum safety for the occupant. In the State’s school bus fleet, only buses designated to transport students with disabilities comply with these seat spacing requirements. All future bus purchases, starting with the 2000 model year, will have compliant seat spacing for the first two rows of seats, and all buses designed to transport students with disabilities will continue to have compliant seat spacing.

Attached are guidelines for measuring maximum seat spacing, from the four major body manufacturers. If you have any questions, you may also contact the following South Carolina dealers and manufacturer contacts.

South Carolina Dealers

Interstate Transportation	Robert Coleman (Thomas)	803-776-5041
National Bus Sales and Leasing Whatley, Inc.	Barney Smith (U.S. Bus) Paul Whatley (Blue Bird, Collins, and Girardin)	803-714-5511 803-536-4512
Whittle Motors Company	Michael Nix (Carpenter and Mid Bus)	803-266-7446

Manufacturer Contacts

AmTran Corporation	Jim Jumonville	501-327-7761
Blue Bird Corporation	Steve Mann	912-822-2377
Carpenter Industries	Mike Sykes	765-965-4301
Collins Bus Corporation	Chris McClung	316-662-9000
Girardin Minibus	Ron Campbell	819-477-3222
Thomas Built Buses, Inc.	Ron Marion	336-841-5715
U.S. Bus Corporation	Peter Wade	914-357-2510

- D. **Location of School Bus Bench Seats for CSRSs.** School bus bench seats, equipped for securement of CSRSs, should be in the forward-most positions within the bus in order to provide drivers with quick access and a clear view of the CSRS occupants. However, if only four seating positions are provided, it is recommended that the first two rows on the right side of the bus be used.
- E. **Retrofitting Existing Buses.** The State and the school districts may retrofit their current buses to meet the new seating guidelines. If buses are to be used to transport preschool-aged children (as defined herein), they must be in compliance with the recommendations contained in this guideline. The owner of the bus must ensure that no existing FMVSS (e.g., FMVSS 222, regarding school bus seat anchorage, padding, spacing, and so on) is rendered inoperative when any modifications, changes, or additions are being made to buses. State and school district personnel must adhere to all applicable manufacturer and federal guidelines for the components being installed. Existing school bus seats should be equipped with lap belts for child restraint securement only if they were originally designed as FMVSS 210 compliant lap belt-ready seats. All state-owned buses designed to transport students with disabilities are equipped with “210 seats.” When a new lap belt-ready school bus seat with a lap belt is retrofitted into a bus, instructions obtained from the school bus or seat manufacturer on seat and restraint system installation should be followed in order to allow for proper securement of a CSRS. When a school bus is retrofitted, the bus owner should ensure that seat spacing for the seats equipped to accommodate CSRSs meets FMVSS maximum seat spacing requirements for the particular body application (see attached maximum seat spacing chart for dimensions applicable to each manufacturer).

- F. Beginning in the fall of 2000, new buses purchased will include specifications that the first two rows in all Type C and D school buses will be required to meet NHTSA guidelines for maximum seat spacing and will be equipped with appropriate anchorages (FMVSS 210 and/or 225).
- G. Each school bus that transports CSRSs shall be equipped with a seat belt/strap cutter. The seat belt/strap cutter must be stored, secured from easy access by students, in a location easily accessible to the bus driver.

Operational Procedures for Transporting Preschool-Aged Students

The following operational procedures are South Carolina Department of Education recommendations, which augment or interpret the attached NHTSA Guidelines. It is suggested that school districts follow these procedures to the *maximum extent practical* in transporting preschool-aged children (as defined herein) on school buses. The Department of Education acknowledges that there are not enough school bus bench seats for CSRSs available in the state-owned fleet as of July 1, 2000. The Department has implemented a school bus replacement program that will include this specification in all new school buses. This program should make adequate buses available with school bus bench seats for CSRSs within the next five years. It is also recommended that districts follow the attached NHTSA Guidelines for items not covered herein.

- A. **Specifications for Child Safety Restraint Systems (for the provider of the CSRS).** The provider of the Child Safety Restraint System should ensure that each preschool-aged child that is transported has a CSRS appropriate for his or her weight, height, and age; that meets all applicable FMVSSs (look for the manufacturer's certification on the label attached to the system); and that has all functional parts and components for proper usage as provided by the manufacturer. The provider also must register the CSRS with the its manufacturer to facilitate any recalls. If the CSRS is the subject of a recall, the provider must ensure that any necessary repairs or modifications have been made according to the manufacturer's specifications. The CSRS must be maintained as recommended by its manufacturer, including disposal of any CSRS that has been involved in a crash.

To further explain: if a CSRS is being used (occupied by a child) in a vehicle and the vehicle is involved in a collision, the CSRS must not be reused and must be disposed of. Subject to these guidelines, the State, the school district, the parents, or any other party may provide the CSRS. To assure compliance with the above CSRS requirements, it is strongly recommended that the CSRSs be owned by the State or the school district and be managed by the school district. The State, when purchasing new school buses, will purchase a CSRS for each MOM seat position and for each seat specially designed seat position that accommodates a UCRA-attached CSRS. The State will not be responsible for replacement of these CSRSs. However, if the CSRS is not provided by the State or the school district, the district must establish a procedure that ensures that the CSRS is registered with the manufacturer, that recalls are

completed, and that the CSRS has not been involved in an accident. In the latter sentence, the phrase “involved in an accident” refers to a CSRS that is occupied by a child when the accident occurs and refers to an accident that is severe enough to apply stress forces to the restraint system of the CSRS.

- B. Guidelines for Proper Securement (for the transportation provider).** The transportation provider should ensure that the CSRS is used and secured correctly in the school bus. The child is to be secured in the CSRS according to manufacturer’s instructions. Personnel responsible for securing CSRSs onto school bus seats and for securing children into CSRSs need to be properly trained, and all personnel involved with CSRSs need to be provided up-to-date information and training. When being transported on the school bus, preschool-aged children are to be supervised according to their developmental and functioning level.
- C. Guidelines for Loading and Unloading CSRSs.** The transportation provider should ensure the proper securement of the child in the CSRS and the proper securement of the CSRS to the bus seat. Specified procedures should be established for children who are loaded and unload while restrained in a CSRS.
- D. Training.** The school district shall have procedures that provide documented training to those directly involved in the transport of infants, toddlers, and other preschool-aged children on school buses. Training components shall include, but not be limited to,
- evacuation procedures (see item E, “Evacuation,” below),
 - CSRS securement procedures,
 - child securement procedures,
 - proper lifting and handling, and
 - the addressing of special needs.

Trainees shall include parent passengers, drivers, bus attendants, and emergency response personnel. When training procedures are established, it should be noted that some children in CSRSs may have special needs, including medical complexity, that must be addressed on a child-by-child basis. Instruction on the proper use of the seat belt/strap cutter should be included in the training session.

The NHTSA offers a thirty-two-hour certification course in child passenger safety; the names of local contacts are attached to this document. Physical and occupational therapists may be involved in the training in individual cases when there are special needs. Each district should establish procedures for identifying who is responsible for carrying the seat and the child on and off the bus, if applicable.

- E. Evacuation.** The school district must establish a written plan for evacuating preschool children and other passengers in CSRSs in the event of an emergency. This written plan shall be provided to drivers, monitors, and local emergency response personnel. The plan shall explicitly state how children (both in and out of the CSRSs) should be evacuated from the school bus. As detailed below, evacuation practices shall take place on a regular schedule. Evacuation drills shall include parent passengers and their children that are transported. To ensure that the emergency evacuation process is safe and timely when there are numerous

CSRSs being used on a single school bus, it is recommended that a school bus aide or attendant be provided on a bus when there are more than three CSRSs in use on it. An additional aide or attendant should be in attendance for every additional three CSRSs in use.

- F. **Maintenance of CSRSs.** Each school district must establish procedures for the maintenance and cleaning of CSRSs. The maintenance must assure that the CSRS continues to perform as if new. Cleaning of CSRSs must protect against contagious and communicable diseases.

Frequently Asked Questions (FAQs)

Question: *The federal definition of child safety restraint systems provides for children up to fifty pounds. Most toddler car seats only accommodate children who weigh between twenty and forty pounds. What form of restraint is recommended for preschool children between forty and fifty pounds?*

Answer: In Type A1 buses, equipped from the factory with lap belts, it is required that all passengers use the belts, including children between forty and fifty pounds. In all other type buses, NHTSA requires compartmentalization to provide occupant protection for preschool-aged children weighing between forty and fifty pounds. Another restraint option for preschool-aged students between forty and fifty pounds in any type of school bus is an approved safety vest or a C. E. White seat. There is currently a child safety seat that accommodates a child up to sixty pounds, and similar seats are expected to be available to consumers in the near future. The safety-vest can be used only on seats that are designed for lap belts. The seat position behind the safety-vest position shall remain vacant.

Question: *Are school districts required and is the State planning to retrofit existing buses to meet the new guidelines?*

Answer: No, the State will not retrofit any state-owned buses, nor are school districts *required* to retrofit existing buses.

Question: *Can school districts modify state school buses to accommodate CSRSs?*

Answer: Yes, in certain limited cases with the approval of the Department of Education.

Question: *If the State or the district decides to retrofit existing buses, how should it proceed?*

Answer: If the State or a school district decides to retrofit existing buses, it must contact the body manufacturer to get retrofit instructions, including instructions on proper hardware and mounting of any seats that may be relocated. You may also refer to the specific

recommendations for seat spacing, placement, CSRS and passenger securement, and other retrofitting issues included in this guideline.

Question: *How can I assure compliance according to model year and manufacturer of the bus?*

Answer: You should contact the local school bus maintenance shop to assure compliance status of each state-owned bus. The school district should contact the manufacturer for district-owned buses. You may also refer to the manufacturer information on maximum seat spacing included in this guideline.

Question: *Do existing FMVSS 210 seats meet the Guidelines for the Safe Transportation of Preschool-Aged Children in School Buses?*

Answer: No, there are other FMVSS requirements that must be satisfied. To meet the guideline requirements the seats must also be spaced to provide the maximum seat spacing and a CSRS securement system must be provided.

Question: *Will school bus specifications comply with the NHTSA Guidelines for all 2000 model-year school buses?*

Answer: No, the NHTSA Guidelines will pertain to school buses purchased from the fall 2000 bid and later (buses to be delivered starting about May 2001). For these buses only the first three rows of seats must be compliant.

Question: *According to FMVSS 222 maximum seat spacing requirements, can students other than preschool-aged students use the school bus bench seats on buses designed to comply with these preschool seating guidelines?*

Answer: Yes, the seat spacing in accordance with the new guidelines for preschool-aged students falls within FMVSS 222 maximum seat spacing specifications allowed for all passengers.

Question: *If I retrofit a bus with seat belt-ready seats, do I have to install a specified minimum number of these seats (for example, what if I only need to accommodate one preschool-aged child)?*

Answer: No. These guidelines are not intended to require buses to be retrofitted with a certain number of seat belt-ready seats. The number required on existing buses should be according to local needs.

Question: *Will maximum seat spacing reduce the passenger capacity of the bus?*

Answer: Not for most sizes of *new* buses (a capacity of fewer than eighty-four passengers). Most retrofitted buses, however, will probably lose a row of seats due to the extra room required for the CSRS-ready seat spacing.

Question: *How should all the seats be configured in the bus if I retrofit the bus with CSRS-ready seats?*

Answer: The State and the school districts can retrofit CSRS-ready seats into a bus and relocate existing school bus bench seats according to one of the following three basic configurations.

Note: Any of these configurations will result in the removal of at least one row of regular school bus bench seats. Under FMVSS 222, a padded barrier must be installed in front of any seat that exceeds the maximum seat spacing dimension, so as to provide a padded surface within the allowable seat spacing. *Representative school bus seating diagrams for all configurations are included in this guideline.*

- A row of regular seats could be removed, and the CSRS-ready seats in the front of the bus could be moved back far enough that the rearmost CSRS-ready seat would serve as the required barrier in front of the forward-most regular passenger seat. The existing barriers behind the driver and the step well would then have to be moved back far enough to provide the required spacing dimensions in front of the forward-most CSRS-ready seat on each side of the bus. Provisions would need to be made for resecurement of the entrance grab (hand) rail. *This is probably the most practical seat spacing option.*
- A regular bench seat could be removed just behind the retrofitted CSRS-ready seats, with a padded barrier installed in front of the forward-most remaining regular bench seat. This barrier would have to be located to provide the required spacing dimension in front of the forward-most regular bench seat and at least ten inches of clear space *behind* the rearmost CSRS ready seat. *This is a less practical alternative due to the significant loss of passenger capacity that will result.*
- After the installation of the CSRS-ready seats with maximum allowable spacing at the front of the bus, all school bus bench seats rearward of the CSRS-ready seats could be moved back in order to maintain South Carolina’s minimum knee-room requirement (twenty-five inches on all-capacity Types C and D buses) throughout the bus. *This is probably the least attractive option, since it would require significantly more labor than the other two .*

Question: *Are there any other important requirements in retrofitting a bus with CSRS-ready seats?*

Answer: Yes. In order to maintain compliance with FMVSS 217, “Bus Emergency Exits and Window Retention and Release,” the State or the district must always ensure that any seat

relocations or other modifications made do not reduce the spacing at the emergency door or the emergency exit windows. The State or district must also ensure that any holes in the floor are filled after modifications to ensure that there is no possibility of intrusion into the interior of the bus by exhaust gas or other contaminants.

Question: *Is South Carolina considering any modification to the specifications so that passenger seating is not lost?*

Answer: Yes, but only on the buses bid starting in fall 2000 and later. South Carolina will require an extra section in the body of the bus (if necessary) to maintain current passenger capacity on most configurations.

Question: *Does the parent need to be notified or provide approval before the preschool age child is fitted with a safety vest, if it is not listed on an Individual Education Plan (IEP)?*

Answer: If a safety vest is not listed on an IEP, and is provided purely as a safety measure, it is not a requirement that the parent be notified. However, it is recommended that parents be notified, as a proactive measure, to head off any unwarranted concern. It is suggested that it be described, according to its purpose, as a safety vest, not a “restraint or harness.”

Question: *Will school bus operators and school bus technicians be required to receive training on proper installation and securement of CSRSs and passengers and related issues?*

Answer: The Department of Education is currently developing a “train the trainer” component, to be taught regionally, for bus operator/monitor trainers to address proper child restraint system installation and securement. A component is also being developed for bus technicians to address installation, securement, maintenance, and inspection procedures for seat belt assemblies, seat belt anchorages, and other child restraint anchorage systems that are a part of the school bus.

Question: *Are there any resources available to answer questions regarding the correct installation of child safety seats?*

Answer: The NHTSA’s Web site at <<http://nhtsa.gov/people/injury/childps/Contacts/index.cfm>> offers a list of child passenger safety contacts for the state of South Carolina. The list is also attached to this document. These technicians have attended extensive training and have been certified in correct usage and installation of child safety seats.

Question: *Is it acceptable to use captured loop-type lap belts or other lap belts that tie to or loop around the seat frame to attach the child safety seat?*

Answer: No, it is not acceptable to use any lap belt that is not compliant with FMVSS 225, “Child Restraint Anchorage Systems,” or FMVSSs 209 and 210.

Question: *What is the maximum allowable number of CSRS occupants per bus?*

Answer: You should not transport more CSRS occupants per bus than can be safely evacuated in an emergency situation. A revision to these guidelines will be forthcoming on this subject.

Question: *What is the federal implementation date for FMVSS 225 requiring the attachment system in two seating positions on small buses (Type A1, under ten thousand pounds)?*

Answer: On September 1, 2002, the UCRA requirement for small buses goes into effect.

Question: *Whom should I call with additional questions?*

Answer: You can call your area driver trainer, or you can call Doug Hamrick, Marshall Casey, or Donald Tudor at the Department of Education at 803-734-8244.

Child Passenger Safety Contacts (from the NHTSA)
In alphabetical order by city.

Coordinator Dwayne S. Smith
Anderson County SAFE KIDS
Coalition
800 N. Fant Street
Anderson, SC 29621
phone: 864-224-0251
fax: 864-375-9267
dsmith3@anmed.com

Coordinator Amy M. Ethridge
Trident Area SAFE KIDS
Coalition
MUSC Children's Hospital
North Tower, Room 546
171 Ashley Ave.
Charleston, SC 29425
phone: 843-792-5327
fax: 843-792-6770
etheridga@musc.edu

District Director Health
Education Janet W. Tapp
Palmetto Health District
2000 Hampton St.
Columbia, SC 29204
phone: 803-929-6530
fax: 803-748-4993
tappjw@columb66.dhec.state.sc.us

Corporal Wayne H. Abney
S.C. Highway Patrol
5400 Broad River Road
Columbia, SC 29210
phone: 803-896-7907
fax: 803-896-9685
abney_wayneh@scdps.state.sc.us

Michael D. George
800 Dutch Square Blvd., Suite 800
Columbia, SC 29210
phone: 180-028-11691
fax: 803-896-5727
mgeorge102@aol.com

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S.C. Department of Public Safety
5400 Broad River Road
Columbia, SC 29210
phone: 803-896-8156
fax: 803-896-8719
pace_danal@scdps.state.sc.us

Assistant Administrator Phil Riley
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5400 Broad River Road, Mod. 16
Columbia, SC 29210
phone: 803-896-8389
fax: 803-896-8393
riley_phillipc@scdps.state.sc.us

Corporal James D. Day
S.C. Highway Patrol,
Multidisciplinary Accident Investigation
Team (MAIT)
5400 Broad River Road
Columbia, SC 29212
phone: 803-896-7909
fax: 803-896-8013
day_jamesd@scdps.state.sc.us

Corporal Joyce A. Myrick
S.C. Department of Public Safety
5400 Broad River Road
Columbia, SC 29212
phone: 843-953-6050
fax: 843-953-6054
stang1269@aol.com

Occupant Protection Trainer Anne Stone
S.C. Department of Public Safety
5400 Broad River Road, Mod. 9
Columbia, SC 29212
phone: 803-896-8146
fax: 803-896-8719
stone_annettes@scdps.state.sc.us

Assistant Director Anne D. Adams
McLeod Child Development Center
Florence, SC 29501
phone: 843-679-7225
fax: 843-676-1424
annedadams@aol.com

SAFE KIDS Coordinator/Marketing and
PR Specialist Kristie S. Gibbs
McLeod Health/Florence SAFE KIDS
Coalition
PO Box 100551
Florence, SC 29501
phone: 843-667-2590
fax: 843-678-5020

Health Services Coordinator Myra B. Hanna
Pee Dee CAA Head Start
PO Drawer 3970, 1401 W. Evans Street
Florence, SC 29501
phone: 843-678-3414
fax: 843-667-4158
hannam@ftc-i.net

Special Services Specialist Donna Creel
Pee Dee CAA Head Start
PO Drawer 3970
Florence, SC 29502
phone: 843-678-3414
fax: 843-667-4158

Evelyn Patterson
Pee Dee CAA Head Start
PO Drawer 3970
Florence, SC 29502
phone: 843-678-3407
fax: 843-667-4158

PIO Officer Gary Y. Culbertson III
Florence County EMS
527 S. Church St
Florence, SC 29506
phone: 843-665-3038
fax: 843-661-6651
cculbertson@florenceco.org

FSET Richard Culbertson
Georgetown County DSS
330 Oozier Street
Georgetown, SC 29440
phone: 843-546-5134
culbertsons@juno.com

President Russell A. Wagner
Wagner LLC
114 Strathmore Drive
Greer, SC 29650-4050
Home: 864-268-4120
Business/mobile: 864-313-9783
fax: 864-244-4962
Russwagner@member.kiwanis.org

Lance Corporal Garry L. Jarrett
S.C. Highway Patrol, MAIT
24 Vardry Street
Greenville, SC 29601
phone: 864-241-1158
fax: 864-232-8577
garryj@pipeline.com

Lance Corporal Daniel G. Marsceau
S.C. Highway Patrol
PO Box 5049
Greenville, SC 29606
phone: 864-241-1186
fax: 864-241-1029
marsceau_danielg@sccdps.state.sc.us

Executive Assistant Kenneth Ruby
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Greenville, SC 29607
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fax: 864-234-6851
satgvl@carol.net

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Easter Seals of Greenville
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Greenville, SC 29609
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PFC (Traffic Officer) Robert H. Googe III
Mt. Pleasant Police Department
100 Ann Edwards Lane
Mt. Pleasant, SC 29464
phone: 843-884-4176
cgooge@earthlink

Barbara L. Johnson
940 Cottingham Drive
Mt. Pleasant, SC 29464

Family/Child Service
Specialist Coretha G. Canty
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phone: 843-526-2670
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ECSII Josephine Gilchrist
Pee Dee CAA Head Start
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ECSI Tolsha L. Williams
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Health Educator Karen E. Hill
DHEC Trident Public Health District
2070 Northbrook Blvd., A-20
North Charleston, SC 29406
phone: 843-764-1732
fax: 843-764-4719

Director Kathryn T. Funderburk
Orangeburg, Bamberg, and Calhoun
Counties SAFE KIDS Coalition
TRMC 3000 St. Matthews Road
Orangeburg, SC 29118
phone: 803-533-2822
fax: 803-533-2304

Patrol Officer Clarence B. Francis
Pageland Police Department
316 West McGregor Street
Pageland, SC 29728
phone: 843-672-6437
fax: 843-672-2535
whitestar@shtc.net

Sergeant Tommy L. Ellenburg
Pickens County Sheriff's Office
216 L.E.C. Road
Pickens, SC 29671
phone: 864-898-5500
fax: 864-898-5531
dott@pickens.lib.sc.us

Health Educator II Rosie L. Hopkins
York County Health Dept./Catawba
Public Health
PO Box 3057
1070 Heckle Blvd.
Rock Hill, SC 29730
phone: 803-909-7300
fax: 803-909-7397
hopkinrl@rock160.dhec.state.sc.us

Health Educator Misty H. Pearson
Saluda Health Department
PO Box 664
Saluda, SC 29138
phone: 864-445-2141
fax: 864-445-7668
pearsomp@Saluda60.dhec.state.sc.us

Police Officer J. P. Roper
Spartanburg Public Safety
145 Broad Street
Spartanburg, SC 29304
phone: 864-596-2090

Traffic Sergeant Robert G. Burris
Summerville Police Dept.
300 W. 2nd N. St.
Summerville, SC 29483
phone: 843-871-2463
fax: 843-851-4108
sybercop@bellsouth.net

Owner Pat Condon Sr.
MDI Enterprises, LLC
PO Box 948
Taylors, SC 29687
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Appendix:

**NHTSA Guidelines – Guideline for the Safe Transportation of Pre-school Age Children
in School Buses**

South Carolina School Bus Seat Spacing Information

Website Resources

Information Available on the American Academy of Pediatrics Website

NHTSA Guidelines

Guideline for the Safe Transportation of Pre-school Age Children in School Buses

**National Highway Traffic Safety Administration
February 1999**

Introduction

School age children transported in school buses are safer than children transported in motor vehicles of any other type. Large school buses provide protection because of their size and weight. Further, they must meet minimum Federal motor vehicle safety standards (FMVSSs) mandating compartmentalized seating, improved emergency exits, stronger roof structures and fuel systems, and better bus body joint strength.

As more pre-school age children are transported to school programs, often in school buses, the public is increasingly asking the National Highway Traffic Safety Administration (NHTSA) about how to safely transport them. To help answer these questions, NHTSA conducted crash testing of pre-school age size dummies in school bus seats. The test results showed that pre-school age children in school buses are safest when transported in child safety restraint systems (CSRSs) that meet FMVSS 213, Child Restraint Systems, and are correctly attached to the seats.

Based on its research, NHTSA recommends pre-school age children transported in school buses always be transported in properly secured CSRSs. In partial response to questions from school (and child care) transportation offices, this Guideline seeks to assist school and other transportation managers in developing and implementing policies and procedures for the transportation of pre-school age children in school buses.

Note: The proper installation of CSRSs necessitates that a school bus seat has safety belts or other means of securing the CSRS to the seat. NHTSA recommends that lap belts or anchorages designed to meet FMVSS 225, Tether Anchorages and Child Restraint Anchorage Systems, be voluntarily installed to secure CSRSs in large school buses.

Recommendations For The Transportation Of Pre-School Age Children In School Buses

When pre-school age children are transported in a school bus, NHTSA recommends these guidelines be followed:

- 1) Each child should be transported in a Child Safety Restraint System (suitable for the child's weight and age) that meets applicable Federal Motor Vehicle Safety Standards (FMVSSs).
- 2) Each child should be properly secured in the Child Safety Restraint System.
- 3) The Child Safety Restraint System should be properly secured to the school bus seat, using anchorages that meet FMVSSs.

Child Safety Restraint System Defined

A Child Safety Restraint System is any device (except a passenger system lap seat belt or lap/shoulder seat belt) designed for use in a motor vehicle to restrain, seat, or position a child who weighs less than 50 pounds.

Child Safety Restraint Systems Guideline

1. Child Safety Restraint System Specifications

The provider of the CSRS should ensure:

- a) Each pre-school age child to be transported has a CSRS appropriate for the child's weight, height, and age.
- b) Each CSRS meets all applicable FMVSSs (look for the manufacturer's certification on the label attached to the system).
- c) Each CSRS has been registered with the CSRS's manufacturer to facilitate any recalls the manufacturer might conduct.
- d) If the CSRS is the subject of a recall, any necessary repairs or modifications have been made to the manufacturer's specifications.
- e) Each CSRS is maintained as recommended by its manufacturer, including disposal of any CSRS that has been involved in a crash.

2. Proper Securement

The transportation provider should ensure:

- a) The CSRS is used and secured correctly in the school bus.
- b) Each child is secured in CSRSs according to manufacturer's instructions.
- c) All CSRS attachment hardware and anchorage systems meet FMVSS 210, Seat Belt Assembly Anchorages or FMVSS 225, Tether Anchorages and Child Restraint Anchorage Systems.

- d) School bus seats designated for CSRSs meet FMVSS 225, or include lap belts that meet FMVSS 209, Seat Belt Assemblies, and anchors that meet FMVSS 210 (designed to secure adult passengers or CSRS).
- e) Personnel responsible for securing CSRSs onto school bus seats and children into CSRSs are properly trained and all personnel involved with CSRSs are provided up-to-date information and training.
- f) When transported in the school bus, pre-school age children are supervised according to their developmental and functioning level.

3. School Bus Seats Designated for Child Safety Restraint Systems

The transportation provider should ensure:

- a) School bus seats designated for CSRSs are located starting at the front of the vehicle to provide drivers with quick access to and a clear view of the CSRS occupants.
- b) CSRS anchorages on school bus seats should meet all applicable FMVSSs.
- c) When ordering new school buses, the maximum spacing specified under FMVSS No. 222, School Bus Passenger Seating and Crash Protection, (within 24 inches from the seating reference point) is recommended for seats designated for CSRSs to provide adequate space for the CSRSs.
- d) The combined width of CSRS and/or other passengers on a single seat does not exceed the width of the seat.
- e) If other students share seats with the CSRSs, the CSRSs are placed in window seating position.

4. Retrofitting School Buses

The transportation provider should ensure:

- a) Existing school bus seats should only be retrofitted with lap belts or child restraint anchorages as instructed by the school bus manufacturer.

When a school bus is retrofitted with a seat to allow for proper securement of a CSRS, instructions obtained from the school bus or seat manufacturer on how to install the seat and restraint systems should be followed.

When a school bus is retrofitted, the bus owner should ensure that seat spacing is sufficient for the CSRS to be used.

5. Evacuation

The transportation provider should ensure:

- a) The establishment of a written plan on evacuating pre-school age children and other passengers in CSRSs in the event of an emergency. This written plan should be provided to drivers, monitors, and emergency response personnel. The plan should explicitly state how children (both in and out of the CSRS) should be evacuated from the school bus.
- b) Evacuation drills are practiced on a scheduled basis, at least as often as that required for the school system's school-age children.
- c) All personnel involved in transporting children are trained in evacuation and emergency procedures, including those in the written school bus evacuation plan.
- d) All school buses carrying children in CSRSs carry safety belt cutters that are accessible only to the driver and any monitors.
- e) CSRSs are not placed in school bus seats adjacent to emergency exits.
- f) Local emergency response teams are provided copies of the written school bus evacuation plan, including evacuation of pre-school age children. Emergency response personnel should be invited to participate in evacuation drills.

6. Other Recommendations

- a) The school transportation provider should establish a policy on whether they or the child's guardian must supply a CSRS to be used on a school bus. School bus purchases should be based on the needs of a projected student population, taking into consideration projected ages, sizes, and other characteristics of the students, including any special needs, and whether pre-school age children or medically fragile students will be transported.
- b) Specified procedures should be established for loading and unloading children in CSRSs.
- c) Procedures should be established for the periodic maintenance, cleaning, and inspection for damage of CSRSs. Procedures should be established to train personnel involved in direct service delivery of infants, toddlers, and pre-school children on the physical day-to-day handling of these young children and means to handle potential exposure to contagious and communicable diseases.

- d) When school bus procedures are established, it should be noted that some children in CSRSs may have special needs, including medical fragility, that must be addressed on a child-by-child basis.

South Carolina School Bus Seat Spacing Information

The concept of Compartmentalization of school bus passengers plays a key role in providing protection on school buses. One of the main factors in the success of this design is the proper spacing of passenger seats.

Through Federal Motor Vehicle Safety Standards (FMVSS) testing of school bus passenger seats, the bus body manufacturers have determined the proper spacing of passenger seats to provide the best level of passenger crash protection which meets the requirements of FMVSS 222. Therefore, whenever a new bus is received or an existing bus has seats removed or reinstalled, the Department of Education maintenance staff will check for proper seat spacing before returning the bus to service to transport students.

Attached is a chart listing the seat spacing (in inches) of each manufacturer's bus body by type. South Carolina School Bus Specifications specify the **minimum** spacing that may be allowed, and FMVSS 222 specifies the **maximum** spacing that may be allowed, providing a range that must be adhered to. The two measurement methods are at two different locations to assist in determining the proper seat spacing; they are knee-room or center-to-center spacing. The dimensions listed in the attached chart are South Carolina minimum and Federal maximum measurement specifications. The seat can be positioned anywhere within these minimum and maximum specifications. A line drawing is provided to describe in detail where each reference point is to be measured: either the knee-room or center-to-center method can be used.

If you need any further assistance or information, please call the SCDE Office of Transportation at (803) 734-8244.

TYPE A, B, C, and D (78 passenger or less) SCHOOL BUSES

Bus Body Company	Knee Room Method	
	South Carolina Min. Spacing	Federal Max. Knee Spacing
Amtran	24 inches	29.5 inches
Blue Bird	24 inches	28 ¾ inches
Carpenter	24 inches	29 inches
Thomas	24 inches	28 ½ inches
Wayne	24 inches	N/A

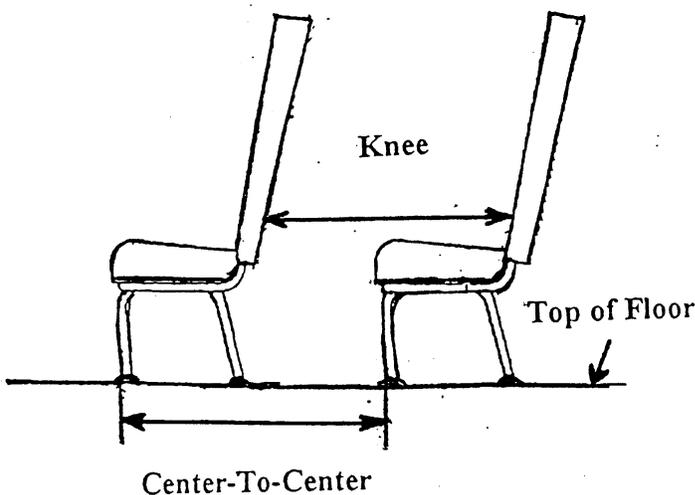
Center-To-Center Seat Leg Method		
South Carolina Center to Center Min.	Carolina Center to Center	Federal Center to Center Max.
27 ½ inches		31.65 inches
27 ½ inches		31 ¼ inches
27 ½ inches		32 inches
27 ½ inches		29 ¾ inches
N/A		N/A

TYPE A, B, C and D (Rows with Child Safety Restraint Systems) SCHOOL BUSES

Bus Body Company	Knee Room Method	
	South Carolina Min. Spacing	Federal Max. Knee Spacing
Amtran	28 inches	29.5 inches
Blue Bird	28 inches	28 ¾ inches
Carpenter	28 inches	29 inches
Thomas	28 inches	28 ½ inches

Center-To-Center Seat Leg Method		
South Carolina Center to Center Min.	Carolina Center to Center	Federal Center to Center Max.
31 ½ inches		31.65 inches
31 ¼ inches		31 ¼ inches
31 ½ inches		32 inches
31 ½ inches		29 ¾ inches

Diagram Explanation



Website Resources

American Academy of Pediatricians	www.aap.org
Safekids	www.safekids.org
National Association for Pupil Transportation	www.napt.org
School Bus Fleet	www.schoolbusfleet.com
School Transportation News	www.stnonline.com or www.schooltransportation.com
National Highway Transportation Safety Administration	www.nhtsa.dot.gov
National Association of State Directors of Pupil Transportation Services	www.nasdpts.org/
National School Transportation Association	www.nsta.org

Information Available on the American Academy of Pediatrics Website

- Car Seat Safety Information from the American Academy of Pediatrics
- 2000 Family Shopping Guide to Car Seats
- One Minute Car Seat Safety Check-Up
- Selecting and Using the Most Appropriate Car Safety Seats for Growing Children: Guidelines for Counseling Parents (RE9618)
- Car Seat Shopping Guide for Children with Special Needs
- AAP Initiative to Educate Pediatricians Regarding Child Safety Seat Use

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