

CLASSROOM NOTES:

Chapter Objectives

- Show how vehicle design affects the correct selection and use of CRs
- Identify appropriate CRs by vehicle type
- Explain current recommendations for CRS in other vehicles

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Pickup Trucks

- Some have seating limitations
- Air bag on-off switch



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- The occupant restraint standards are the same as for passenger cars.
- Some regular-cab and extended-cab pickup trucks with frontal passenger air bags have on-off switches for the frontal passenger air bag.
- CRs are crash tested on forward facing vehicle seats and cannot be secured on a pickup truck's side facing jump seat.
- Limited rear bench seats may not allow enough space between front and rear seating areas to achieve the correct recline angle for a rear-facing car seat.
- According to CR manufacturers, a CR must have 80% of the base supported by the vehicle seat with no more than a 20% hangover on the front edge of the vehicle seat.


- Cargo areas are not designed for passenger seating under any circumstances.

CLASSROOM NOTES:

School Bus Safety Facts

Safest transportation:

- Larger and heavier
- Lower risk travel
- Conspicuous
- Meets stringent FMVSSs



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- School bus transportation is the safest form of ground transportation. School buses are nearly 8 times safer than passenger vehicles. **Getting to and from the bus is more dangerous than riding the bus.**
- Buses are larger and heavier than most other vehicles. The crash forces are distributed throughout the vehicle differently and are also experienced by the occupants differently.

Resources for bus transportation:

- <http://www.nasdpts.org>.
- <http://www.nhtsa.dot.gov>

School Bus Safety Facts (cont.)

- Occupant protection:
 - Compartmentalization
 - Seat belts required on small buses
 - LATCH required in two seating positions on buses under 10,000 pounds

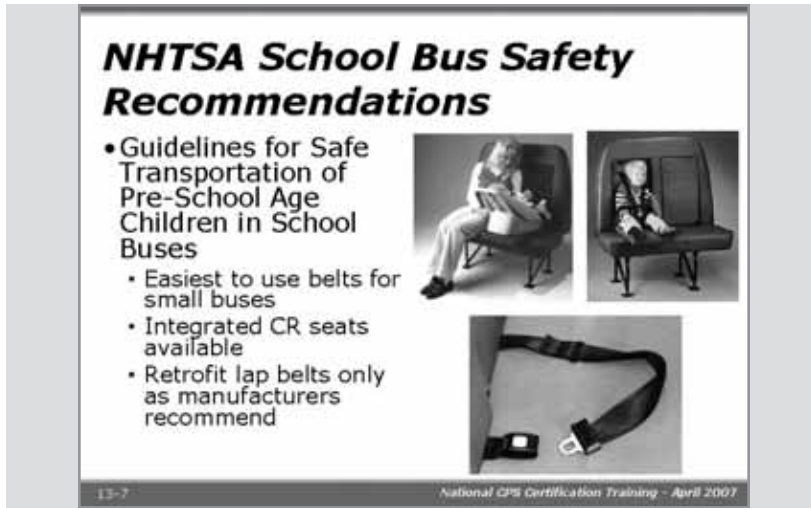
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CLASSROOM NOTES:

- Passenger seating and crash protection, known as “compartmentalization,” is required on school buses.
- Small school buses (weighing less than 10,000 pounds) are required to have seat belts. Lower anchors are also required in at least two seating positions. Tether anchors are not required in school buses.



- Compartmentalization is a passive occupant protection system using the concept of eggs in a carton.
- Seats on school buses must have flexible, energy-absorbent, high seat backs (about 24 inches from the lower cushion).
- The combination of energy-absorbent seat backs and narrow spacing creates a compartment within which each occupant is confined in a crash.
- For more information on the safety recommendations for school buses, go to <http://www.nts.gov/publicctn/1999/sir9904.pdf>.
- For AAP recommendations on school bus safety see policy statements at <http://www.aap.org>



NHTSA recommendations for infants and preschool age children on buses are as follows:

- Preschool age children should be correctly protected in CRs meeting FMVSS 213 when they ride on a school bus.
- NHTSA recommends retrofitting seat belts on existing school bus seats only when manufacturer’s instructions are followed.
- Tethers are not used on school buses. One exception involves certain special-needs CRs that require the use of a tether.
- When a tether is required, use the seat belt in the seat behind the CR as the anchor point.
- Always check the CR and school bus manufacturer’s instructions.

Appendix:

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

School Bus Safety: Safe Passage For America’s Children

Buckling Up Preschoolers on School Buses, Special Report, July 2003

Also see the AAP policy statement “School Transportation Safety” at <http://www.aap.org>.

CLASSROOM NOTES:



- Options for children who need restraints on a school bus:
 - Integrated CRs
 - CRs
 - Harnesses and vests
 - Wheelchairs
- Safety vests are an option for children 20 pounds and more when other CRs will not work.
- Safety vests used on school bus seats use a “cam wrap” which wraps all the way around the seat back. A “cam wrap” cannot be used on other vehicles.

Children With Special Health Care Needs

- Individual Education Plan (IEP)
 - Details on safe transportation of the child should be included
- National Standards for School Transportation
 - School bus drivers need focused training on transporting special-needs students
- Special-needs occupant restraint systems
 - Appropriate selection
 - Regular CRS that may work with a child having special needs
 - Use of approved devices
 - Transit option wheelchairs

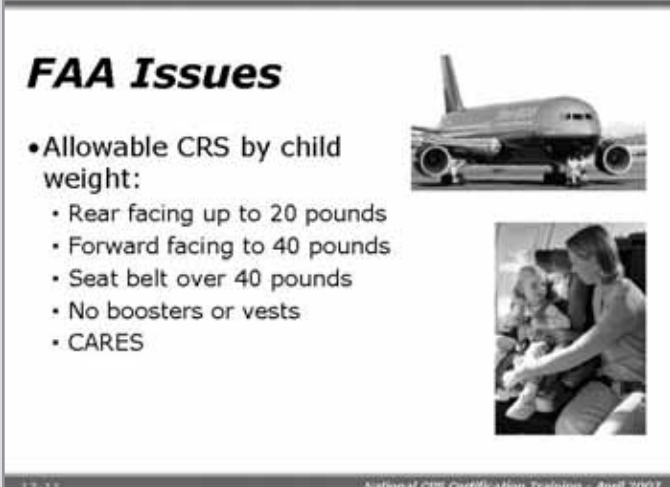
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CLASSROOM NOTES:

- Any CR used on an airplane must have a label stating it is certified for aircraft use.
- The Department of Transportation's Federal Aviation Administration (FAA) encourages, but does not require, the use of CRs on airplanes.
- Airlines currently allow children under the age of 2 to fly free of charge as "lap children," and many airlines offer half-price tickets so parents can be guaranteed that their children can travel in a safety seat.
- Turbulence (rough flying) can happen with little or no warning. The safest place for children during turbulence or in an emergency is in an approved CR.
- The FAA strongly urges parents and guardians to secure children in an appropriate restraint based on child weight and size.

Resources

- http://www.faa.gov/passengers/fly_children/
- Safe Ride News Fact Sheet "Airplane Travel with Babies" at <http://www.saferidenews.com>.



FAA Issues

- Allowable CRS by child weight:
 - Rear facing up to 20 pounds
 - Forward facing to 40 pounds
 - Seat belt over 40 pounds
 - No boosters or vests
 - CARES

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- Use a rear-facing CR for infants less than one and 20 pounds.
- Use a forward facing CR for children over age 1 and 20 pounds.

- Use the airplane seat belt for all children over age 2 if no CR is available.
- Do not use booster seats or vests, as there are no lap/shoulder belts for airline passengers.
- The FAA has approved the AmSafe Aviation CARES device. The FAA recently established guidelines for the use of a restraint system for use on planes only, not in motor vehicles.
- CARES uses an additional belt and shoulder harness that goes around the seat back and attaches to the passenger lap belt. It is designed for children weighing between 22 and 44 pounds.
- For more information:
http://www.faa.gov/passengers/fly_children

CLASSROOM NOTES:

Emergency Vehicle Issues

- Side-facing vehicle seats
- Rear-facing vehicle seat
- Aftermarket equipment
 - Safety screen in police vehicle
 - Plastic seats
- Use in certified anchor locations
- Control of loose objects
- Transport of non-injured child in alternate vehicle



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- There are no standards for crash-testing a CR on a side-facing or rear-facing vehicle seat, and a CR should not be used in these seating positions.
- Rear-facing car seats are made to face backward on a forward-facing vehicle seat. They cannot be safely installed on a rear-facing ambulance seat.
- If possible, non-patient children should be transported in another vehicle. CRs should be secured with seat belts anchored only in locations considered safe in a crash.
- Emergency services should develop and follow guidelines to transport children safely. The

