

2009

***Florida Guidelines
For Seating of***

***Pre-school Age
Children in School
Buses***



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Introduction

Each year an increasing number of pre-school age children are transported by school bus to public school programs, including charter schools. As always, safety is the number one concern of school transportation providers. To assure the safety of pre-school age students on school buses, the National Highway Traffic Safety Administration (NHTSA) recently conducted crash testing on pre-school size dummies in school bus seats. The test results indicated that pre-school age children are safest when transported in a child safety restraint systems (CSRS's) that meet Federal Motor Vehicle Safety Standard (FMVSS) 213, "Child Restraint Systems," and that are 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 "Guidelines").

The purpose of these Florida Guidelines for Seating of Pre-school Age Children in School Buses is to convey the NHTSA Guidelines, provide clarification and interpretation of the NHTSA Guidelines, and provide additional background and Department of Education recommendations regarding technical and operational issues associated with transporting pre-school age students.

Please note that in several instances within these Guidelines the word "shall" is used. Use of the word shall is to be interpreted, for the purposes of these Guidelines, as follows:

1) Federal Motor Vehicle Safety Standards (FMVSS) apply, under Federal regulations to the manufacture and sale of new motor vehicles. Under Section 1006.22, Florida Statutes, and Rules 6A-3.0171 and 6A-3.0291, Florida Administrative Code, districts are required to maintain compliance of buses with FMVSS. Therefore, this document uses the word "shall" when referring to FMVSS.

2) To the maximum extent possible, the recommendations herein should be followed in total. 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 Ronnie McCallister at Ronnie.McCallister@fldoe.org or call him at (850) 245-9795, SunCom 205-9795.



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Definition of Terms

Child Safety Restraint System (CSRS) Any device other than a passenger system lap seat or lap/shoulder seat belt designed for use in a motor vehicle to restrain, seat, or position a child whose size and build prevents them from being properly secured in a vehicle's manufacturer installed passenger restraint system.

Pre-school Age Child For the purpose of this document, a pre-school age child is a child that is less than kindergarten age and weighs 50 pounds or less.

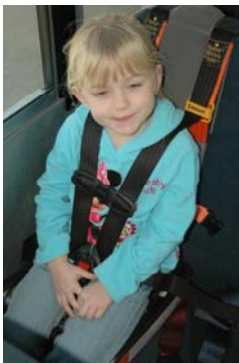
“Seat-Belt-Ready Seats,” “Lap-Belt-Ready Seats,” & “CSRS-Ready Seats” These terms are used interchangeably throughout the document. They refer to the FMVSS 210 seats that come from the factory ready to accept two-point lap type seat belts and, therefore, child safety restraint systems. Current specifications for all Type A school buses sold through the State Bid shall be equipped with Type II, three (3) point lap/shoulder belts for all passenger seating positions.

Type A School Bus The Type A school bus is a conversion vehicle or school bus body constructed upon a van-type or cutaway front-section vehicle with a left side driver's door, designed for carrying more than 10 persons. This definition shall include two classifications: Type A-I, with a Gross Vehicle Weight Rating (GVWR) over 10,000 pounds; and Type A-II, with a (GVWR) of 10,000 pounds and under.

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 20-50 pounds.

Federal Motor Vehicle Safety Standards (FMVSS) 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 CFR, Part 571). Applicability of FMVSS to different vehicle types (including School Buses) is defined within each FMVSS. See next section, Applicable Standards and Rules, for summary of FMVSS referred to in these guidelines.

**Please note that the Department of Education neither condones nor recommends against the purchase of 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 50 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 rear-facing use 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 (17-22 pounds). One seat can be converted into a car bed for babies who must lie flat. It is important to maintain a 45° angle when installing the seat to ensure that the infant can breathe properly (sometimes it is necessary to insert a rolled up towel or cut up Styrofoam pool noodles under the seat to achieve this angle).



“Convertible” Seats - larger seats, usually designed to fit children from birth to about 40 pounds. Some new models have weight limits as high as 35 pounds for rear-facing use. These products are especially good for babies under age one who are growing more rapidly than average. Convertible seating may be turned around to face the front when the baby is one year old **and** at least 20 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 - non-convertible child safety seats used only in the forward-facing position. This category has different lower weight limits. Most start at 20-25 pounds and go to about 40 pounds (check the manufacturer’s label) and fit children from one year to about four years of age. Note: Some of these seats have removable harness systems to accommodate later use as a belt-positioning booster seat. A three-point lap/shoulder harness is required to operate the seat in this capacity. Since only a limited number of Florida school buses have lap/shoulder belts, this seat will generally not accommodate a child larger than 40 pounds. 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 one year of age **and** at least 20 pounds (see Appendices G, H and I for American Academy of Pediatrics information regarding FMVSS 213-compliant child safety seats). **Always check the manufacturer's label to ensure proper usage and passenger securement.**

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 Tether Anchorages and 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' failures, 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" systems (Universal Child Restraint Anchorages). As of September 1, 2002, UCRA systems were required in two seating positions on all Type A school buses and optional for all Type A1, 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.

Florida Statutes (excerpts from Chapter 1006, Florida Statutes)

Section 1006.22, Florida Statutes *Safety and health of pupils* - Maximum regard for safety and adequate protection of health are primary requirements that must be observed by district school boards in routing buses, appointing drivers, and providing and operating equipment, in accordance with all requirements of law and rules of the State Board of Education in providing transportation pursuant to Section 1006.21, F.S.

Section 1006.22(10), Florida Statutes *Examination, maintenance, and repair of transportation equipment* - Each district school board shall designate and adopt a specific plan for adequate examination, maintenance, and repair of transportation equipment. Examination of the mechanical and safety condition of each school bus must be made as required pursuant to rule of the State Board of Education. The State Board of Education shall base the rule on student safety considerations.

Section 1006.25(2), Florida Statutes *School buses shall be defined and meet specifications as follows:* Specifications - Each school bus as defined in 49 C.F.R. part 571, and subsection (1), that is rented, leased, purchased, or contracted for, must meet the applicable Federal Motor Vehicle Safety Standards and other specifications as prescribed by rules of the State Board of Education.



Standards and Rules
Florida State Board of Education Rule
(excerpts from Chapter 6A-3, Florida Administrative Code)

Rule 6A-3.0121(1), Florida Administrative Code *Responsibility of School District and Parents for Students with Special Transportation Needs who are transported at public expense.* . . . The district shall provide belt cutters meeting Florida School Bus Specifications on any school bus equipped with passenger securement or restraint straps. Florida School Bus Specifications mandate that the belt cutter be mounted in a location only accessible to the driver from a seated position, and to be easily detachable.

Rule 6A-3.0171(2)(e)1.c, Florida Administrative Code *Responsibilities of the director or supervisor of transportation:* To instruct school bus drivers in procedures to be followed in conducting school bus emergency evacuation drills and to confer with each school principal regarding scheduling, conducting and documenting school bus evacuation drills.

Rule 6A-3.0171(2)(e)2.d. and e., Florida Administrative Code *Responsibilities of the school principal or other designated school staff:* d. To direct school bus emergency evacuation drills on each bus serving the school during the first six weeks of each semester, and e. To maintain documentation for all students and to provide instruction for all transported students in safe practices on and off the bus, during the first six weeks of the first semester of the school year.

Rule 6A-3.0171(2)(e)3.g., Florida Administrative Code *Responsibilities of the school bus driver.* To attend and participate in conferences and training classes for school bus drivers...

Rule 6A-3.0171(2)(e)3.n., Florida Administrative Code *Responsibilities of the school bus driver.* To participate in emergency evacuation drills at least once each school semester under the direction of the school principal or the principal's designee.

Rule 6A-3.0171(4)(a), Florida Administrative Code *Transported students:* To consider, and as nearly as possible to provide for, the transit, safety, and comfort of each student who will be transported to and from school.

Rule 6A-3.0171(8)(b), Florida Administrative Code *Inspection and maintenance of school buses:* The inspection shall be conducted in accordance with procedures and include all items listed in the Florida School Bus Safety Inspection Manual...

Rule 6A-3.0291(1), Florida Administrative Code *Specification for New School Buses:* School buses purchased each year shall conform to current National Standards for School Buses of the National Conference on School Transportation, current Federal Motor Vehicle Safety Standards, and to specifications prescribed by the State Board for body, chassis, and special equipment as provided in Section 1006.25(2), Florida Statutes. Each school bus as defined by Section 1006.25(2), Florida Statutes, shall meet the requirements of the Florida School Bus Specifications applicable for the year the bus was manufactured or the previous year if specifications were not revised and approved for a given year.



Technical Procedures for Equipping Buses to Transport Pre-School Age Students

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

Procedures for School bus seating and crash protection equipment for transporting pre-school age children include all of the following:

1. **Child Safety Restraint Systems (CSRSs)** - CSRSs suitable for the child's weight and age and meeting FMVSS 213 should be used. All CSRSs will have a manufacturer certification label attached to the system that confirms compliance with all applicable FMVSS and that provides information as to correct positioning according to the weight and age of the child.
2. **Securement of CSRS to Seat** - All CSRS attachment hardware and anchorage systems shall meet FMVSS 210, Seat Belt Assembly Anchorages, or FMVSS 225, Tether Anchorages and 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 FMVSS.
3. **Maximum Seat Spacing** - School bus bench seats, on which CSRSs are secured, shall be installed at the maximum distance apart (front to rear), allowed by FMVSS 222, per the NHTSA Guideline. This is to provide the maximum available space for the CSRSs, to accommodate operational access needs, and provide maximum safety for the occupant.

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 Florida dealers and manufacturer contacts.

Florida Dealers

Florida Transportation Sys.	Chris Rustman (Blue Bird)	800-282-8617
Matthews Buses of Orlando	Jim Bay (Thomas)	800-330-1175
Rivers Bus Sales	Jim Searcy (IC Corp)	904-783-0313

Manufacturer Contacts

Blue Bird Corporation	Tom Woodard	478-822-2174
Thomas Built Buses	Ricky Stanley	336-841-5715
IC Corporation	Ron Briggler	501-327-7761



4. **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.

5. **Retrofitting Existing Buses** - Districts should retrofit their current buses to meet the new seating guidelines, if the buses are to be used to transport pre-school age children as defined herein, in accordance with the recommendations contained in these guidelines, and should only be retrofitted with seats from the original manufacturer. School districts and Head Start programs must ensure that no existing FMVSS (e.g., 222 regarding school bus seat anchorage, padding, spacing, etc.) are rendered inoperative when performing any modifications, changes, or additions to buses. School district personnel must adhere to all applicable manufacturer and federal guidelines for the components being installed. Existing school bus seats should only be equipped with lap belts for child restraint securement if they were originally designed as FMVSS 210 compliant "lap-belt-ready" seats. Most wheelchair lift-equipped buses meeting Florida Specifications and manufactured since 1987 are already equipped with "210" seats. When a new "lap-belt-ready" school bus seat, with a lap belt, is retrofitted into a bus, to allow for proper securement of a CSRS, instructions obtained from the school bus or seat manufacturer on seat and restraint system installation should be followed. 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 Appendix F for dimensions applicable to each manufacturer).

6. **Newer Buses** - Beginning with the spring 2000 bid, the first three rows in all Type C and D newly purchased Florida school buses are required to meet NHTSA Guideline requirements for maximum seat spacing and are equipped with seats with appropriate anchorages (FMVSS 210 and/or 225).

7. Each school bus that transports CSRSs shall be equipped with a seat belt/strap cutter. Rule 6A-3.0121(1), Florida Administrative Code, states in part:

*Responsibility of School District and Parents for Students with Special Transportation Needs who are transported at public expense:...*The district shall provide belt cutters meeting Florida School Bus Specifications on any school bus equipped with passenger securement or restraint straps.

8. Florida School Bus Specifications mandate that the belt cutter be attached and accessible to only the driver from a seated position and easily detached.



Operational Procedures for Transporting Pre-School Age Students

The following operational procedures are Florida Department of Education recommendations, which augment or interpret the attached NHTSA Guideline (Appendix A). It is suggested that school districts follow these procedures to the maximum extent practical in transporting pre-school age children (as defined herein) on school buses. It is also recommended that districts follow the attached NHTSA Guideline, for items not otherwise covered herein.

1. **Specifications for Child Safety Restraint System (for provider of CSRS)**

Subject to these guidelines, the CSRS may be provided by the school district, the parents, or any other party. The provider of the Child Safety Restraint System should ensure that each pre-school age child that is transported has a CSRS appropriate for his/her weight, height, and age that meets all applicable FMVSS (look for the manufacturer's certification on the label attached to the system) and has all functional parts and components for proper usage as provided by the manufacturer. The provider also should register the CSRS with the CSRS's manufacturer to facilitate any recalls. If the CSRS is the subject of a recall, the provider should ensure that any necessary repairs or modifications have been made according to the manufacturer's specifications. The CSRS should be maintained as recommended by its manufacturer, including disposal of any CSRS that has been involved in a crash.

2. **Guidelines for Proper Securement (for transportation provider)** The transportation provider should ensure that the CSRS is used and secured correctly in the school bus seat. The child is to be secured in the CSRS according to manufacturer's instructions. Personnel responsible for securing CSRSs onto school bus seats and children into CSRSs need to be properly trained and all personnel involved with CSRSs provided up-to-date information and training (this is in accordance with Rule 6A-3.0171(2) (e)3.g., FAC). Pre-school age children are to be supervised according to their developmental and functioning level while being transported on the school bus.

3. **Guidelines for Loading/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.

4. **Training Procedures** should be established to provide documented training to those directly involved in the transportation of infants, toddlers, and other pre-school age children on school buses. Training components should include, but not be limited to: evacuation procedures (see Evacuation), CSRS securement procedures, child securement procedures, proper lifting and handling, and addressing special needs. Trainees should 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, which 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. **NHTSA offers a 32-hour certification course in Child Passenger Safety; you may contact Safe Kids Worldwide at (202) 662-0600 or at www.safekids.org to find out more about this**



course. Physical and occupational therapists may be involved in the training in individual cases when there are students with special needs. Each district should establish procedures for identifying who is responsible for carrying the seat and child on and off the bus, if applicable.

5. **Evacuation** The school district should establish a written plan for evacuating pre-school children and other passengers in CSRSs in the event of an emergency. This written plan should be provided to drivers, monitors, and local emergency response personnel. The plan should explicitly state how children (both in and out of the CSRSs) should be evacuated from the school bus. As detailed below, evacuation practices will take place on a regular schedule. Evacuation drills should include parent passengers and their children that are transported.

Excerpts from Chapter 6A-3.0171, Florida Administrative Code, relating to school bus evacuation:

Responsibilities related to school bus evacuation - It is the responsibility of the director or supervisor of transportation to instruct school bus drivers in procedures to be followed in conducting school bus emergency evacuation drills and to confer with each school principal regarding scheduling, conducting, and documenting school bus evacuation drills (6A-3.0171(2)(d)1.c.).

It is the responsibility of the school principal or other designated school staff to direct school bus emergency evacuation drills on each bus serving the school during the first six weeks of each semester, to maintain evacuation drill documentation for all students, and to provide instruction for all transported students in safe practices on and off the bus during the first six weeks of the first semester of the school year (6A-3.0171(2)(d)2.d.-e.). It is the responsibility of the school bus driver to participate in emergency evacuation drills at least once each school semester under the direction of the school principal or the principal's designee (6A-3.0171(2)(e)3.g.).



Answers to Frequently Asked Questions (FAQs)

Question: *The federal definition of child safety restraint systems provides for children up to 50 pounds. Most toddler car seats only accommodate children that weigh between 20-40 pounds. What form of restraint is recommended for pre-school age children between 40-50 pounds?*

Answer: In any school bus equipped with lap belts , it is required that all passengers use the belts, including children between 40-50 pounds. When lap belts are not available, NHTSA requires compartmentalization to provide occupant protection for passengers, including pre-school age children weighing between 40-50 pounds. Another restraint option for pre-school age students between 40-50 pounds is an approved safety vest or an Integrated Child Restraint School Bus Seat. There are currently child safety seats, also known as Add-On Restraints, that can accommodate a child up to 105 pounds. Several types of these restraint systems are on the market.

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

Answer: No, school districts are not required to retrofit existing buses. It is recommended, however, to retrofit these buses if they are to be used to transport pre-school age children, as defined herein.

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

Answer: If district personnel decide to retrofit existing buses, they must contact the body manufacturer and solicit retrofit instructions from them, including instructions on proper hardware and mounting of any seats that may be relocated. Also, refer to the specific guidelines contained herein (including the Appendices) for seat spacing, placement, CSRS and passenger securement, and other retrofitting issues.

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

Answer: You should reference the current Florida School Bus Specifications Manual and Florida School Bus Safety Inspection Manual to assure compliance according to model year and manufacturer, as well as applicable Federal Motor Vehicle Safety Standards. Also, refer to the attached manufacturer information on maximum seat spacing (Appendix F).

Question: *Do existing FMVSS 210 seats meet the Guideline for the Safe Transportation of Pre-school Age Children in School Buses?*

Answer: No, unless they are re-spaced to provide the maximum seat spacing or already provide the maximum seat spacing. All Florida school buses built after 2001 meet FMVSS 210 Standards.



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

Answer: No, the NHTSA Guideline will pertain to school buses purchased from the spring 2000 bid and later (buses to be delivered starting about March 2001).

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

Answer: Yes, the seat spacing in accordance with the new guidelines for pre-school age students falls within FMVSS 222 maximum seat spacing specifications required for all passengers.

Question: *If I retrofit a bus with seat-belt-ready seats, do I have to install a specified minimum number of seat-belt-ready seats (for example, if I only need to accommodate one pre-school age 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 would be according to local needs and the number of pre-school age children to be transported on the bus.

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

Answer: Not for most sizes of new buses (less than 84 capacity). 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: 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 removing 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 does not have another seat in front of it, so as to provide a padded surface within the allowable seat spacing. *Representative school bus seating diagrams for all configurations are available from manufacturers.*

Configuration #1 A row of regular seats two or three rows from the front could be removed. Then, CSRS-ready seats in the front of the bus could be installed far enough back that the rearmost CSRS-ready seat would serve as the required barrier in front of the forwardmost 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 protection



and spacing dimensions in front of the forwardmost 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.*

Configuration #2 A regular bench seat could be removed just behind the retrofitted CSRS-ready seats and a padded barrier installed in front of the forwardmost remaining regular bench seat. This barrier would have to be located to provide the required spacing dimension in front of the forwardmost 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.*

Configuration #3 After installing 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 Florida's minimum knee-room requirement (25" on all but 89 capacity, Type D buses) throughout the bus. *This is probably the least attractive option, since it would require significantly more labor (moving of seats) than options 1 and 2 above.*

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 district should 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 district should 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 Florida considering any modification to the specifications so that passenger seating is not lost?*

Answer: Yes, but only on the buses purchased from the spring 2000 bid and later. Florida 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 pre-school 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: *Are there any resources available to answer questions regarding correct installation of child safety seats?*

Answer: NHTSA's web site (<http://www.nhtsa.dot.gov>) offers a list of child passenger safety contacts for the state of Florida. The current list (2008) is also included in Appendix E. These technicians have attended extensive training and have been certified in correct usage and installation of child safety seats. Department of Education staff are also available to assist. They can be contacted by calling (850) 245-9795.

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 or system that is not compliant with FMVSS 225 Tether Anchorages and Child Restraint Anchorage Systems or FMVSS 209 and 210. Loop-type lap belts are designed to attach to regular, non-FMVSS 210 bench seats and, therefore, would not comply.

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.

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

Answer: You can call Ronnie McCallister, Jamie Warrington or Charlie Hood at (850) 245-9795, SunCom 205-9795.



NHTSA Guideline

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 (FMVSS) 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 transported in a Child Safety Restraint System (suitable for the child's weight and age) that meets applicable Federal Motor Vehicle Safety Standards (FMVSS).
- 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 FMVSS.

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 FMVSS (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 meet all applicable FMVSS.
- c) When ordering new school buses, the maximum spacing (within 24 inches from the seating reference point) specified under FMVSS 222, School Bus Passenger Seating and Crash Protection, is required for seats designated for CSRSs to provide adequate space for the CSRSs. (See Appendix F for Seat Spacing Chart)
- d) The combined width of the 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 the 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.
- b) 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 are followed.
- c) 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.

Evacuation drills are practiced on a scheduled basis, at least as often as that required for the school system's school-age children.

- b) All personnel involved in transporting children are trained in evacuation and emergency procedures, including those in the written school bus evacuation plan.
- c) All school buses carrying children in CSRSs carry safety belt cutters that are accessible only to the driver and any monitors.
- d) CSRSs are not placed in school bus seats adjacent to emergency exits.
- e) 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 the CSRS to be used on the school bus. School bus purchases should be based on the needs of the 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.

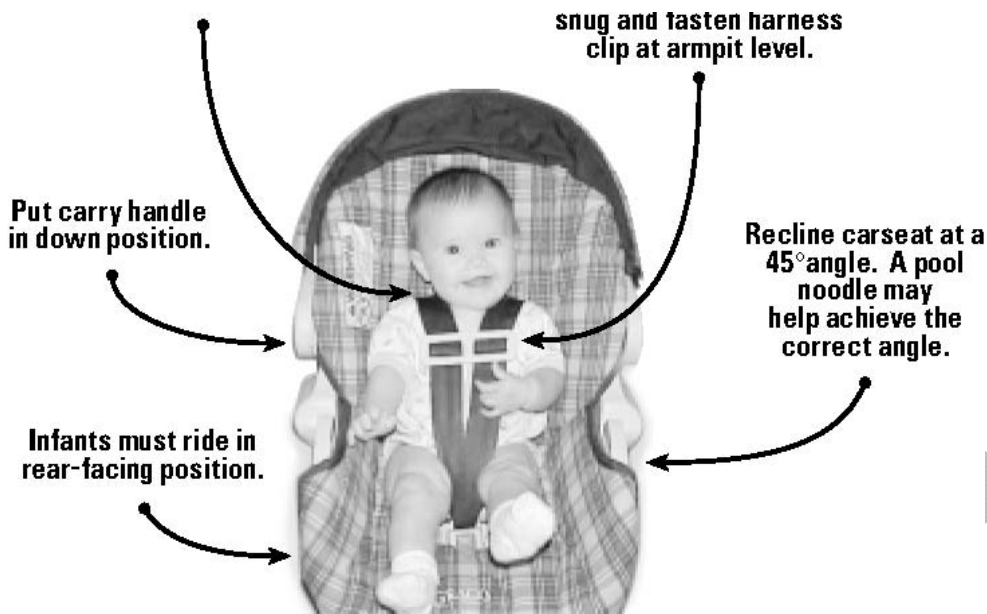
- b) Specified procedures should be established for loading and unloading children in CSRSs.

- 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. (See *Carseat Shopping Guide for Children with Special Needs* at <http://www.aap.org/family/99cars.htm> and *Transporting Children with Special Health Care Needs*, *Pediatrics* Vol. 104, October 1999)



Route harness straps through lower slots at or below shoulder level. Keep harness straps



Infants Ride in Rear-facing Car Seats Up to One Year of Age and Up to 20 Pounds*

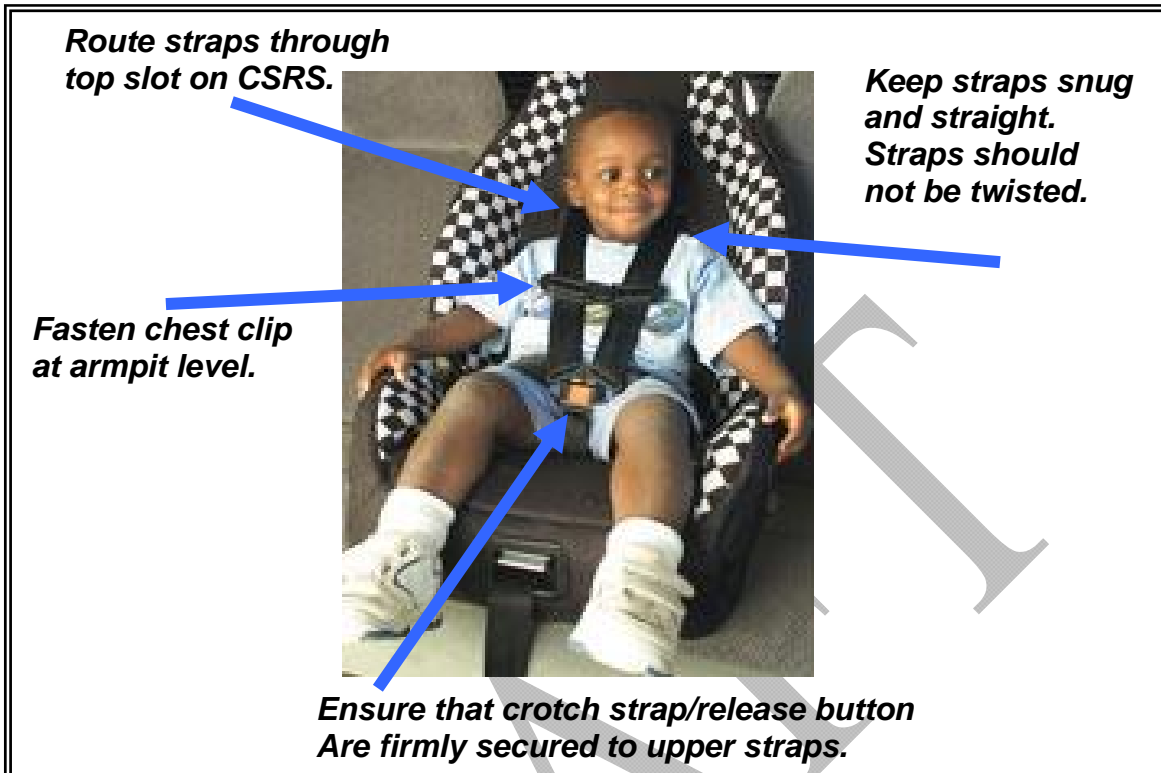
*Follow Manufacturers' recommendations for specific model being used (Infant or Convertible)

Securing the rear-facing seat to the bus seat:

1. Car seat should be placed within first three rows of seats. If the seat is shared, place car seat in window seating position.
2. Place seat in rear-facing position, at a 45° angle. A rolled up towel or pool noodle may help to achieve angle.
3. Thread lap belt through slots indicated for rear-facing position.
4. Fasten into receptacle and pull tight while exerting weight onto seat.
5. Seat should have no more than one inch of play when held at belt path.

Placing infant in seat:

1. Assure that seat is the proper size for child.
2. Place infant in seat bottom first.
3. Gently pull harness over the baby's head, taking care not to irritate infant's skin.
4. Harness clip should be properly threaded and placed at armpit level.
5. Harness straps should be straight and snug, threaded at or below the infant's shoulder line.
6. Secure buckle, making sure you hear the "snap."



Pre-schoolers Over One Year and Over 20 Pounds Ride in Front-facing Car Seats*

*Follow Manufacturers' recommendations for specific model being used (Convertible or Front-facing only)

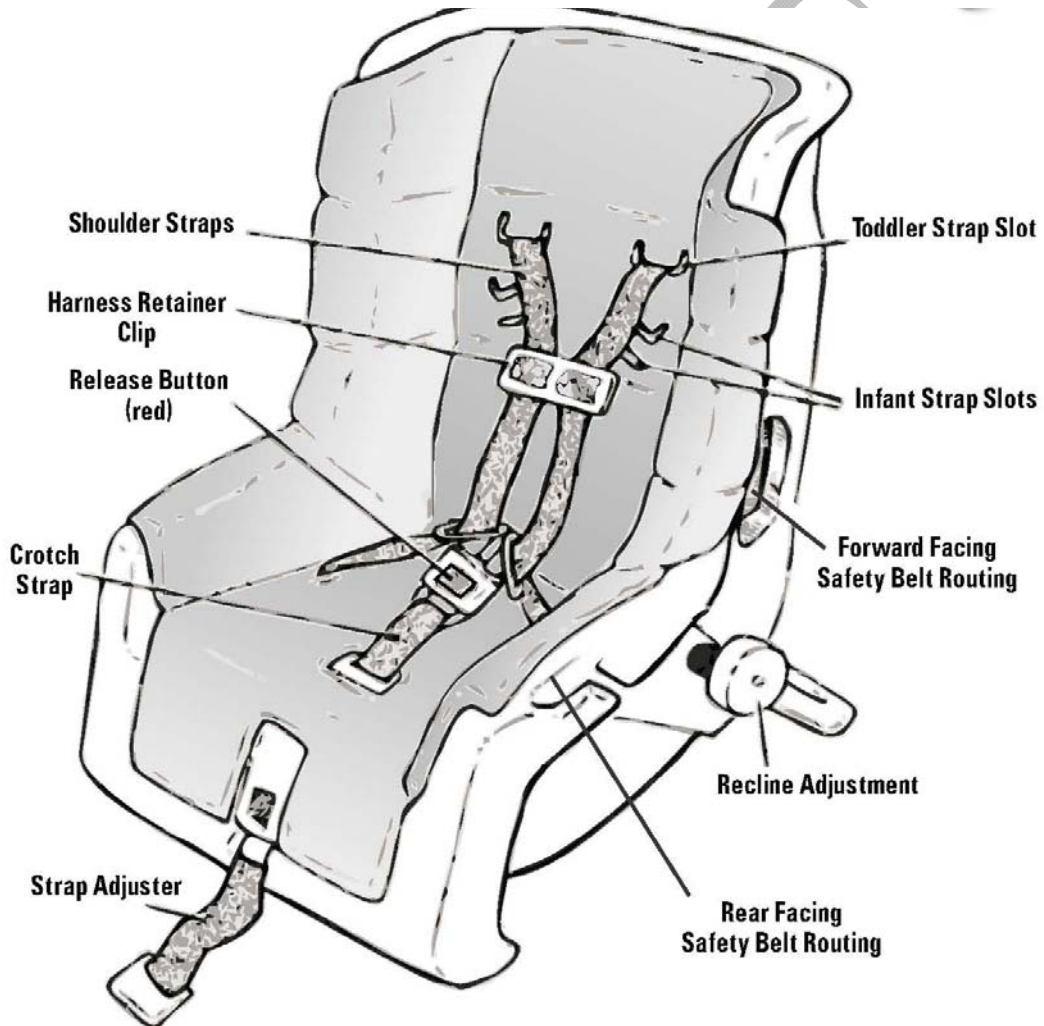
Securing the front-facing CSRS to the bus seat with maximum seat spacing:

1. Car seat should be placed within first three rows of seats. If the seat is shared, place car seat in window seating position.
2. Place seat in front-facing position, with recline adjustment extended.
3. Thread lap belt through slots indicated for front-facing position.
4. Fasten into receptacle and pull tight while exerting weight onto seat.
5. Seat should have no more than one inch of play when held at belt path.

Placing child in front-facing convertible or front-facing-only car seats:

1. Assure that seat is the proper size for the child.
2. The seat should be in the upright position with the belt threaded through the proper path. Make sure the child sits upright in the seat for proper positioning.
3. Gently pull the harness over the child's head.
4. The harness clip should be properly threaded and placed at the armpit level.
5. The harness straps should be straight and snug, threaded *at or above* child's shoulder line.
6. Secure the buckle, making sure you hear the "snap."

Anatomy of a Car Seat



Checklist for Child Safety Restraint Systems (CSRSs) on School Buses

<http://www.nhtsa.dot.gov/people/injury/buses/busseatbelt/page01.htm>

- _____ **Am I using the correct CSRS for the child?**
Child should be rear-facing up to at least 20 lbs and at least 1 year of age; forward-facing after 20 lbs. and at least 1 year of age. (Use only to weight limits designated by manufacturer.)
- _____ **Have I routed the lap belt through the CSRS as instructed by the manufacturer?**
- _____ **Are the child safety seat harness straps in the right slot?**
(Check user's manual.) Rear-facing – lower slots at or below the shoulders; forward-facing – generally top slots and always at or above the shoulders.
- _____ **Is the harness buckled snugly around the child?**
The straps must lie flat and the harness retaining clip must be at armpit level. The harness should be adjusted so you can slip only one finger between the straps and the child's chest.
- _____ **Are all infants semi-reclined?**
It is important for an infant to ride rear-facing and semi-reclined (halfway back or 45 degrees from horizontal) to support the head, neck, and back. You can put a tightly rolled towel or a firm foam "noodle" (pool float) under the front edge of the child safety seat to tilt it back a little so the infant's head lies back comfortably.
- _____ **Are convertible seats that are being used forward-facing in the upright position?**
- _____ **Do all child safety seat harness straps have retainer clips?**
- _____ **Have I practiced with the CSRS before seating the students?**
- _____ **Have I placed all my weight and kneeled into the child safety seat to ensure a tight fit?**
The seat must not move more than 1 inch when pushed forward or side to side at the belt path.
- _____ **Do I have and have I reviewed manufacturer's instructions for all the CSRSs in the bus?**
- _____ **Have I checked the NHTSA Hotline in the last 3 months for possible recalls? (1-888-DASH-2-DOT)**



Florida School Bus Seat Spacing Information

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 your district checks in a new bus and when seats are removed or reinstalled (usually in an ESE bus or for Pre-k retrofitting) it is required that you 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. Florida 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 districts must adhere to. The two measurement methods that can be used to determine the proper seat spacing are knee-room or center-to-center spacing. The dimensions listed in the attached chart are Florida 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.

This information is a reprint of Technical Assistance Paper # T-95-24, distributed on June 28, 1995, with some seat spacing measurements revised to current measurement standards. Revised information was solicited from manufacturers in December 1999.

If you need any further assistance or information, please call Bud Fletcher or Ronnie H. McCallister at (850) 245-9795, SunCom 205-9795.



TYPES "A", "B", "C" AND "D" BUSES				
<i>Bus Body Company</i>	Knee Room Method		Center-to-Center Seat Leg Method	
	Florida Min. Knee Spacing	Federal Max. Knee Spacing	Florida Min. Center-to-Center	Federal Max. Center-to-Center
AMTRAN	25"	29.5"	27.5"	31.8"
BLUE BIRD	25"	28.75"	27.5"	31"
THOMAS	25"	28.5"	26.25"	29.70"
WAYNE	25"	N/A	N/A	N/A



Appendix G

American Academy of Pediatrics:

Babies Ride Backwards to Save Their Necks!

(updated May 1999)

Why should babies ride backwards? And why should they ride facing the back of the car for the entire first year of life? The American Academy of Pediatrics Guidelines, published in PEDIATRICS in May 1996, says there is very good reason for infants under age one to ride facing the rear: to protect their necks from spinal cord injury.

A reclined, rearward-facing restraint cushions the baby's back, head, and neck in a frontal impact. Recent research has led pediatricians to push for a one-year minimum for babies riding forward-facing. This is because a baby's neck muscles take time to develop. Under age one these muscles often are not strong enough to protect the spinal cord adequately. Very serious injuries have been documented to babies riding facing forward.

A common sight, however, is a young baby riding facing forward! Parents usually have no idea why the front-facing position is less safe for a baby. They need encouragement to keep their baby turned backwards. This is especially true when they are also being told that their baby should ride in the rear seat, even when the driver is the only adult in the vehicle. With passenger air bags, the back seat, rear-facing position is critically important.

The general rule in the past has been for infants to ride rear-facing until they could sit up or reach 20 pounds, which often occurs at between six and nine months of age. Many pamphlets and child restraint instruction booklets state this rule.

In fall 1996, a change in the Federal Child Restraint Standard allowed convertible restraints to be designed and tested facing the rear to a higher weight limit than 20 pounds. This has opened the way for manufacturers to accommodate heavier babies. Most convertible seats now have a 22-pound limit. Some seats (see list on the following page) now go up as high as 30 pounds. Parents with babies who grow fast and reach 20 pounds at five or six months now can find a variety of child restraints on the market that can accommodate their large babies. These innovations mean that the old, simple, 20-pound "turn-around time" that parents, educators, and law enforcement personnel have followed no longer can be applied rigidly.

Here are the basics for today:

- Keep your baby in a rear-facing restraint up to age one if at all possible.
- When a baby outgrows an infant-only restraint, he should be moved to a larger convertible seat that allows him to ride rear-facing until he is a year old.
- Follow the weight guidelines on the child restraint you have. Realize, however, that if your baby is heavier than average, you may want to switch to a different restraint that can accommodate him rear-facing.



Convertible car seats with rear-facing weight limits higher than 22 pounds as of 4/99

All products listed are for use rear-facing and forward-facing. All rear-facing upper weight limits are 30 pounds unless noted. Note date at which ongoing models were modified to raise the rear-facing weight limit. Customer service numbers are given. A good source of single or bulk purchase of many of these products is the Center for Injury Prevention: (800) 344-7580 or www.cipsafe.org.

Century: (800) 837-4044 Bravo, all seats, Smart Move, modified as of 3/31/97 Cosco: (800) 544-1108 Alpha Omega, all seats, Touriva, modified as of 1/1/99 Evenflo: (800) 233-5921 Horizon, all seats, Medallion, since 1/4/99 (re-labeled but not modified) Safeline: (800) 829-1625 Sit'n'Stroll, up to 25 lbs. Highlights from the "2000 Family Shopping Guide to Car Seats"

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**American Academy of Pediatrics:
Recommendations on Selecting Appropriate Car Safety Seats**

(updated May 1999)

In May 1996, the American Academy of Pediatrics published advice for choosing and using safety seats. Some of their major recommendations, with explanations from Safe Ride News, are:

- . • Premature and small infants should not be placed in safety seats with shields. The shield (padded panel or bar) could contact the face or neck during impact. A seat with a harness, but no shield, would be a far better choice.
- . • A baby should ride facing the rear up to age one to prevent possible spinal cord injury in a crash. The rear-facing position protects the neck by supporting the baby's large and heavy head. Many safety seats state a "turn around" weight of 20 pounds; however, many babies reach that weight before age one. Twenty pounds is not a magic number. The age of your child is a better indicator than his weight about how strong his neck muscles have become. A baby under age one has a very heavy head and weak neck. Protecting the baby's neck in a crash by carrying the infant in a rear facing position is very important at this age.
- . • A convertible or toddler safety seat that faces forward should be used from age one to about 40 pounds, (usually about age four). After that time a booster seat should be used until lap/shoulder belts fit correctly. The safety belts should fit so that the lap belt hugs the thighs (below the tummy) and the shoulder belt crosses the shoulder, not the neck.
- . • If you have lap/shoulder belts in the rear seat, use a belt positioning booster for a child who has outgrown a child safety seat. This type of booster seat has no shield; it raises the child up so lap and shoulder belts fit correctly. A booster with a shield is useful if a lap belt only is available.
- . • Always read both the car safety seat instructions and the vehicle owner's manual. Auto manufacturers are making an effort to put specific details about using safety belts and safety seats in current model owner's manuals. However, older vehicle manuals may contain little useful information.

Warning: Children should be buckled up in the back seat, especially if the vehicle has a passenger-side air bag.

From "Selecting and Using the Most Appropriate Car Safety Seats for Growing Children," PEDIATRICS, May 1996. To order a copy, including a useful chart showing age/weight ranges for different kinds of safety seats, call the AAP Division of Publications at 847-228-5097. The price is \$1.95, including postage and handling. You may also find it on the AAP website, www.aap.org.



**American Academy of Pediatrics:
Highlights from the “Car Safety Seats: A Guide for Families 2009”**

Which is the “Best” Car Seat?

- . • No one seat is “safest” or “best.” The “best” car seat is one that fits the child’s size and weight and can be installed correctly.
- . • Higher prices usually mean added features that may or may not make the seat easier to use.
- . • Make sure it fits in your vehicle.
- . • When you buy a new seat, make sure you send the registration card to the manufacturer so you will be notified of any problems or recalls.

Infant-Only Seats

- Can only be used rear-facing.
- Are used for babies up to 1 year of age and up to 20 pounds (or more, depending on model).
- Are small and portable and fit newborns best.
- Come with a 3-point harness or a 5-point harness.
- Several infant seat models come with detachable bases.
- The base stays in the vehicle so you do not need to install it every time. After buckling the baby into the seat, you simply lock the seat into the base.
- Some bases are adjustable to make it easier to correctly recline newborns.
- These seats also can be used without the base or the parent can buy additional bases for use in family vehicles.
- On rear-facing seats, the harness slots should always be at or below your baby’s shoulders.

Convertible seats

- Are bigger and heavier than infant seats, but can be used longer.
- Do not fit newborns as well as infant seats.
- Are used rear-facing for babies up to 1 year of age and up to around 20 pounds.
- Can be used forward-facing for toddlers who are at least 1 year of age and at least 20 pounds.
- When the child is big enough to turn forward-facing, make the following three adjustments:
 - Move the shoulder straps to the reinforced slots above the child’s shoulders.
 - Move the seat into the upright position.
 - Route the seat belt through the forward-facing belt path.
- For larger babies, look for a seat that can be used rear-facing up to 25 or 30 pounds.



Forward-facing seats

- Cannot be used rear-facing.
- Are only for children over 1 year of age and over 20 pounds.
- Cannot be converted to belt-positioning boosters for children over 40 pounds, because this usage requires a lap shoulder belt which is not currently available on school buses.

*** Important Note:**

Districts are encouraged to review the American Academy of Pediatric's (AAP) newest resource, "*Car Safety Seats: A Guide for Families 2009*". This document is concise and thorough and should be referred to for questions regarding a particular make or model CSRS. It is organized by manufacturer, make and model of the CSRS.

"*Car Safety Seats: A Guide for Families 2009*" can be accessed online at: <http://www.aap.org/family/carseatguide.htm>.



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A list of additional non-district certified technicians within Florida can be accessed via the SafeKids Worldwide website at www.safekids.org/certification.

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C. E. White Company, Integrated Child Restraint School Bus Seat Brochure, New Washington, OH, 1998

National Highway Traffic Safety Administration, Guideline for the Safe Transportation of Pre-school Age Children in School Buses, Washington, DC, February 1999

E-Z-On™ Products, Inc. of Florida, E-Z-On™ Presents 10 Ways* to Exercise a Little Restraint, July 1999

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Website Resources

American Academy of Pediatrics	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 Traffic Safety Administration	www.nhtsa.dot.gov
National Association of State Directors of Pupil Transportation Services	www.nasdpts.org
National School Transportation Association	www.schooltrans.com
Florida Association fro Pupil Transportation	www.faptflorida.org

