

# MODULE 11 • CPS in Other Vehicles

## Module Agenda: 15 Minutes

Topic	Suggested Timing
1. Introduction	2
2. Appropriate Car Seats and Booster Seats by Vehicle Type	10
3. Progress Check and Summary	3
<b>TOTAL</b>	<b>15 Minutes</b>

### Module Purpose

The purpose of this module is to provide an introduction to car seats and booster seats in other types of vehicles. You will address pickup trucks, 15-passenger vans, school buses, airplanes, and emergency vehicles.

### Module Objectives

- Identify appropriate car seats and booster seats by vehicle type.
- Explain current recommendations for car seats and booster seats in other vehicles.

### Special Media, Materials, and Resources

- Samples of harnesses and vests
- Guideline for the Safe Transportation of Pre-School Age Children in School Buses (NCPSB website at [www.cpsboard.org](http://www.cpsboard.org))
- AAP School Transportation Safety (NCPSB website at [www.cpsboard.org](http://www.cpsboard.org))
- AAP Restraint Use on Aircraft (NCPSB website at [www.cpsboard.org](http://www.cpsboard.org))
- Crash Protection for Children in Ambulances (NCPSB website at [www.cpsboard.org](http://www.cpsboard.org))
- Recommendations for the Safe Transport of Children in Emergency Ground Ambulances (National Association of State EMS Officials at [www.nasemso.org](http://www.nasemso.org) and Pediatric Emergency Care Council at [www.nasemso.org/Councils/PEDS/index.asp](http://www.nasemso.org/Councils/PEDS/index.asp))

### Video Titles and Times

None

### Activities

Final Progress Check

### Preparation

Prepare to conduct the final progress check.

## 1. Introduction



### Display PPT 11-1.



Present module purpose.

The purpose of this module is to provide an introduction to car seats and booster seats in other types of vehicles. We will address pickup trucks, 15-passenger vans, school buses, airplanes, and emergency vehicles.



### Display PPT 11-2.



Present module objectives.

As a result of this module, you will be able to:

- Identify appropriate car seats and booster seats by vehicle type.
- Explain current recommendations for car seats and booster seats in other vehicles.

---

## 2. Appropriate Car Seats and Booster Seats by Vehicle Type



Present an introduction to car seats and booster seats by vehicle type.

Vehicle design affects the correct selection and use of car seats and booster seats. CPS Technicians must understand **how** vehicle design impacts the correct use of car seats and booster seats in all modes of transportation.



Reference TG page 11-1.



### Display PPT 11-3.



Review car seat and booster seat use in pickup trucks.

Occupant restraint standards for pickup trucks are the same as for passenger cars.

- Car seats and booster seats are crash tested on forward-facing vehicle seats and cannot be secured on a pickup truck's side-facing jump seat.
- Undersized (or small) 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.



### Display PPT 11-4.

- As with car seats and booster seats in passenger cars, according to most manufacturers, a car seat in a pickup truck must have 80 percent of the base supported by the vehicle seat with no more than a 20 percent overhang on the front edge of the vehicle seat. Some models require 100 percent of the car seat to be on the vehicle seat and some have indicators (lines) on the seat to show how much must be placed on it.
- Cargo areas are **NOT** designed for passenger seating under any circumstances. Children and adults can be easily thrown from cargo areas at relatively slow speeds as a result of a sharp turn.
- Only manufacturer approved seating positions can be used (check the owner's manual for recommendations on cargo areas and also center seating positions).

**[INSTRUCTOR NOTE]**

[Mention that some regular-cab and extended-cab pickup trucks with frontal passenger air bags have on-off switches for the frontal passenger air bag.]

**Display PPT 11-5.**

Review car seat and booster seat use in 15-passenger vans.

Many childcare providers or schools use 15-passenger vans to transport multiple children. At times, they overload the vehicle. Fully loaded, 15-passenger vans cause the center of gravity to shift rearward and upward, increasing the likelihood of a rollover.

**NEVER** load the roof. This cargo will be above the center of gravity of the vehicle and will increase the likelihood of a rollover.

**Reference TG page 11-2.**

Review the importance of having experienced drivers.

It is important that the van be operated by experienced drivers who should:

- Understand and be familiar with the handling characteristics of their vans, especially when fully loaded.
- Load the van front to back in order to balance and distribute the weight.



Review what manufacturers do to reduce the risk of rollovers.

To reduce the risk of 15-passenger van rollovers, manufacturers:

- Widen the vehicle and/or reduce its height.
- Impose structural standards for school buses.
- Equip them with laminated side windows.
- Provide emergency exits.
- Equip them with extra signs and signals.
- Require a commercial driver's license.
- Equip them with dual rear wheels.



Reference TG page 11-2.



Display PPT 11-6.



Review car seat and booster seat use in school buses.

School bus transportation is the safest form of ground transportation. School buses are nearly eight times safer than passenger vehicles.

- Buses are larger and heavier than most other vehicles. Crash forces are distributed throughout the vehicle differently and are also experienced by the occupants differently.



Display PPT 11-7.

- Passenger seating and crash protection, known as “**compartmentalization**,” is required on school buses.
  - Seats on school buses must have flexible, energy-absorbent, high seat backs (a minimum of 24 inches from the hip reference point).
  - The combination of energy-absorbent seat backs and narrow spacing creates a compartment within which each occupant is confined in a crash.
- 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.

**[INSTRUCTOR NOTE]**

[FMVSS 225, “School Bus Passenger Seating and Crash Protection,” does **NOT** require the installation of seat belts (other than for the driver) on new school buses with gross vehicle weight ratings (GVWRs) of greater than 10,000 pounds, the standard large school bus. Buses with GVWRs of 10,000 pounds or less are required to have seat belts for all passenger positions, but the larger buses rely on strong, well-padded, energy absorbing seats and higher seat backs to compartmentalize and protect passengers during a crash.

Current school bus occupant protection rules are based on compartmentalization. School bus seats made since April 1, 1977, meet the compartmentalization requirement.]



**Reference TG**  
page 11-3.



**Display PPT 11-8.**



Review NHTSA school bus safety recommendations.

Let’s review NHTSA recommendations for infants and preschool age children on buses.

- Preschool age children should be properly restrained in car seats meeting FMVSS 213 when they ride on a school bus.
- Retrofitting seat belts on existing school bus seats is possible only when manufacturer instructions are followed.
- Tethers are **NOT** commonly used on school buses. One exception involves certain special needs car seats that require the use of a tether.
- For more information, go to <http://www.nhtsa.gov/School-Buses>.

**[INSTRUCTOR NOTE]**

[Some new buses can be ordered with lap-and-shoulder belts. School buses can also be ordered with lower anchors. Anytime a retrofit is performed, it is critical that only parts provided by the manufacturer are used and that the manufacturer instructions are followed to satisfy FMVSS.]



**Reference TG**  
page 11-3.



**Display PPT 11-9.**



Review child passenger safety options on school buses.

An Individual Education Plan (IEP) is for children between the ages of 3 and 21 and is developed to support each child's special needs. The transportation needs of the child are a related service that should be included in the IEP.

Children under age 3 who have special health care needs receive the same kind of services through an Individual Family Service Plan (IFSP) that considers the family needs of the child as they receive early intervention services and therapy.

There are several options for children who need car seats on a school bus:

- Integrated car seats
- Conventional car seats
- Harnesses and vests
- Wheeled transportation devices

In addition, safety vests are options for children 20 pounds or more when other car seats will not meet the child's needs.



**Reference TG**  
page 11-4.



**Display PPT 11-10.**



Review car seat and booster seat use on airplanes.

The Department of Transportation's Federal Aviation Administration (FAA) encourages, but does **NOT** require, the use of car seats on airplanes for children under the age of 2.

- Airlines currently allow children under the age of 2 to fly free of charge as lap children.
  - Some airlines offer discounts so caregivers can be guaranteed their children can travel in a car seat.
  - Caregivers should always verify car seat policies with the airline on which they are traveling.
- 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 car seat.
- Any car seat used on an airplane must have a label stating it is certified for aircraft use.

**Display PPT 11-11.**

- Use a rear-facing car seat for infants younger than 1 and less than 20 pounds.
- Use a forward-facing car seat for children weighing 20 to 40 pounds.
- Use the airplane seat belt for children over 40 pounds.

The FAA has approved the AmSafe Aviation CARES device. The FAA recently established guidelines for the use of this restraint system for use on planes only – **NOT** in 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 who are less than 40 inches and can sit unassisted.

**[INSTRUCTOR NOTE]**

[In August 2005, the FAA announced it would **NOT** require the use of car seats on airplanes. The requirement would have resulted in the need for families to purchase additional airline tickets for children making it cost prohibitive to fly, and instead drive, in some cases. The decision was based on current FAA and NHTSA studies showing that such a requirement could result in another 13 to 42 added family member deaths in highway crashes over 10 years, if requiring extra airline tickets forced some families to drive.

All booster seats and vest systems cannot be used as of September 1996 regardless of labeling.]

**Reference TG  
page 11-5.**

Review car seats and booster seats in emergency vehicles.

Emergency vehicles may have side or rear-facing vehicle seats. There are no standards for crash testing a car seat or booster seat on a side-facing or rear-facing vehicle seat. A car seat or booster seat 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 in an emergency situation should be transported in another vehicle. Car seats and booster seats 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.
- A car seat or booster seat should **NOT** be installed in police vehicles if a prisoner screen is present. The screen does not allow enough space for the forward movement of the child's head. Plastic or prisoner seats are also not compatible with car seats and booster seats and **CANNOT** be used.
- In cases where police equipment is present and correct installation is not possible, police officers will need to find another way to transport the child.

**NOTE:** It is important to secure the EMS provider and equipment. Children are only as safe as the environment around them. Flying unrestrained medics and equipment can be extremely hazardous.

### [INSTRUCTOR NOTE]

[Encourage participants who work in a hospital, police department or EMS situation to work with their supervisors to research, develop, and implement a child transportation plan. Refer participants to the NCPSB website for policy recommendations.

Encourage participants to use the resources located on the NCPSB and other websites (and listed in TGs).

If a police officer is in class, mention that the International Association of Chiefs of Police (IACP) has model occupant protection policies for agencies on the use and enforcement of seat belts for officers and transport of others in law enforcement vehicles (including car seats). This policy is available at [www.theiacp.org](http://www.theiacp.org).]

---

### 3. Progress Check and Summary



Reference TG  
page 11-6.

**[INSTRUCTOR NOTE]**

Conduct progress check.

[Conduct the following progress check as a large group activity. Pose each question and ask for responses from the group. Add any information not provided by participants.]

Let's review what we learned in Module 11 through a progress check. Write down correct responses in your TG.

1. What are some factors to consider when selecting a car seat or booster seat for a pickup truck?

**Answer:**

- The occupant restraint standards are the same for pickup trucks as for passenger cars.
- Undersized or small 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.
- Cargo areas are **NOT** designed for passenger seating under any circumstances. Children and adults can be easily thrown from cargo areas at relatively slow speeds as a result of a sharp turn.
- Only manufacturer approved seating positions can be used (check the owner's manual for recommendations on cargo areas and also center seating positions).

2. What are some factors to consider when selecting a car seat or booster seat for a school bus?

**Answer:**

- Preschool age children should be correctly restrained in car seats and booster seats meeting FMVSS 213 when they ride on a school bus.
- 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.
- Tethers are **NOT** generally used on school buses.

3. What are some factors to consider when selecting a car seat to use on an airplane?

**Answer:**

- Any car seat on an airplane must have a label stating it is certified for aircraft use.
- 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 car seat.

4. What are some factors to consider when selecting a car seat or booster seat for an emergency vehicle?

**Answer:**

- There are no standards for crash testing a car seat and booster seat on a side-facing or rear-facing vehicle seat. Car seats and booster seats 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.
- A car seat should **NOT** be installed in police vehicles if a prisoner screen or other restrictive equipment is present.



Conclude module.

We have covered child passenger safety in other types of vehicles/modes of transportation, along with all types of car seats and booster seats. Let's apply what you have learned up to this point in the course in this next module where you will practice car seat and booster seat installations along with how to effectively communicate with caregivers.