Beyond Compartmentalization: Selecting CSRS for Preschoolers and Children with Special Needs

School Buses: Regulations and Best Practices
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Beyond Compartmentalization:

Selecting CSRS for Preschoolers and Children with Special Needs

Denise Donaldson, Safe Ride News Publications
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Indisputable Limitations

FACT:
Compartmentalization can provide proper protection in certain types of crashes involving a large bus and properly seated occupants who are elementary age and older and who are not medically fragile.

LIMITATIONS:

- **The child is too small/young (preschool, under 50 pounds).**
- **The bus is too small (≤ 10,000 pounds).**
- **The child has special needs (fragile or cannot stay in position).**

YES—these kids ride on school buses!

INFANTS
Babies who meet the RF weight/height limit for CSRS. (Usually ≤ age 2)

TODDLERS
Youngsters at least age 1 and over 20 pounds who have transitioned to FF.

PRE-SCHOOLERS
Little kids, especially who weigh under 50 pounds.

Students with Special Needs Also Ride the Bus

- "Special needs" includes many conditions.
  - Physical Needs
  - Neurological Needs
  - Mental and psychological/behavioral needs
- Some (but not all) require occupant protection solutions, using:
  - Conventional devices
  - Special needs (medical) devices
  - Wheelchairs

Terminology to Know

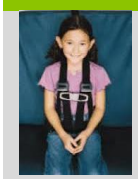
CHILD SAFETY RESTRAINT SYSTEM (CSRS):

Devices used on school buses to provide child protection beyond basic compartmentalization, other than lap-only or lap-shoulder belts. These must meet the requirements specified in FMVSS 213.

Types of CSRS:
Knowing what's available

Add-On CSRS Just for Buses

Attach Using a "Cam Wrap"

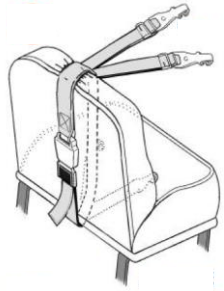
Safety Vests	Safety Harnesses	School-Bus-Only CSRS
		

Add-On CSRS Just for Buses

Some are made for special needs

Behavioral Issues	Extra Support
	

Cam Wrap Attachment
Shown: "Portable Seat Mount" for Vests



Integrated CSRS Just for Buses

Built-in CSRS

- Five-point harnesses
- Forward-facing only
- No installation needed!
- Most fold away for use by others

Integrated CSRS Just for Buses

Built-in CSRS for Special Needs

- For children needing extra support
- Adds positioning straps lap-only or lap-shoulder belt systems

SafeGuard
Upper Torso Device

Sometimes Conventional CRs Are Used on School Buses


Rear-Facing-Only


Convertible


Forward-Facing-Only

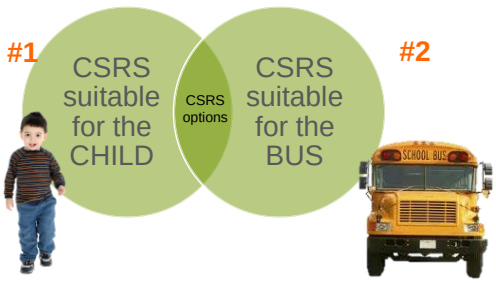

Combination


Medical CSRS

Models designed for cars can be used on school buses, if:
- They fit the needs of the child
- They can be properly anchored onto the bus seating

CSRS Selection:
Identifying the right solution for the child

Basic Approach to CSRS Selection



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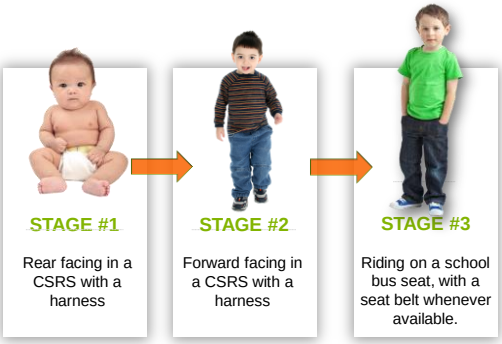
On school buses, CPS has 3 stages…



STAGE #1

Rear facing in a CSRS with a harness

STAGE #2

Forward facing in a CSRS with a harness

STAGE #3

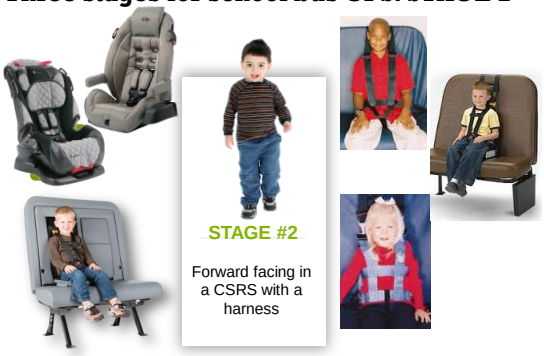
Riding on a school bus seat, with a seat belt whenever available.

Three stages for school bus CPS: STAGE 1

STAGE #1

Rear facing in a CSRS with a harness

Three stages for school bus CPS: STAGE 2



STAGE #2

Forward facing in a CSRS with a harness

Three stages for school bus CPS: STAGE 3




STAGE #3

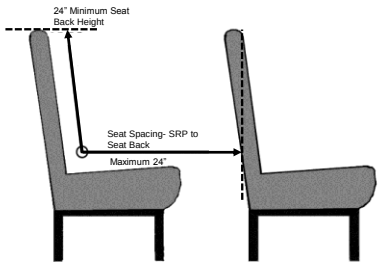
Riding on a school bus seat, with a seat belt if available.

School Bus Seating:

Selection based on considering the seating environment

Bus Considerations:

Seat Row Spacing



The maximum spacing allowed is 24 inches. This is ideal for CSRS use.

Bus Considerations:
Seat Row Spacing

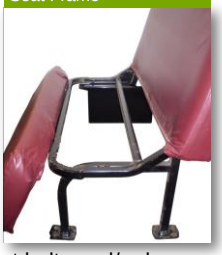

Maximum Seat Spacing


Minimum Seat Spacing

It is fairly easy to see why Minimum Seat Spacing presents challenges to CSRS use!

Bus Considerations:
Seat Frame Strength

Standard (FMVSS 222) Seat Frame



Reinforced (FMVSS 210) Seat Frame

Seat belts and/or lower anchors can be retrofitted ONLY on reinforced seating that meets FMVSS 210.

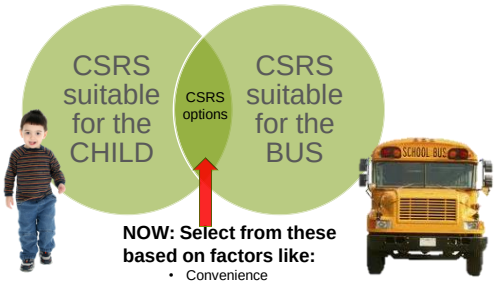
Bus Considerations:
Anchorage Options

LATCH

Seat Belts

FMVSS 225 (Lower Anchors) and FMVSS 222 (lap-shoulder belts) apply to small buses ≤ 10,000 pounds only. Some state and municipal laws apply to larger buses.

Basic Approach to CSRS Selection



NOW: Select from these based on factors like:

- Convenience
- Cost
- Pros/Cons of CSRS models

Want to Learn More?

- 8-Hour training course: "CPS Restraint Systems on School Buses National Training" (NHTSA)
- School Bus Safety Handbook – 2nd Edition (Safe Ride News Publications)
- Online Tutorial available on NHTSA website
- CPS for School Buses listserve: CPSforSchoolBuses@yahoogroups.com (info at www.saferidenews.com)

Helpful Resources

- **NHTSA: Guideline for the Safe Transportation of Pre-school Age Children in School Buses** http://www.nhtsa.dot.gov/people/injury/buses/Guide1999/prekfinal.htm
- **NHTSA: Choosing the Correct School Bus For Transporting Pre-School Age Children** http://nhtsa.gov/people/injury/buses/choosing_schoolbus/pre-school-bus_01.html
- **NHTSA: Child Safety Restraint Systems (CSRS) on School Buses Training Videos** http://www.nhtsa.gov/Driving+Safety/School+Buses/SCRS/CSRS+on+School+Buses+Training+Videos
- **Head Start Regulations:** CFR 45 Part 1310
- **National School Transportation Specifications & Procedures** http://www.ncstonline.org
- **Safe Ride News:** http://saferidenews.com/srndnn/SRNProducts/iSchoolBusSafetyHandbook/tabid/203/Default.aspx