

Goals of the Presentation	Discuss	Discuss Pennsylvania laws and NHTSA recommendations concerning CPS safety during school transportation
	Discuss	Discuss Transporting infants, toddlers, and pre-school age children in school buses and school vehicles
	Describe	Describe Best practices for child restraint selection options
	List	List Resources to better support CPS technicians and school support staff

Pennsylvania CPS Laws

PA Title 75 – Vehicles  
(Pertains to School Vehicles)

PA's Child Passenger Safety Law

Person operating a passenger car, Class 1 truck, Class 2 truck, antique motor vehicle, or motor home shall secure a child in a child passenger restraint system.

All **drivers** are responsible for securing children in the appropriate child restraint system.

PA law § 4581(d): A child passenger restraint system and a child booster seat **shall be used as designated** by the manufacturer of the system in motor vehicles equipped with seat safety belts and shall meet FMVSS 213.

PA's Child Passenger Safety Law

All drivers are responsible for securing children in the appropriate child restraint system.

- Birth up to age 4 - Car Seat / Primary
- Under age 2 – Rear facing / Primary
- 4 up to age 8 – Booster / Primary
- 8 up to age 18 – Seat Belt / Primary

Pennsylvania

PA Title 67 – Vehicles  
(Pertains to School Transportation)

Title 67: Chapter 171  
School Buses and School Vehicles

- School: An institution for the education or training of children, including but not limited to kindergartens, rehabilitation centers, day care centers, Head Start centers, group day care homes, family day care homes and summer camps.

## Title 67: Chapter 171 School Buses and School Vehicles

- **School Vehicle:** A motor vehicle, except a motorcycle, designed for carrying no more than ten passengers, including the driver, and used for the transportation of preprimary, primary or secondary school students while registered by or under contract to a school district or private or parochial school.
  - Vehicle would need to comply with Vehicle Code: Title 75

## Title 67: Chapter 171 School Buses and School Vehicles

- **School Bus:** A motor vehicle designed to carry 11 passengers or more, including the driver, and used for the transportation of preprimary, primary or secondary school students to or from public; private or parochial schools or events related to these schools or school-related activities.

## Title 67: Chapter 171 School Buses and School Vehicles

- **Restraining Devices:** Drivers of school vehicles that are required to comply with the requirements of 75: 4581 (relating to child passenger restraints) and the Department's regulation implementing those requirements.
- **Seat Belts:** Passengers and drivers in vehicles that are equipped with seat belts shall be required to wear them whenever the vehicle is in motion.

### FMVSS and CSRS

208 & 209: Seat belt assemblies, locations and anchorage

210: Seating and seat belt anchorage strength

222: Seat spacing, compartmentalization

225: LATCH lower anchors and tethers

213: child safety restraint systems

## NHTSA Guidelines for Safe Transportation of Preschool Age Children in School Buses

- Transport CSRS suitable for the child's weight and age
- Properly secure child in the CSRS.
- CSRS should be properly secured to the school bus seat, using anchorages that meet FMVSSs.
- Bus attendant should assist the driver
- Regular cleaning and inspection
- CSRSs should be in front of bus
- 39 inch seats = 2 CSRSs; less than 39 inches = 1 CSRS
- 39 inch seats or more = 3 vests that attach using cam wraps

## Securing the CSRS in School Vehicles (Vans)







### Review Air Bag Warnings


- Always on sun visor
- Sometimes on airbag cover and inside door
- Sometimes on safety belt or vehicle seat
- Can be almost anywhere
- Check vehicle owner's manual for allowed front seat passengers



### Vehicle LATCH Parts

- One pair lower anchors
- Seat bight
- Top tether anchor





### Top Tether Anchors Possible Locations

- Ceiling above rear seating positions
- Rear window shelf
- Back of vehicle seat
- Floor of cargo area
- Under vehicle seat
- Always check vehicle owner's manual for correct location and retrofit instructions

### LATCH Connector Designs

- Some connector designs provide easier attachment than others
- Most CSS models use flexible attachments
- Attaching to the 6mm vehicle anchor bar may vary, but basic installation is similar

### Special LATCH Considerations

- 65 pound weight limit on LATCH use
- Use assigned hardware
- Tether anchor or Lower Anchors not available in seating position

### Seat Belt Systems

- What locks the CRS in? Seat belt or latchplate
  - Lap Belt only does not work with boosters
- Ensure backless booster has vehicle head restraint or change seating position
  - Choose Seat Belt or Lower Anchors - not both - and always use top tether

### Possible CSRS for School Vans:

- Rear Facing only
- Convertible
- FF/Combination/3-in-1
- High Back Booster
- Backless Booster

### 5 Ways Restraints Prevent Injury

1. Prevents ejection
2. Contacts the strongest parts of the body
3. Spreads forces over a wide area of the body
4. Helps the body to "ride down" the crash
5. Protects the head and spinal cord




### CPS Best Practice Recommendations




### AAP Guidelines

- All infants and toddlers should ride in a rear-facing car safety seat until they reach the highest weight or height allowed by their car seat's manufacturer (2018).
- Children who have outgrown the rear-facing weight or height limit for their car safety seat, should use a forward-facing car safety seat with a harness for as long as possible, up to the highest weight or height allowed by their car safety seat's manufacturer.



### AAP Guidelines

- All children whose weight or height is above the forward-facing limit for their car safety seat should use a belt positioning booster seat until the vehicle seat belt fits properly, typically when they have reached 4 feet 9 inches in height and are between 8 - 12 years old.
- When children are old enough and large enough to use the vehicle seat belt alone, they should use a lap and shoulder belt.
- All children younger than 13 years should be restrained in the rear seat of the vehicle.



### 5 Elements for a Correct Installation

- Selection**
  - Age
  - Weight
  - Height
  - Developmental Levels
- Direction**
  - Rear-facing
  - Forward-facing
- Location**
  - Seat selection is based on the needs of all passengers
- Harness Adjustment and Fit**
  - RF: at or below shoulders
  - FF: at or above shoulders
  - Snug and lays flat
- Installation**
  - Correct belt path
  - Seat belt or LATCH
  - Tight – less than 1" of movement when pulled at the belt path

### Label Information

- Weight & size guidelines
- Basic use, installation & warnings
- Air bag warning on rear-facing car seat
- Manufacturer's identification and 213 certification
- Model number & date, expiration date







### Securing Child in Car Seat

- Avoid bulky clothing or anything not sold with the car seat that could prevent snug harness fit.
- A harness that is too loose could result in occupant ejection or excessive excursion.




### Expiration Dates




- Car seats typically have an expiration date of 6-7 years from date of manufacture, some are 10 years.
- Why expiration dates are important:
  - Unknown history of the seat
  - Technology and safety standards change
  - Components degrade
  - Parts get lost or can be installed incorrectly
  - Instructions and labels may not be available

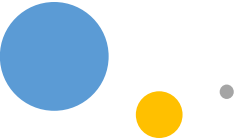
### Counterfeit Car Seats

Be sure that the car seat being used meets the following criteria under FMVSS:

- Required wording: "This child restraint system conforms to all applicable federal motor vehicle safety standards."
- Brand name stamped on the seat, comes with clear labels, use and installation instructions, registration card.
- Model number, manufacturer phone number, and manufacture date printed on the seat.

### Securing the CSRS in School Buses



### School bus is the safest vehicle on the road – Why?

Statistically Safest Transportation

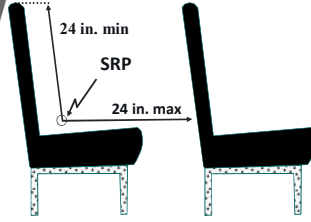
Larger & heavier • Obvious differences of mass, size and floor height	Lower risk travel	Conspicuous	Meets stringent FMVSS • 27 applicable FMVSS's • 5 unique to school buses
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Occupant Protection:

Compartmentalization	Seat belts required on small buses	LATCH required in 2 seating positions on buses under 10,000 lbs.
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### School Bus Safety Issues



24 in. min  
SRP  
24 in. max

**Compartmentalization**

### “Spec-ing” a Bus FMVSS 210 Seat vs. Non-210 Seat




**Lap-belt ready seat**  
• Note the diagonal support and other supporting structure

**Seat that is not “lap belt ready”**


**FMVSS 210: The seat must be reinforced to anchor a lap belt**

### Correct Lap Belt Length for Installation of Conventional CSRS



- Non-adjustable end (buckle) of the lap belt extends no more than 1-2”.
- Starting October 2011, all buses with lap belts were required to be manufactured with the seat belt buckle extending no longer than 1 to 2” out of the seat bight.

### Correct Lap Belt Position for Installation of Conventional CSRS






- Non-adjustable end of lap belt at aisle or at center
- Place only 2 CSRS on a 39-inch seat

### LATCH on School Buses

- Small school buses, weighing less than 10,000 pounds, manufactured prior to October 2011 are required to have lap belts.
- After October 2011 are required to have lap and shoulder belts.
- Lower anchors are required in at least two seating positions on small school buses.
  - Lower anchors can be ordered for additional seating positions
  - Optional on large school bus
- Tether anchors are not required in school buses.
  - Some special needs car seats require tether use

### LATCH on School Buses

#### Ways to anchor a tether on a school bus:

- Use a bus seat equipped by the manufacturer with a tether anchor 
- Retrofit a tether anchor on an existing bus seat frame, if allowed by the bus manufacturer 
- Use the seat belt from the bus seat behind 



## Restraint Options for School Buses




### Possible CSRS for School Buses:

- Rear Facing only
  - Without base may work better
- Convertible
- FF/Combination/3-in-1

### Possible CSRS for School Buses:



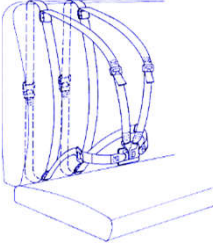

- Harnesses/Vests
- Integrated Child Safety Seat
- School Bus Specific CSRS




### Reasons to Use a Harness or Vest

- Child is too big for a CSRS
  - Must be at least 20 lbs.
- No lap belts available on school bus; no other school bus available
- Behavioral reasons
- Child needs positioning assistance
- Other medical problems

### Passengers Behind Seat Mounts Must Be Restrained







### EZ-On Safety Vest

- Child placed in vest prior to bus departure reduces load time
- Done by people who know student best
- Can be put on under bulky coat


**E-Z-On Products, Inc.**

Model #101BR




20-168lbs

Model #203




20-65lbs only

Model #101/102



20-168lbs



Model #101PB (XS-S)



20-65lbs only


**E-Z-On Products, Inc.**

**E-Z-ON 86Y Universal Harness**

A 45° angle is the most appropriate for a tether anchor installation.

**543 KidCam Harness**



30-80lbs

**E-Z-On Houdini Max 2 Vest**



- Rear Zipper Closure with a Zipper Lock,
  - Stops even the most persistent fingers from unzipping
- 3 Zipper options
  - Allows the vest to grow with the child
- All connector points are not accessible to the passenger
- Dynamically crash tested for passengers 31 – 168lbs.
- EZ-ON Max 2 Mount is sold with Vest.

**SafeGuard Star Seat Products**



**STAR Product Line Specifications**

Product	Weight (lbs.)	Height	Torso Height	Age
STAR**	25-65	57" max	20" max	over 1 year of age
STAR yMax*	25-90			
STAR Special Needs*	25-105			

\*2 per seat maximum \*\*3 per seat maximum

**SafeGuard STAR**

**FEATURES**

- Weight: 25 lbs to 65 lbs / 57 inches
- 5-point restraint - quick release buckle
- Optional: Chest strap:
  - Additional support for passengers with disabilities
- Does not require the use of a lap belt or seat belt ready seat
- Flexible positioning base situates the child in the proper restraint position
- Fits high and low back school bus seats
- Compliant with all Federal and Head Start restraint requirements
- Storage bags and replacement pads are available







**STAR Connector Strap**

**FEATURES**

- Connects 3 standard star restraints on a 39" school bus seat
- Eliminates the loss of seating capacity on your bus
- Meets FMVSS requirements



Shown with 3 Standard STAR Restraints



### SafeGuard STAR Plus

**FEATURES**

- **Weight:**
  - 25 lbs to 90 lbs / 57 inches
- Fits your current high and low back seats
- No lap belts required
- Meets FMVSS requirements
- Compatible with both seat belt-ready and non-seat belt-ready seats




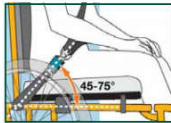
### IMMI Integrated Car Seat

- Forward-facing CSRS with a 5-point harness built into the bus seat.
- Easy shoulder height adjustment.
- Eliminates the need for add-on restraints



When multiple children use the same seat throughout the day....

- Always make sure the seat is still tight. (not moving more than an inch side to side or front to back at the belt path)
- Adjust the harnesses between children. Always make sure you cannot pinch any extra webbing
- Try to use the same seat for similar sized children to ensure that the harness routing is correct





### WC19 Wheelchair

- Voluntary standard for crashworthiness that wheelchair manufacturers can test/design
- Use manufacturer's instructions
  - Ensure harness with wheelchair is also compliant
- Transportation plan should be on IEP or IFSP

### Securing a Wheelchair in a School Bus

- Whenever possible, transfer pre-school children from a wheelchair to a CSRS
- 4 clearly marked and easily identifiable tie-down locations
  - Can be 6 point tie down for heavier wheelchairs
- Wheelchair design should allow for better fit and use of the lap/shoulder belt or WC19 compliant harness system (for children under 50lbs)



### Cleaning and Maintenance

<b>Always</b>	Follow manufacturers' instructions.
<b>Use</b>	Mild soap and water and rinse with clean water.
<b>Never</b>	Use any chemicals such as starch, bleach, or spray-on "fabric care/wrinkle guard" products.
<b>Do NOT</b>	Lubricate the buckle.
<b>Do NOT</b>	Iron the harness.

## Storage and Inventory

- Storage location
  - Clean, dry storage locker / closet
- Maintain a list of CSRSs
  - Number the seats
  - Vehicle location
  - Model Number
  - Manufacturer Date
  - Original Instructions
- Life expectancy of a child safety seat
  - Follow car seat manufacturer's expiration date
- Replacement after a crash – proper disposal
  - Car Seats, Seat Belts, LATCH
- Check recall lists, and turn in registration post cards

## Remember

**Install a CSRS following the instructions provided in both the car seat and vehicle owner's manual.**

- When in doubt, don't guess:
  - Read instructions
  - Contact for technical assistance
    - 1-800-CAR-BELT
    - [www.pakidstravelsafe.org](http://www.pakidstravelsafe.org)

## NHTSA Child Passenger Safety Restraint Systems on School Buses

Topics covered during 8 hour course:

Intro to the Course

- School Buses
- Seat Belts
- Intro to Child Safety Restraint Systems (CSRS)
- Rear-Facing Seats with Practice Installs
- Forward-Facing Seats with Practice Installs
- School Bus Specific CSRS, integrated school bus seats, and lap/shoulder belts with practice installs
- Maintenance, disposal and storage of seats
- Emergency Evacuations

## NHTSA Child Passenger Safety Restraint Systems on School Buses

National Training

Intended Audience: School Bus drivers, monitors, transportation supervisors and bus mechanics as well as Child Passenger Safety Technicians

8-hours course offered by TIPP Staff\*:


NW Region: Mary Lakari  
 SW Region: Kristen Urso  
 Central Region: Kelly Whitaker  
 NE Region: Cathy Connors  
 SE Region: Teresa Rychlak

\*Contact information available at 1-800-CAR-BELT



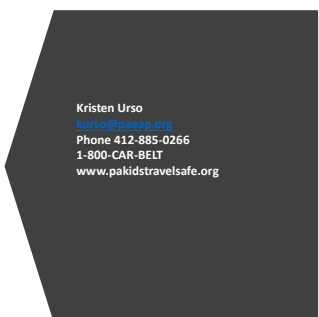
## Answering your Questions

- Rear facing only seats may install better without the base on school bus; move handle into appropriate locked position
- Wheelchairs should face forward and have 7 points of contact: 4 wheel tie downs, and lap and shoulder belt (or compliant harness)
- Bus behavior needs reinforced by bus driver: when bus is in motion, belts (if on bus) are worn by children
- School age children are best protected on a school bus by seat compartmentalization (pre-school age should be in CSRSs)
- Belt Shortening Clips are used when seating position has ELR and sewn-on latchplate (mostly older vehicles); can try another seating position first
- Best way to educate transportation staff: bring them all together, get hands on seats and buses, and have TIPP provide inservice



Traffic Injury  
Prevention Project  
*Pennsylvania*

**Pennsylvania Chapter**  
American Academy of Pediatrics  
DEDICATED TO THE HEALTH OF ALL CHILDREN™



Kristen Urso  
[kurso@paapio.org](mailto:kurso@paapio.org)  
Phone 412-885-0266  
1-800-CAR-BELT  
[www.pakidstravelsafe.org](http://www.pakidstravelsafe.org)