OPERATION KIDS: NEXT GENERATION

Child Passenger Safety
Basic Awareness Course

INSTRUCTOR MANUAL

May 2013
If we have a duty to respond to it, then we have a duty to prevent it.

Acknowledgements iv
Planning and Logistics v
  Mission v
  Goals and Objectives v
  Instructors vi
  Participants vii
  Key Concepts vii
  Teaching Tips viii
  Instructions for Training Exercises xv
  Sample Agenda xvii

Chapter 1: Introduction and Course Objectives 1
  Instructional Notes 1
  Lesson Plan 2

Chapter 2: Child Passenger Safety – We’re All in This Together 9
  Instructional Notes 9
  Lesson Plan 10

Chapter 3: Who Makes the Rules? 21
  Instructional Notes 21
  Lesson Plan 22

Chapter 4: How Restraints Protect Occupants in Crashes 31
  Instructional Notes 31
  Lesson Plan 32

Chapter 5: Choosing and Using Child Restraints 41
  Instructional Notes 41
  Lesson Plan 42

Chapter 6: Harnessing the Child in the Restraint Correctly 55
  Instructional Notes 55
  Lesson Plan 56
Acknowledgements

The *Operation Kids: Next Generation — Child Passenger Safety Basic Awareness Course* was produced to help create awareness of the importance of child passenger safety (CPS) education and enforcement in preventing child passenger deaths and injuries and to provide basic knowledge on this issue to groups and individuals who can benefit from this information. It would not exist without the cooperation and collaboration of many individuals and organizations. This course has evolved from the initial “Operation Kids—Law Enforcement Child Passenger Safety Program” (“OP Kids LE) training curriculum developed by Robert T. Wall, Master Police Officer (Retired), Fairfax County, VA, Police Department and the late Joel Bolton, Lieutenant, Lake Charles, LA, Police Department for the International Association of Chiefs of Police.

Special thanks to the nurses who worked so hard to revise the original “OP Kids LE” curriculum to make it pertinent to nurses and other health care professionals as the “OP Kids RN” curriculum. They are: Anne Phelan Bowen, RN, MS, Massachusetts; Mary Russell, EdD, RPT, RN, CEN, CCRN, Florida; Connie Smith, RN, Washington; Susan Smuda, RN, New Mexico.

Special thanks also go to the individuals and organizations who worked to revise the original “OP Kids” curriculums to make them more pertinent to child care professionals. “Moving Kids Safely In Child Care” was developed in conjunction with the Healthy Child Care America Campaign, supported by the U.S. Department of Health and Human Services Child Care Bureau and Maternal and Child Health Bureau, and coordinated by the American Academy of Pediatrics.

For the development and distribution of this program, thanks go to the University of North Carolina and members and participating agencies of the National Child Passenger Safety Board.

Appreciation is also extended to the two pilot sites and Instructors for their willingness to conduct pilot classes and to the organizations that participated by sending students to the pilot classes:

**DURHAM, NORTH CAROLINA**

**Instructors**

- Theresa Cromling  
  *Duke University Medical Center*
- Kathy Mellown  
  *Durham County EMS*
- Stan McHenry  
  *Durham Police Department*

**Participating Agencies**

- Duke University Medical Center
- Durham County Health Department
- Durham County Department of Social Services
ASHEVILLE, NORTH CAROLINA

Instructors

• Vickie Whitlatch  
  Mission Hospitals
• Beverly Hopps  
  Mission Hospitals
• Jena Johnson  
  Mission Hospitals

Participating Agencies

• Asheville Police Department
• Buncombe County Department of Social Services
• Enka-Candler Fire Department
• Henderson County Health Department
• North Carolina State Highway Patrol
• Reynolds Fire Department

Generous appreciation is extended to the organizations that provided illustrations and videos for the manuals and accompanying PowerPoint slides:

• Britax USA
• Chicco USA
• Child Passenger Protection Research Program, University of Michigan Medical School
• Children’s Hospital of Philadelphia
• Insurance Institute for Highway Safety
• Maryland Child Passenger Safety Advisory Board
• Montgomery County (Maryland) Fire and Rescue Service
• National Child Passenger Safety Certification Training Curriculum
• North Carolina Division of Public Health, Injury and Violence Prevention Branch
• Safe Kids Guilford County (North Carolina)
• Safe Kids North Carolina
• Safe Ride News Publications
• UNC Highway Safety Research Center

The views expressed herein are those of the authors and not necessarily those of NHTSA. While we have tried to closely review the documents, it is not possible to differentiate the authors’ opinions from fact in every instance, nor do we have the resources or ability to approve or endorse all of the statements in the documents. We can and do point out below some of the more obvious statements with which we disagree or that do not see correct.
Planning and Logistics

Mission

The mission of Operation Kids: Next Generation is to reduce the unnecessary and preventable motor vehicle injuries and fatalities to infants and children through increased education, support for enforcement, promotion of positive engineering advancements, and the promotion of the correct usage of child restraint systems.

GOALS AND OBJECTIVES

The goal of the Operation Kids: Next Generation Child Passenger Safety Basic Awareness Course is to create an awareness of the importance of CPS education and enforcement in preventing child passenger deaths and injuries and to provide basic knowledge on this issue to groups who can benefit from the following information.

Operation Kids: Next Generation will NOT make the participant a child passenger safety expert, but at the conclusion of this class, individuals will be able to:

• Understand and explain their state’s occupant restraint laws in relation to CPS “best practice” recommendations.
• Detect major and potentially harmful CPS and seat belt law violations.
• Identify local, state, and national CPS resources.
• Be able to say, “I don’t know,” when necessary.
• Provide basic instruction to parents on correct child restraint use.
• Understand and support the enforcement of existing child passenger safety statutes.
• Develop effective strategies for assisting parents and other caregivers in the correct use of CPS devices.
• Develop and participate in effective public safety partnerships to increase the effectiveness of CPS programs.
• Assist at a child passenger safety checkup event.

This is NOT a certification course and should not be confused with the National Highway Traffic Safety Administration’s (NHTSA) National Child Passenger Safety Certification Training Program. Participants will NOT be qualified to:

• Serve as a checker (a certified CPS Technician qualified to check a car seat) at a child passenger safety event.
• Set up and coordinate a child passenger safety event or inspection station without guidance of a currently nationally certified Technician.
• Serve as a child passenger safety/seat belt technical expert for the media.
• Operate a child restraint loaner/distribution program.

Participants wishing to provide these community services are encouraged to pursue CPS Technician certification. Child passenger safety certification workshops are designed to teach individuals the technical and instructional skills to serve as child passenger safety resources for their organization, community, or state. In general, it is recommended to take the CPS Technician certification class after working with Certified Technicians in established local programs for a period of time. Remember that increasing the correct use of child restraints involves a variety of groups and individuals. This is an awareness course— not a technical training course.

INSTRUCTORS

This class may be taught by nationally certified CPS Technicians who actively participate in child passenger activities in their community. It also may be taught by nationally certified Technician Instructors. Remember that child safety restraint technology continues to evolve and instructors must stay current. Class instructors should be familiar with and comfortable teaching adults (refer to “Teaching Tips” following on Page viii).

There are no specific requirements for teaching experience in order to be allowed to teach this class, but Technicians who have not taught this Operation Kids: Next Generation class before may want to consider “co-instructing” with a CPS Technician Instructor.

Also, there is no recommended student-instructor ratio, but considering the amount of instruction content, demands of the equipment needed, and setting up and coordinating exercises, it may be beneficial to have at least two instructors teaching this class.

Regardless of your class participants and experience as an instructor:

• Always be aware of and sensitive to the potential cultural, gender, race, age, religious, and community differences in the diversity of your audience (refer to NHTSA’s Diversity Position below).
• Be aware of any physical or learning conditions that may require adaptations for the participant’s participation in the class.
• Plan the length and style of your presentation with consideration for the participant’s transportation availability, child care arrangements during the class, and a safe environment for parking and any outside activities that may be planned.

NHTSA Diversity Position

“The United States is a Nation of people with different ethnic, cultural, and religious backgrounds. NHTSA recognizes the need for a broad range of traffic safety programs and partnerships that reflect the rich diversity of America’s communities and ensure that
everyone benefits from the Agency’s lifesaving work. Given that traffic safety problems affect some communities more than others, NHTSA is committed to working with diverse national and community-based partners to create, implement, evaluate, and market culturally specific programs and materials. These efforts will help raise greater awareness within diverse communities about the importance of traffic safety.”

Some cultural differences to be considered:

- In some Hispanic and Latino communities, the car seat is blessed before it can be used.
- Some African Americans, Hispanics, and Native Americans feel more comfortable holding a child on their lap in vehicles.
- Some minorities will not seek advice from a public authority, such as a police officer.
- Some Arab American communities do not allow the mother to be spoken to if the father is present.
- Think about the diversity within your own community.
- Identify your strategy for reaching your community.
- What are your challenges? What are potential solutions?

PARTICIPANTS

The intended audience for this class is primarily directed toward law enforcement personnel, health care providers, child care providers, and fire and rescue professionals. It is important to remember that military personnel represent many of the same audiences as their civilian counterparts. They frequently have special circumstances to deal with such as transience and the stress it causes families. They also tend to have young children, as well as a lack of personal support systems. These things make them equally important contacts to be participants in your class offerings. (Military personnel and their families can be reached by contacting the base safety offices and/or the family support group offices in order to set up an awareness class for a variety of audiences on any military base.)

This class may lay the groundwork for participants to continue on and become certified as CPS Technicians through the National Child Passenger Safety Certification Training Program.

KEY CONCEPTS

- This is an awareness class that carries no type of certification.
- There is no written test for this class.
- There are no selection, harnessing, or installation skill evaluations in this class.
- There is no end of class checkup event.
• REMEMBER:
  o You cannot cover ALL of the information in the participant manual in
    great detail in the time allotted.
  o You MUST keep it simple and remember that the participants will have
    their manuals for a reference.

Another key concept of the Operation Kids: Next Generation Child Passenger Safety
Basic Awareness Course is that it can be adapted as is most appropriate for the
intended audience and their needs for this information. As a result, you may find
that you have more time available for various subjects than what is suggested in the
sample agenda.

Depending upon the makeup of professionals in your audience, you may be
excluding certain segments of the class. For instance, if there are no health
professionals as participants, there may be no need to cover all of the segments
that deal specifically about health professionals. As another example, if the class is
being taught to law enforcement officers and the goal is to encourage and empower
officers to enforce their state’s occupant restraint laws, additional time can be spent
on the details of relevant laws and enforcement methods while decreasing the
amount of time spent on other topics.

TEACHING TIPS

Guidelines for Making Effective Presentations

Use the following guidelines as you prepare for your presentation. They address
important points that can increase your effectiveness as a presenter and boost your
confidence when you make your presentation. Be sure to allow yourself sufficient
lead-time to:

  • Familiarize yourself with the curriculum chapters.
  • Identify any part of the curriculum that might require additional attention.
  • Become familiar with the timing of the curriculum so you stay on schedule.
  • Gain confidence in your ability to make an effective presentation.

As you review the curriculum chapters and handouts, think about the skills you
learned during your CPS training regarding instruction and good interpersonal
communications. Also, consider what you learned about diversity, respect for
individual differences, and maintaining a positive attitude. Together, this information
provides an excellent foundation for sharing your knowledge of occupant protection
and child passenger safety with a group of interested individuals.

Practice Your Presentation

Although instructors often refer to their materials, you want the students
to think you are talking from a mental outline, rather than reading notes. Therefore, it is imperative that all instructors become familiar with the curriculum materials.

- Focus on instructor preparation—practice as if you were a beginning instructor no matter how many times you teach these classes.
- Study the slides, the student manual, and the instructor notes.
- Study and plan all activities in advance.
- Review the contents of the Instructor CD carefully and follow instructions. Video clips are available for some of the slides. Read the instructions for the slides and videos and be sure the videos will work with the computer and projector that will be used in class.
- Become familiar with the materials in the appendix.
- You also will need to think about and practice transitional phrases for proceeding through the curriculum. For example, after discussing “What Happens in a Crash,” you might say, “Now that we have learned what happens in a car crash, we’re going to discuss how seat belts and child restraints protect occupants in crashes.”

Be Aware of How You Appear to Your Audience

To communicate effectively, you must be aware of and control the language you use, mannerisms you exhibit, sound of your voice, and body language you display. Consider the following elements, as you practice for your presentation.

Language

- Use language appropriate for your audience; be sensitive to cultural differences. Avoid using slang that might have various meanings for different groups.
- Watch word choice; avoid jargon and technical terms.

Mannerisms

- Avoid distracting movements, such as rattling change in your pocket or tossing hair away from your face.
- Avoid repeating the same phrases or words, such as “all right,” “moving right along,” and “okay.”

Voice

- Think about the volume of your voice to make sure everyone can hear you.
- Be aware of the rate at which you speak. If you speak too quickly, people might miss what you are saying. If you speak too slowly, people might ignore what you are saying.
Body Language

- Maintain good posture to convey confidence.
- Establish eye contact with participants. Direct your eyes to people sitting in the front and back as well as those sitting on the sides of the room.

Manage Your Presentation Environment

Select a training facility and negotiate a contract. In-house facilities often work well. Hospitals, law enforcement academies, government agencies, and many businesses have facilities that are designed for training and may be available to you at reduced or no cost.

Ask yourself these questions when selecting a site.

Location and convenience

- Will students and the instructor (team) be interrupted by other activities at the facility?
- Is the facility clean, in good repair, and professional in appearance?
- Can the classroom be locked at night or is secure storage available nearby?
- Is food/meal preparation available onsite? If not, are there other options (catering, nearby restaurants)?
- Does the parking lot have space available for hands-on sessions (be sure to consider safety issues)?
- Is the parking lot readily accessible for hands-on student activities?
- Is overhead cover available to protect students from inclement weather?

Classroom size

- Is the classroom large enough to accommodate students, materials and teaching activities?
- Where will the projector and computer be placed and plugged in?
- Can all participants see the screen and instructor?

Vehicle storage

- Is there access to a covered parking area where vehicles can be stored and hands-on demonstrations conducted?
- Is there a safe area to conduct demonstrations?
- Is there a backup plan for adverse weather?

Equipment

- Who is providing the audiovisual equipment?
- Is there a rental charge for equipment?
Seating arrangements, where you stand, and your use of a microphone are among the many factors that influence the receptiveness of your audience. Whenever possible, arrive early to make sure the room temperature is comfortable, there is adequate seating, and the microphone is working. Also, whenever possible, greet people as they enter the room. This will make you more relaxed and help create a friendly environment for your presentation.

The answers to the following questions can help you manage your presentation environment, and subsequently improve the overall effectiveness of your presentation.

**Approximately how many people will attend the presentation?**

- Make approximately 10 extra copies of any handouts to account for additional attendees.

**What type of meeting room setup is available and will you have access to the room before your presentation?**

- Find out the size of the room and its features. Is it:
  - An open room with moveable chairs?
  - An open room with chairs around tables?
  - A conference room with chairs around a conference table (not moveable)?
  - An auditorium with permanent seating and a stage?

- For smaller groups:
  - In rooms with moveable chairs, consider placing the chairs in a circle.
  - In rooms with tables and chairs, consider placing the tables in a “U” shape that allows you to stand in the opening of the “U.”
  - In a conference room, consider whether it is appropriate for you to sit at the table with the attendees.

- For larger groups:
  - In rooms with moveable chairs, arrange the chairs to encourage people to sit together.
  - In rooms with tables and chairs, position chairs to make sure that everyone can see you.
  - If you are in an auditorium, encourage people to sit together in the front middle section closest to where you will be standing.

**How will handouts be distributed?**

- In addition to other considerations, you will want to decide how you will distribute Participant Manuals and any other handouts you may have:
  - Place them on the chairs or tables before people arrive.
° Hand them to people as they enter the room.
° Hand them out as you introduce yourself.

**Who will assist you with your presentation?**

- If this is the first time you have taught the *Operation Kids: Next Generation* course as a CPS Technician, you may want to consider recruiting and “co-instructing” with an experienced CPS Technician Instructor.
- Considering the amount of instruction content, demands of the equipment needed, and activities, it may be beneficial to have two Technicians/Instructors teaching this class. The lead instructor will need to decide how many participants will be allowed to enroll in your class.

**Recruiting Participants Depends on Class Type and limitations**

- Determine the participants you will be trying to reach with this class (law enforcement, health care providers in hospital setting, a mixture of attendees, etc.).
- Send letters to the heads of agencies (e.g. police chiefs) telling them about the class and why it would be useful for their employees (optional: a “Sample Operation Kids: Next Generation Class Information Sheet and Schedule” is included at the end of this section and on the Instructor CD).
- If there is an administrator for the class, contact him/her to:
  ° Advertise class availability and to recruit appropriate participants
  ° Send welcome letters with local details (e.g., directions) to registrants (optional: a “Sample Operation Kids: Next Generation Class Information Sheet and Schedule” is included at the end of this section and on the Instructor CD).
  ° If needed, find a caterer and order food, drinks, etc.
  ° Find out how many participants will be planning to attend the class.
- If there is no class administrator to work with, the instructor team will have to handle these duties.

**Class Materials**

Written materials for the *Operation Kids: Next Generation Child Passenger Safety Basic Awareness Course* might be available through your state; however, the instructional team should be prepared to provide all materials for the course. Please give your state at least 30 days advance notice of the courses you intend to instruct. Course materials also are available to download at [cpsboard.org](http://cpsboard.org).
Instructor Packet

- Instructor Guide — One (1) copy of the Instructor Guide will be furnished upon request to the State CPS Coordinator.
- Participant Manuals — One (1) copy per registered participant will be furnished upon request to the State CPS Coordinator.
- Instructor CD — One (1) copy of the Instructor CD will be furnished along with each Instructor Guide. The CD supplied to Instructors should contain all written materials needed to conduct the class including:
  - PowerPoint slide presentation
  - PDF-formatted documents that can be used to print copies
  - Participant Manual — in case of “emergency”
  - Class Roster
  - Classroom Exercise Instructions
  - Sample Agenda
  - Class Verification of Attendance Form — make copy for each participant
  - Class Evaluation Form — make copy for each participant
  - Appendices

Participant Packet

- Participant Manual — one copy per participant (includes Appendices)
- The host agency or individual instructor(s) will be responsible for providing the following for each participant:
  - Class Agenda
  - Updated copies of appropriate state seat belt, child restraint, and booster seat laws
  - Participant Class Evaluation Form
  - Class Verification of Attendance Letter or Form — make copy for each participant

Equipment Needed

Make sure you have the necessary equipment:

- LCD projector
- Laptop with CD-ROM (speakers may be necessary for videos)
- Extension cord/surge protector
- Locking clips
- Pool noodles/towels
• Sample non-regulated products (e.g. padding, belt tightener)
• Demonstration tables
• Direction signs for posting outside and inside the building
• Duct tape
• Index cards (for hands-on exercise)
• Name tags
• Local CPS resource lists
• Latest recall list — Will need a few copies to pass around — they will NOT be given to participants to take home with them (you do not want participants to use outdated recall list in the future)
• Demonstrator seat, such as a Dial-a-Belt, for classroom demonstration
• Sample Child Restraints (CRs) — minimum suggested:
  ◦ 2 — Infant Only CR [one with base, one w/o base]
  ◦ 2 — Convertible CRs
  ◦ 2 — Forward-Facing (FF)-only CR [preferably one with high-weight harness system and one Combination CR]
  ◦ 1 Backless Booster
  ◦ 1 High Back Booster

• Sample CRs — Additional notes:
  ◦ CRs should have instruction booklets, intact labels, and their original parts.
  ◦ The number of CRs necessary for an effective and efficient training will vary. When determining child restraints needed for class, instructor(s) should consider:
    – Number of participants
    – Equipment needed to complete all hands-on practice and skills and experiences within allotted time

Optional (but recommended) Equipment/Materials:
• Class/Instructor evaluation forms (strongly recommended)
• Easel board, paper, and markers
• LATCH manual and order forms
• Sample vehicle manuals
• Table tent cards for participant names
INSTRUCTIONS FOR TRAINING EXERCISES

Instructor’s Guide for Training Exercise #1: Selection of Appropriate Child Restraints

In this exercise, each participant (or team of two participants) will be given a “child” with a description of the child’s age and weight. Each participant (or team) must identify the most appropriate child restraint system for his or her “child” based on the information provided and then elaborate on the reasons for their choice of the child restraint.

Materials Needed:

• Index cards, Infant Only CRs, Convertible CRSs, Forward-Facing CRs, Booster seats

Instructions:

• Write descriptions of a child’s age and weight on an index card. Sample descriptions are provided below.

• Pass out a “child” written on the card to each member of the class or to each team.

• Each participant/team must then select the appropriate child restraint system based on the age and weight of their “child” and elaborate on the reasons for their choice of the child restraint. Encourage participants to choose and explain child restraint choices based upon “best practice” taught in class. Note that the “children” listed below present fairly clear-cut choices for which type of restraint they should be in.

Sample Descriptions of Children:

<table>
<thead>
<tr>
<th>Child #1</th>
<th>Child #2</th>
<th>Child #3</th>
<th>Child #4</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Months</td>
<td>1 Month</td>
<td>10 Months</td>
<td>10 Months</td>
</tr>
<tr>
<td>18 Pounds</td>
<td>11 Pounds</td>
<td>25 Pounds</td>
<td>17 Pounds</td>
</tr>
<tr>
<td>Child #5</td>
<td>Child #6</td>
<td>Child #7</td>
<td>Child #8</td>
</tr>
<tr>
<td>8 Months</td>
<td>10 Months</td>
<td>12 Months</td>
<td>2 Years</td>
</tr>
<tr>
<td>26 Pounds</td>
<td>20 Pounds</td>
<td>22 Pounds</td>
<td>25 Pounds</td>
</tr>
<tr>
<td>Child #9</td>
<td>Child #10</td>
<td>Child #11</td>
<td>Child #12</td>
</tr>
<tr>
<td>2 ½ Years</td>
<td>2 Years 2 Months</td>
<td>1 ½ Years</td>
<td>1 Year</td>
</tr>
<tr>
<td>40 Pounds</td>
<td>28 Pounds</td>
<td>18 Pounds</td>
<td>17 Pounds</td>
</tr>
<tr>
<td>Child #13</td>
<td>Child #14</td>
<td>Child #15</td>
<td>Child #16</td>
</tr>
<tr>
<td>1 Year 1 Month</td>
<td>5 Months</td>
<td>2 Years</td>
<td>3 Years 8 Months</td>
</tr>
<tr>
<td>21 Pounds</td>
<td>12 Pounds</td>
<td>30 Pounds</td>
<td>38 Pounds</td>
</tr>
<tr>
<td>Child #17</td>
<td>Child #18</td>
<td>Child #19</td>
<td>Child #20</td>
</tr>
<tr>
<td>3 Years 9 Months</td>
<td>1 Year 7 Months</td>
<td>2 Years 2 Months</td>
<td>4 Years</td>
</tr>
<tr>
<td>39 Pounds</td>
<td>23 Pounds</td>
<td>20 Pounds</td>
<td>48 Pounds</td>
</tr>
<tr>
<td>Child #21</td>
<td>Child #22</td>
<td>Child #23</td>
<td>Child #24</td>
</tr>
<tr>
<td>4 Years 2 Months</td>
<td>5 Years</td>
<td>5 Years 2 Months</td>
<td>5 Years 6 Months</td>
</tr>
<tr>
<td>40 Pounds</td>
<td>52 Pounds</td>
<td>53 Pounds</td>
<td>58 Pounds</td>
</tr>
</tbody>
</table>
Instructor’s Guide for Training Exercise #2: Identifications of Belt Systems and Installations of Child Restraints

In this exercise, participants will work as a team with the instructor in order to demonstrate simple identifications and installations with belt systems, LATCH, tether anchors, and air bags out in the vehicles.

The instructor will need to have identified the various types of belt systems, LATCH, tether anchors, and air bags that are available prior to this exercise. This can be done by verifying the systems during a scheduled class break time or by the assistance of a co-instructor. It will be important to identify, in the participant’s vehicles, which systems are available as good examples for demonstration.

During the activity, the Instructor can identify some of the different seat belt systems, LATCH, tether anchors, and air bags.

The Instructor may also choose to demonstrate some child restraint installations and then invite the participants to test for snugness to demonstrate what a correct installation feels like.

This is not meant to be a structured activity in that the participants will not be working from a checklist that must be “signed off” by the instructor. Instead, it should be a brief opportunity for participants to see a few of the different vehicle restraint systems that are in the cars and not just on the demonstrator seat in the classroom and see how child restraints are installed correctly. Remember that this IS NOT meant to be an installation exercise.

Instructor’s Guide for Training Exercise #3: “What’s Wrong with This Picture?"

This photographic exercise follows the segment taught about the misuse of child restraints. It is intended to allow the class to see examples of common and easily identifiable forms of CR or seat belt incorrect use.

The presentation is part of the PowerPoint slide show. Students are asked to look at the pictures while the instructor points out and discusses the misuses demonstrated in the photos with the class.

SAMPLE AGENDA

As noted earlier, the goal of the Operation Kids: Next Generation Child Passenger Safety Basic Awareness Course is to do just that—to create a basic awareness of the importance of CPS education and enforcement in preventing child passenger deaths and injuries and to provide basic knowledge on this issue to groups who can benefit from basic CPS information. For this reason, the class has been developed such that it can be taught in less than one day.

A sample agenda follows below. This sample agenda is for a class lasting 6 hours. The agenda is also included on the Operation Kids: Next Generation Instructor CD.
Instructors can use the sample agenda to plan their upcoming *Operation Kids: Next Generation* classes and instructors are welcome to adjust the agenda to fit their needs and the needs of the participants. Unlike the National Child Passenger Safety Certification Training Program, there is no requirement that all of the information in the Participant Manual be covered during the class, so it can be adjusted as needed.

**Sample 6-Hour Agenda (Including Lunch)**

<table>
<thead>
<tr>
<th>Start-End</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00 – 9:15</td>
<td>Welcome and Introductions</td>
</tr>
<tr>
<td>9:15 – 9:45</td>
<td>Chapter 1: Introduction and Course Objectives</td>
</tr>
<tr>
<td>9:45 – 10:05</td>
<td>Chapter 2: Child Passenger Safety — We’re All in This Together</td>
</tr>
<tr>
<td>10:05 – 10:15</td>
<td>Break</td>
</tr>
<tr>
<td>10:25 – 10:40</td>
<td>Chapter 4: How Restraints Protect Occupants in Crashes</td>
</tr>
<tr>
<td>10:40 – 11:25</td>
<td>Chapter 5: Choosing and Using Child Restraints</td>
</tr>
<tr>
<td>11:25 – 11:40</td>
<td>Exercise #1: Selection of Appropriate Child Restraints</td>
</tr>
<tr>
<td>11:40 – 12:25</td>
<td>Chapter 6: Harnessing the Child in the Restraint Correctly</td>
</tr>
<tr>
<td>12:25 – 1:00</td>
<td>Lunch</td>
</tr>
<tr>
<td>1:00 – 1:45</td>
<td>Chapter 7: Installing Child Restraints in Vehicles</td>
</tr>
<tr>
<td>1:45 – 2:00</td>
<td>Exercise #2: Identifications of Belt Systems and Installations of Child Restraints</td>
</tr>
<tr>
<td>2:00 – 2:15</td>
<td>Chapter 8: Child Restraint and Seat Belt Misuses</td>
</tr>
<tr>
<td>2:15 – 2:25</td>
<td>Break</td>
</tr>
<tr>
<td>2:25 – 2:35</td>
<td>Chapter 9: Child Passenger Safety in Other Vehicles</td>
</tr>
<tr>
<td>2:35 – 2:50</td>
<td>Exercise #3 “What’s Wrong with This Picture?”</td>
</tr>
<tr>
<td>2:50 – 3:20</td>
<td>Chapter 10: Conclusion — Where Do We Go From Here?</td>
</tr>
<tr>
<td>3:20 – 3:40</td>
<td>Discuss Local Child Passenger Safety Programs, Services and Resources</td>
</tr>
<tr>
<td>3:40 – 4:00</td>
<td>Wrap-Up (Q&amp;A, Class Evaluation, Attendance Certificates, etc.)</td>
</tr>
</tbody>
</table>
Sample OP Kids Next Generation Class Information Sheet and Schedule

Child Passenger Safety Basic Awareness Class

DATE HERE

Heartland County Police Training Center

Sponsored by the Heartland Safety Belt Coalition

Intended Audience: The Operation Kids: Next Generation—Child Passenger Safety Basic Awareness Course was developed to create an awareness of child passenger safety and the importance of making child passenger safety enforcement and education a routine part of the daily duties of police officers as well as health care, EMS, fire and rescue personnel, and child care providers. Participants will learn how critical their role is in promoting child passenger safety and will learn to become more effective child passenger safety advocates and educators. Class participants will enhance their knowledge of the resources available for child passenger safety, including information sources, materials, and public assistance programs.

Class Goals: This is NOT a certification course and should not be confused with the NHTSA National Child Passenger Safety Certification Training Program. Operation Kids: Next Generation will NOT make you a child passenger safety expert, but at the conclusion of this class, individuals will be able to:

- Understand and explain their state’s occupant restraint laws as it relates to “best practice” recommendations
- Detect major and potentially harmful CPS and seat belt law violations
- Identify local, state, and national CPS resources
- Provide basic information to parents on correct child restraint use
- Understand and support the enforcement of existing child passenger safety statutes

Registration: Provide information on the registration process here.

Fees: Provide information on any registration fees here.

Location: Heartland County Police Training Center, State Highway 123 just west of downtown Heartland. See the map on the reverse for detailed directions. Free parking is available in the visitor parking lot.

Dress: Dress comfortably for the class. Pants and sportswear are appropriate for the entire day. Some of the class exercises may include working with child restraints and seat belts in cars. Remember to bring appropriate clothing and outerwear based on weather conditions on the day of the class.

For More Information: Provide a name, phone number, email address, and website (if available) for additional information.
Sample Letter of Confirmation for OP Kids CPS Basic Awareness Class

Registrant’s Name and Address

Date

Dear ____________________:

Please read this letter carefully! It will serve to prepare you for your upcoming Operation Kids: Next Generation Child Passenger Safety Basic Awareness Course from BEGIN TIME to END TIME on DATE.

As a reminder, this is NOT a certification course and should not be confused with the NHTSA National Child Passenger Safety Certification Training Program. Operation Kids: Next Generation will NOT make you a child passenger safety expert or provide participants with any type of certification. Verifications of attendance can be provided to participants who need them for their agency’s records.

Location: Provide detailed information and special instructions about the class location such as: Heartland County Police Training Center, State Highway 123 just west of downtown Heartland. See the map on the reverse for detailed directions. Free parking is available in the visitor parking lot. Please enter through the front entrance marked “Visitors.”

Dress: Dress comfortably for the class. Pants and sportswear are appropriate for the entire day. Some of the class exercises may include working with child restraints and seat belts in cars. Remember to bring appropriate clothing and outerwear based on weather conditions on the day of the class.

Class Materials: You will be given an Operation Kids: Next Generation Child Passenger Safety Basic Awareness Course Participant Manual during class. No other materials are needed for this class.

Lunch: Lunch will be provided in the classroom for a cost of $______. If you have special food needs, please contact ______________ at ____________. Unless otherwise arranged, all class members will receive the same meal choices.

For More Information: If you have any questions about the class, the certification process, or travel logistics, please feel free to contact me at ______________. I’m looking forward to seeing you at ____________.

Sincerely,

Signature

Full Name

Title
Chapter 1:
Introduction and Course Objectives

Instructional Notes

EQUIPMENT NEEDED

• Instructor CD, laptop computer, and projector
• Tags or envelopes for identifying sets of keys for participant and instructor vehicles

HANDOUTS NEEDED

• Class agenda
• Participant Vehicle ID Form
• Class Roster forms
• Class and Instructor Evaluation forms
• Refer to following materials found in the Participant Manual Appendix:
  ◦ Child Occupant Protection Glossary
  ◦ English to Spanish Glossary
  ◦ Spanish to English Glossary

EXERCISES

None

TIME ALLOTTED ON RECOMMENDED AGENDA

30 minutes
Lesson Plan

WELCOME, INTRODUCTIONS, AND ADMINISTRATIVE DETAILS

Welcome, Introductions, and Administrative Details

Welcome and Introductions

- Introduce instructor team.
- Introduce and/or recognize class administrator(s) (if any).
- Introduce and/or recognize special guests (if any).
- Introduce or recognize/acknowledge and thank sponsors.

Review Administrative Details

- Fire exits
- Restrooms
- Phones
- Lunch and breaks
- Pagers & cell phones off

Conduct Activity 1 — Meet your neighbor

Ask each participant to tell:

- Their name
- Agency/company
- Reason for attending
Why Are We Here?

- Approximately 55,000 children (under age 5) are injured in crashes each year.
- An average of 6 children (0–14) in the US are killed and over 600 injured each day in motor vehicle crashes (MVCs).
- In 2011, 32,367 Americans were killed in traffic crashes.
- Another 2,220,000 were injured in police-reported traffic crashes.
- Only diseases like cancer, heart disease, and stroke kill more people than MVCs.
- Injury is the leading cause of death to children over the age of 1.
  - Death due to highway fatalities is just the “tip of the iceberg.”
  - Many more injuries occur than deaths each year.
  - Some have life-long effects and can be very costly.
- Child restraints, seat belts, and air bags save an average of 17,000 lives each year.
- Since 1975, more than 9,800 lives have been saved by child restraints (CRs).

Why Are We Here?

- Increase the child passenger safety (CPS) advocacy level of interested individuals
- Children are transported more often than ever before due to:
  - More parents working
  - More use of day care, preschool, and after-school care
  - More community activities, in which children participate
- Increase in children being transported = Increased risk of being in a crash
- Issues needing advocacy:
  - Enforcement of legislation and/or educational programs; making sure that children are placed in the back seat— the safest place for children to ride
  - Using the best restraint system for the child and using it correctly
  - Encouraging parents and caregivers to also buckle up correctly on every ride regardless of their seating position
Mission of This Class

The mission of *Operation Kids: Next Generation* is to reduce the unnecessary and preventable motor vehicle injuries and fatalities through:

- Increased education
- Support for enforcement
- Promotion of positive engineering advancements
- Promotion of the correct usage of child restraint systems

Goals and Objectives of This Class

- Create an awareness of the importance of CPS education and enforcement in preventing child passenger deaths and injuries.
- To provide basic knowledge on this issue to groups who can benefit from the following information.
- At the conclusion of this class, individuals will be able to:
  - Understand and explain their state’s occupant restraint laws in relation to CPS “best practice” recommendations.
  - Detect major and potentially harmful CPS and seat belt law violations.
  - Identify local, state, and national CPS resources.
  - Be able to say, “I don’t know,” when necessary.
  - Provide basic information to parents on correct child restraint use.
  - Understand and support the enforcement of existing child passenger safety statutes.
  - Develop effective strategies for assisting parents and other caregivers in the correct use of CPS devices.
  - Develop and participate in effective public safety partnerships to increase the effectiveness of CPS programs.
  - Assist in the development of positive steps toward engineering, design, and recall status of child restraint systems
  - Assist at a child passenger safety check up event

KEY CONCEPT: This Is NOT a Certification Course
• Should not be confused with the NHTSA National Child Passenger Safety Certification Training Program.

• Participants will NOT be qualified to:
  ° Serve as a checker (a certified CPS Technician qualified to check a car seat) at a child passenger safety event.
  ° Set up and coordinate a child passenger safety event or inspection station without guidance of a nationally certified Technician.
  ° Serve as a child passenger safety/seat belt technical expert for the media.
  ° Operate child restraint loaner/distribution program.

• Participants wishing to provide these community services are encouraged to pursue CPS Technician certification.

• If interested, recommend taking the Technician certification class after working with Certified Technicians in established local programs for a period of time.

• Remember, this is an awareness class, not a technical course.

**INSTRUCTOR NOTE:**

**EMPHASIZE:** This is a basic awareness course — there is no certification associated with attending this class.

Child Passenger Safety Is a “Moving Target”

The target audience is continually changing.

• The parents who need information about infant seats and how to use them correctly today are not the same group we were talking to last year.

• The parents we talked to last year about infant seats are now struggling to properly restrain a toddler.

Technologies constantly change.

• CR designs are constantly being improved too:
  ° New CRs provide increased safety in a crash.
  ° New CRs are typically easier for parents to install and use correctly.

• Vehicles and restraint systems are constantly changing.
It is important to stay updated. Examples:

- A rear-facing infant seat must never be placed in front of an active air bag.
- Variety and types of seat belt systems in vehicles today can be confusing and ever-changing.
- Federal safety standards also have changed in recent years.
- LATCH technology was introduced in both the vehicle and child restraints.
- NHTSA now issues ease of use ratings for CRs.
- Product recalls can be undertaken by the manufacturer or NHTSA.

Focus and Purpose of the Basic Awareness Course

The focus of this course is primarily on child restraints (sometimes also referred to as “child safety seats” or “car seats”).

We will also discuss:

- Seat belt use for older children
- Passenger safety in other types of vehicles
- The need for accurate information on the transition from child restraints to seat belts

Injury prevention is a family issue.

- The safety of all occupants should be assured:
  - Passenger-to-passenger injuries
  - Adults should act as positive role models by always buckling up

Participants will not know everything about CPS and CRs by the end of this training class.
However, you will know enough to:

- Help convince people to correctly use child restraints and seat belts for their children.
- Recognize the limits of their knowledge and know when to say, “I don’t know, but I’ll find out.”

Participants will learn:

- Where to find the information that is needed.
- That many issues may not have clear, concrete solutions.

**Ultimate Focus of Class**

This class is about more than the child restraints and seat belts. It’s about children.

- Children who are passengers in motor vehicles.
- Children who are riding with adults who may not be aware of the dangers of a crash.
- Children who need and deserve protection from the devastating effects of motor vehicle crashes.
Chapter 2:
Child Passenger Safety — We’re All in This Together

Instructional Notes

**EQUIPMENT NEEDED**
Instructor CD, laptop computer, and projector

**HANDOUTS NEEDED**
None

**EXERCISES**
None

**TIME ALLOTTED ON RECOMMENDED AGENDA**
20 minutes
Lesson Plan

INTRODUCTION

This segment of the class is designed to give tools needed to actively promote CPS laws and education practices to:

- Law enforcement officers
- Health care providers
- Child care providers
- Fire & Rescue professionals
- All advocates

These tools should ensure a safe ride every time for all children.

Balancing Demands

- One of the largest problems is keeping a balance in everyday issues that compete for your attention.
- Traffic safety sometimes takes a back seat to other issues that compete for attention in everyday duties.
- Even in normal traffic safety-focused programming, CPS can be overlooked.

Integrating Child Safety Seat Enforcement and Education

What does this mean?

- Increasing CPS enforcement and education can be accomplished without detracting from other duties.
- There is no need for specialized squads or overtime to save children’s lives.
- Be aware of the magnitude of the problem.
- Know how effective a professional’s actions can be.
Integrating CPS education and enforcement into daily routine:

- When casually glancing at a CR, ask yourself:
  - Is the harness securing the child?
  - Is the seat belt holding the car seat?
  - Is the CR facing the right direction for the age and size of child?

Aren’t there others out there doing this already?

- Traffic safety and advocacy for enforcement of traffic laws is up to ALL of us.
- After completing this basic awareness course, you will find there is no one else better equipped to do this job.

Our Roles in Engineering, Education, and Enforcement

The three E’s of traffic safety are:

- Engineering
- Education
- Enforcement

Ask Question #1: True or False

Law enforcement officers, health care providers, child care providers, and fire and rescue professionals have no role to play in the engineering of CRs.

Answer: False

- We all have significant roles to play in the engineering of child restraints.
- It does not take a Certified Technician to play a role.
How Can We Be Involved in Engineering?

The first “E” is engineering (refers to the design of child restraints).

- Child restraints are designed, tested, and certified by the manufacturers to meet the requirements of FMVSS 213 (a government safety standard).
- Seats are routinely and randomly tested by engineers at the National Highway Traffic Safety Administration (NHTSA).
- The real test of a CR comes out in the field with a real child involved in a real crash.
  - Officers and fire and rescue personnel are the ones who respond to the scene.
  - Health care providers also see the results of the real crash and can assist the engineers and child restraint manufacturers in determining whether or not the child safety seat performed as designed.
  - Your role is to:
    - Note any failures and successes observed.
    - Report them so that corrective measures can be taken (call the NHTSA Auto Safety Hotline at 1-888-DASH-2-DOT).

Data collected in the course of duty can be key to engineering efforts.

- Many federal, state, and private agencies study motor vehicle crashes and crash data to document the effects of:
  - Use
  - Correct use
  - Non-use
  - Misuse

- Key data includes:
  - Accident reports
  - EMS run reports
  - Hospital records

- It is critical that these reports and records be completed as accurately as possible.
Child care personnel can help parents understand the vital importance of having CRs registered with their car seat’s manufacturer.

- Recalls are not uncommon.
- Parents will not be notified unless they have registered their CR.
  - Call the manufacturer directly to register.
  - Contact the NHTSA hotline (1-888-DASH-2-DOT) to obtain a registration form and/or check for a recall.

**How Can We Be Involved in Education?**

The second “E,” **education**, involves a very large and diverse group of people and organizations.

- Police agencies
- Health care providers
- Child care providers
- Fire and rescue professionals
- Safety and health coalitions
- Health departments
- Military personnel
- Transportation departments
- Media outlets
- Commercial entities

All are important in increasing the correct use of vehicle restraint systems.

Military personnel represent many of the same audiences as their civilian counterparts but frequently have special circumstances.

- They are important contacts in the field of CPS advocacy.
- Military personnel and their families can be reached by contacting the Base Safety Offices and/or the Family Support Group Offices in order to set up contacts for a variety of audiences on any military base.

**Be Aware of Cultural Differences**

Some cultural differences to be considered:

- In some Hispanic and Latino communities, the car seat is blessed before it can be used.
• Some African Americans, Hispanics, and Native Americans feel more comfortable holding a child on their lap in vehicles.
• Some minorities will not seek advice from a public authority such as a police officer.
• Some Arab American communities do not allow the mother to be spoken to if the father is present.

Think about the diversity within your own community.

• Identify your strategy for reaching your community.
• What are your challenges? What are potential solutions?

Ask Question #2: TRUE OR FALSE

Police educate people with a pen and a ticket book (“Press hard—five copies”).

Answer: TRUE

• Enforcement is a form of education that alters behavior.
• This may be the only form of education that works for some people.

Enforcement Is a Form of Education That Alters Behavior

Law enforcement agencies across the country have long been active in CPS education.

Police involvement has taken many forms including:

• Training for officers
• Seminars for new parents and caregivers
• Informational displays at fairs and festivals
• Media interviews about CPS
• Public service announcements reminding motorists to restrain their children
• Active participation in injury prevention coalitions
Active Support of Law Enforcement Professionals Is Critical

- Police officers have the respect of both adults and children.
- They will listen in order to keep their children safe.
- It is important to give the correct information at all times.
- Accurate crash investigations matter! This information is used to:
  - Pinpoint engineering problems (e.g., problem intersections or sections of roadway).
  - Affect the attitude of the public through media stories.
  - Determine whether a child restraint did what it was supposed to do or was the crash so severe that even a correctly used child restraint was not able to prevent injuries.

Ask Question #3: TRUE OR FALSE

Health care providers have many opportunities to educate through “teachable moments.”

Answer: TRUE

Health care providers across the country have long been active in CPS education.

Their involvement has taken many forms including:
- Training for nurses, physicians, technicians, aides, etc.
- Seminars for new parents and caregivers
- Informational displays at fairs and festivals
- Media interviews about CPS
- Public service announcements reminding motorists to restrain their children
- Active participation in injury prevention coalitions
Active Support of Health Care Providers Is Critical

Parents and caregivers view nurses as credible health care professionals.

They must use language and terminology that is understandable by caregivers.

Health care providers of all sorts—technicians, aides, physicians, physician assistants, nurses, etc., have valuable roles to play in CPS advocacy.

- They can increase the way parents receive injury prevention messages.
- They must have accurate and current information to give caregivers and parents
- Parents will listen to help protect their children.

Ask Question #4: TRUE OR FALSE

Child care providers have no role in the education of parents and caregivers about child restraint systems.

Answer: FALSE

Child care providers across the country have been active for years in many forms of education for parents and caregivers.

Parents entrust their children into their care.

Child care providers have unique and important times to advocate for effective CPS education:

- Carpool times
- Pickup and delivery
- Emergency-related transportation
- Errands
When deciding whether or not to transport a child, child care providers must consider:

- Parent’s wishes
- Legalities
- Regulations
- Moral and ethical issues
- Best interest of the child

Ask Question #5: TRUE OR FALSE

Fire and rescue personnel have a limited partnership in the education of their community when it comes to child passenger safety.

Answer: FALSE

- Fire and rescue personnel have a unique view as first responders to vehicle crash scenes.
- They see the devastation that occurs when passengers are either incorrectly secured or not restrained at all.
- It may be too late to initiate education at crash site.
- Positive reinforcement for those who did use CRs correctly will go a long way towards correct use again.
- They may pass information on to other families.

Fire Stations Are Excellent Sites for CR Checkup Events or Permanent Inspection Stations

- Fire stations work with certified CPS Technicians to organize and run regular events and/or inspection stations.
- These events educate families one-on-one about consistent and correct CR use.
Fire and Rescue Personnel’s Involvement in CPS Education Can Take Many Forms

- Training for personnel
- Seminars for new parents and caregivers
- Informational displays at fairs and festivals
- Media interviews about CPS
- Public service announcements as reminders to buckle-up

Ask Question #6: TRUE OR FALSE

Only certified CPS Technicians can play a role in providing education in their communities when it comes to child passenger safety.

Answer: FALSE

The Role of Advocates

- Non-certified advocates can provide information on:
  - The need for child restraints
  - Need to choose and use them correctly
- Certification recommended for “hands-on” assistance

Why Should We Be Involved in Enforcement?

The third “E” is enforcement.

- Enforcement involves the police with community support.
- Public information and education campaigns are only as effective as the enforcement that is provided.
- Active enforcement sends a very real message to the public.

Public safety professionals know and see the devastation of crashes.
Ask Question #7: TRUE OR FALSE

As a law enforcement officer, nothing you can do has as much potential to save lives and prevent injury for children as actively and aggressively enforcing CPS laws.

Answer: TRUE

• Public information and education campaigns are only as effective as the enforcement that law enforcement agencies provide.

• Active enforcement sends a message to the public that the use of CRs and seat belts is taken seriously.

Some Officers May Be Reluctant to Enforce Their State’s CPS Laws

• May not be familiar with legislation
• May not be familiar with car seats
• Officers do not have to be an expert or CPS certified to be able to enforce the most egregious violations:
  ° Child not buckled in at all
  ° Child just sitting in car seat with no harness around him/her

Ask Question #8: TRUE OR FALSE

Professionals such as health care providers, child care providers, fire and rescue personnel and other CPS advocates outside of law enforcement have no role in effectively enforcing child passenger safety and seat belt laws

Answer: FALSE — ALL professions have important roles in enforcement.
The Most Effective Enforcement Is Done with Community Support

• Most parents respond to education.

• A segment of the population will respond only to active and aggressive enforcement.
  - Some have not been reached by educational efforts.
  - Others are simply forgetful.
  - Some do not consider the chances of being involved in a serious crash worthy of the effort to buckle their children or themselves up.

• Law enforcement agencies are more likely to actively enforce CPS and seat belt laws if the public demands and supports it.

• Enforcement agencies effectively and actively enforce laws by integrating it into their daily routines.

• Expressions of support for enforcement can come from:
  - Medical community
  - Fire and rescue personnel
  - Child care providers
  - Parents

REVIEW KEY CONCEPT...

Law enforcement, health care providers, child care providers, and fire and rescue personnel all play integral parts in the roles of CPS engineering, education, and enforcement.
Chapter 3:

Who Makes the Rules?

Instructional Notes

EQUIPMENT NEEDED

Instructor CD, laptop computer, and projector

HANDOUTS NEEDED

• Copies of current recall list
• State-specific child restraint and seat belt law written materials

EXERCISES

None

TIME ALLOTTED ON RECOMMENDED AGENDA

10 minutes
Lesson Plan

INTRODUCTION

- Federal Motor Vehicle Safety Standards are set by the National Highway Traffic Safety Administration (NHTSA).
- Individual states pass laws regarding:
  - Who is required to be restrained
  - In what manner they are to be restrained
  - Under which circumstances

INSTRUCTOR NOTE:

Relevant state laws will be discussed at the end of this chapter.

Role of National Highway Traffic Safety Administration (NHTSA)

- Agency within the U.S. Department of Transportation focused on occupant safety
- Responsible for setting and enforcing safety standards for motor vehicles and motor vehicle equipment (such as CRs)
- Its mission is to:
  - Save lives
  - Prevent injuries
  - Reduce traffic crash costs
Basic Functions of NHTSA and How They Relate to CPS

Education

- Provides variety of traffic safety training programs (like this one!).
- Produces brochures, posters and PSAs.
- Provides statistics and fact sheets (can get from nhtsa.gov and safercar.gov).
- Has 10 regional offices working closely with state and local agencies in carrying out safety programs—each regional office has a CPS coordinator (these can be found at nhtsa.gov).

Enforcement

- Provides funding to promote occupant protection by working with law enforcement (e.g., “Click It or Ticket”).
- Enforces standards—selects certain products on the market to see if they meet Federal standards.

Research

- Conducts and/or funds research to demonstrate programs related to traffic safety.
- Conducts and/or funds research to evaluate programs related to traffic safety.

Compliance Testing

- NHTSA does not certify CRs before they go to market.
- CR manufacturers self-certify their own product as meeting NHTSA performance standards.
- NHTSA randomly tests these products for compliance.

Defect Investigation and Recalls

- NHTSA tests products reported to have potential problem.
- If a real problem is identified, a recall may follow.
- Manufacturers can issue recall before involving NHTSA.

“Recall List” Available Through NHTSA or Other Organizations

- Must know model number and date of manufacture to determine recall.
- CR missing labels may be dangerous—cannot determine recall.
• CR registration is important.
  ◦ Registration card with new CR
  ◦ Through NHTSA website
  ◦ Through manufacturers’ websites

• It is very important to pay attention to recall notices but requires access to up-to-date recall lists.

Recalls can be issued for ANY failure to meet Federal Motor Vehicle Safety Standard (FMVSS) 213—Established and enforced by NHTSA.

• Many recalls do not affect crashworthiness.
• Many recalls are for reasons related to:
  ◦ Labeling requirements
  ◦ Flammability of the upholstery or padding
  ◦ Parts that pose a choking hazard

• All recalls should be corrected.
• In most cases, it is better to use a recalled CR than not use one at all.

If a manufacturer has gone out of business or discontinued replacement programs, CR should be COMPLETELY destroyed (so cannot be used again) and replaced.

**Defect Investigation and Recalls**

- Recalls may or may not be due to crashworthiness
- May be related to:
  - Labeling
  - Flammability
  - Loose parts (choking hazard)
- All recalls should be corrected
- In most cases, better to use recalled CR than not use one at all

**REVIEW KEY CONCEPT...**

Some recalls do not affect the crashworthiness of the restraint, but all recalls must be corrected to ensure safety.

**INSTRUCTOR NOTE:**

Pass around a few recall lists for students to see. Note that participants will not be receiving a copy of a current recall list because it may become outdated before they use it.

Advise students of agencies that can be contacted for up-to-date recall lists and that the manufacturer can always be contacted for potential recalls on individual CRs.
Federal Motor Vehicle Safety Standards

- There are dozens of Federal Motor Vehicle Safety Standards established by NHTSA.
- Three of the standards are of most interest to this class:
  - FMVSS 208 — Regulates seat belts and air bags
  - FMVSS 213 — Provides CR performance standards for children up to 65 pounds
  - FMVSS 225 — Covers LATCH in the vehicle

INSTRUCTOR NOTE:

Do not elaborate on the provisions of these standards. They will be discussed briefly later.

FMVSS 213

- Provides CR performance standards for children up to 65 pounds.
- Some of these standards include:
  - Crashworthiness
  - Labeling and instructions
  - Flammability of padding and upholstery
  - Buckle release pressure
  - LATCH (Lower Anchors and Tethers for Children) equipment on CRs
- CRs tested as if in frontal crash of 30 mph using crash test dummies.
  - Dummies represent children of average weight for specified ages.
  - CRs and dummies properly secured on bench seat.
  - Cannot test for all types of real world crashes and vehicle variations.
  - Required tests are frontal collisions but manufacturers can and do many more tests such as side and rollover crash situations.
FMVSS 225

• Covers LATCH in the vehicle
  o Requirements for location and strength of CR anchorage system
  o In light duty passenger vehicles manufactured after September 2002

NHTSA Ease of Use Ratings

• Five-star rating system
• Includes evaluation of:
  o Content and clarity of the labeling
  o Content and clarity of instruction manual
  o Features to harness a child in the restraint
  o Features to install the CR in a vehicle

Non-Regulated Products

• May include:
  o Non-manufacturer approved head positioning pads
  o Shoulder belt positioning devices
  o Seat belt tension adjuster
  o Seat saver rubber and plastic mats
• Read manufacturers’ instructions to see if OK to use

REVIEW KEY CONCEPT...
NHTSA sets performance standards for child restraints and the manufacturers “self certify” that their models meet these standards.

FMVSS 225

• Covers LATCH in the vehicle.
  o Provides requirements for location and strength of CR anchorage system.
  o Covers systems for light duty passenger vehicles manufactured after September 2002.
• Additional information about LATCH to be covered later.

NHTSA Ease of Use Ratings

• All CRs meet FMVSSs and strict crash performance standards and are safe when used correctly.
• However, they do differ in their ease of use.
• Ease of use 5-star ratings:
  o Allows comparisons before purchase.
  o Are taken into consideration by CR manufacturers when designing and updating products.
  o Are found on NHTSA’s website (nhtsa.gov).
  o Are announced each year.

Non-Regulated Products

• Sometimes referred to as “aftermarket” products.
• May include:
  o Non-manufacturer approved head positioning pads
  o Shoulder belt positioning devices
  o Seat belt tension adjuster
  o Seat saver rubber and plastic mats
• No federal standards for these products even though they may say they “meet all applicable federal standards.”
• Many manufacturers’ instructions warn against use of these non-regulated products—MUST READ MANUFACTURERS’ INSTRUCTIONS.

• Some devices can injure occupants if not properly secured during a crash:
  - Mirrors
  - Suction cup-held window shades
  - Toys that attach to CR

State Occupant Restraint Laws

• Individual states legislate which types of restraints must be used by which occupants.

• All 50 states and the District of Columbia have laws that require some children to be buckled up in child restraints.

• There are seat belt laws in 49 states and the District of Columbia (New Hampshire is the exception).

• Ideally, all occupants in all vehicles should be covered by seat belt laws, child restraint laws, or both.

• Laws vary from state to state—for example:
  - Some children are not covered by either law.
  - Some states allow substitution of seat belts for children after they reach their second birthday.
  - Some states may require all children up to age 16 to be properly restrained.
  - Some states may require all children up to age 3 to be properly restrained.
  - Booster seat laws also have been enacted in some states.
  - Fines imposed may be too little or too much.
  - Fines frequently can be waived if the violator proves to the court that they have acquired a CR.
Examine the Occupant Restraint Law(s) in Your State and Discuss Key Provisions

- What ages and/or sizes are required to be in approved child restraints?
- Does the law require correct use of the seat?
- Does the law require that the seat meet federal motor vehicle safety standards?
- Does the law require certain ages and/or sizes of children to be in a rear seat?
- Are children older than 4 and heavier than 40 pounds required to be in a child restraint (booster law)?
- Is there a requirement for proper belt use by older children in all seating positions?
- Does it permit substitution of seat belts?
  - In certain seating positions?
  - At certain ages?
- Is there a requirement for proper belt use by drivers and adults in all seating positions?
- Who is responsible for violations?
- What are the penalties for violations?
  - How much are the fines?
  - Are court costs or other charges added to the fines?
  - Are driver’s license points assessed?
  - Are insurance points assessed?
• What exemptions are there?
  ◦ Non-parent vehicles?
  ◦ State residents?
  ◦ Emergency vehicles?
  ◦ Non-custodial drivers”
  ◦ While “tending to the child’s needs”?
  ◦ Other (e.g., taxis, public transportation)?
  ◦ Number of occupants exceeding the number of
    restraints?
  ◦ Pickup trucks?
  ◦ Double buckling (two children in one seat belt) allowed?

**Legal vs. Best Practice Recommendations**

• Remind participants that laws are generally minimum standards.

• “Legal” vs. “Recommended”
  ◦ “Legal” = Minimum necessary to comply with the law
  ◦ “Recommended” = Best practice recommendations to
    ensure child is as safe as possible

• Discuss what is “legal” for your state in relation to what is
  “recommended” as best practice.
Chapter 4:

How Restraints Protect Occupants in Crashes

INSTRUCTIONAL NOTES

EQUIPMENT NEEDED
Instructor CD, laptop computer, and projector

HANDOUTS NEEDED
None

EXERCISES
None

TIME ALLOTTED ON RECOMMENDED AGENDA
15 minutes
Lesson Plan

What Happens In a Crash — Basics of Crash Dynamics

Must understand basics of crash dynamics and crash forces to understand how restraints work.

- Must understand what happens in a crash.
- What forces do occupants and restraint systems undergo during a crash?
- How do seat belts and CRs work to protect occupants?

Basic law of physics: object in motion will remain in motion until acted on by an outside force.

- When a car stops suddenly, all objects inside the vehicle, including people, will continue moving at their original speed toward the point of impact until they are stopped by another object.
- Outside force that stops occupant could be:
  - Steering wheel
  - Dashboard
  - Tree
  - Pavement
  - Seat belt or CR — something designed to protect

Approximation of force of impact occupant will sustain:

- Weight of occupant multiplied by the speed of vehicle
- Example:
  - 20 pound baby in 40 mph crash thrown forward with a force of 800 pounds
  - \(20 \times 40 = 800\)
Types of Crashes

- CRs and belts help to protect occupants in all types of crashes.
- There are four main types of crashes:
  - Frontal
  - Lateral (or side-impact)
  - Rear-end
  - Rollover crashes.

- CRs and seat belts help to protect occupants in all kinds of crashes.
  - Frontal crashes are the most frequent type of crash.
  - A frontal crash is the type of crash that seat belts and child restraints are primarily designed for.

Other Dangerous Crash Events

- Rotations (spins) and ejections can happen in almost any crash event.
- Unrestrained occupants are more likely to be injured and to strike and injure other occupants in the vehicle.
- Occupants impact the vehicle’s interior repeatedly.
- Unrestrained occupants are much more likely to be ejected.
  - Ejected occupants are four times more likely to be killed.
  - Ejected occupants are 14 times as likely to receive cervical spine injuries.

- When ejected, either totally or partially, occupants may:
  - Be thrown out window or door
  - Skid along the pavement
  - Become pinned or crushed under the vehicle
  - Be unlikely to land gently on a soft and forgiving surface (even if landing on a soft surface — vehicle is likely to follow and land on the ejected person)
Unrestrained Occupants in Non-Collisions

• Can be hurt when vehicle swerves, skids, or stops suddenly.
• More likely to lose control of vehicle in emergency swerves.
• May strike one another or parts of the vehicle.
• While going around a corner, unlatched door can come open—unrestrained occupant could fall out.

Review Key Concept...

Occupant restraint laws differ from state to state; however, the laws of physics are the same in ALL states!

How Restraints Protect Occupants

Occupant restraint systems are designed to reduce injury to occupants and help to do so five different ways:

• Prevent ejection
  o Ejected occupants are four times more likely to be killed.
  o Ejected occupants also are much more likely to sustain cervical spine injuries.

• Load crash forces on the strongest parts of the body.
  o Older child or adult—hips and shoulders.
  o Infant and young child—no part strong enough so rear-facing CR supports the entire body to avoid stress on any one part.

• Spread crash forces over a wide area of the body.
  o Puts less stress on any one part of body.
  o Lap and shoulder belts and CR harnesses spread forces over large area.
  o Rear-facing infant restraint spreads forces along entire back, neck, and head.

• Allow the body to slow down gradually.
  o Vehicles engineered to crush in controlled manner.
  o Can take advantage of vehicle “ride down” if becomes a “part” of vehicle by use of snug seat belt or CRs.
• Protect the head, neck, and spinal column.
  - Shoulder belt or CR harness helps to keep head and upper body away from hard interior surfaces.
  - Rear-facing CR supports head and neck to avoid stress on neck and trauma to head and spinal cord.

INSTRUCTOR NOTE:
Review the five ways restraints reduce injury.

Types of Occupant Protections Systems
There is a wide range of equipment and systems that are designed to protect occupants in crashes.

Frontal Air Bags (AB)
• Provide head and chest protection in frontal crashes.
• Sensors detect frontal crash—AB inflates.
• Offers additional protection to front seat passengers.
• As occupant moves into AB—immediately deflate.
• Process completed in approximately ¼ of one second.
• AIR BAGS SUPPLEMENT SEAT BELTS.

Side Impact Air Bags (SABs)
• Improve protection in side impact crashes.
• Do not take the place of seat belts.
• Concerns about children leaning against SABs:
  - NHTSA has not seen dangers from SABs.
  - Refer participants to NHTSA's safercar.gov website for more information.
  - SABs vary from vehicle to vehicle.
  - Best source is owner’s manuals or customer service.
  - Best protection is proper restraint and not leaning against SABs.
Seat Belt Systems

- Vary widely — check owner’s manual
- Consists of:
  - Anchor points
  - Latch plate
  - Buckle
  - Webbing material

Two main types of seat belts:
- Lap belt
- Lap and shoulder combination

Lap Belt

- Has two anchorage points.
- Prevents ejection and striking occupants or interior.
- Fits over upper thighs/hips — should be snug to prevent “submarining” — very important.
- Does not restrain upper body.
- Loads forces on hips — does not restrain upper body.
- If riding up on abdomen, can cause seat belt syndrome.

Review Key Concept...

Air bags are supplemental protection. Seat belts must be worn for protection in all types of crashes and at all speeds.
Lap and Shoulder Combination Belt (L/S Belt)

- Has three anchorage points.
- Reduces head excursion—brain and spinal cord injury.
- Must lie across collarbone—close to neck.
  - Placing shoulder portion under arm or behind back is very dangerous—internal injuries and no upper body restraint.
- Lap portion worn as mentioned above.

**REVIEW KEY CONCEPT...**

1) Lap belts must be worn as snugly as possible and at least touching the upper thighs. 2) Shoulder belts must come across the collarbone and middle of the chest. 3) Placing the shoulder belt under the arm or behind the back is very dangerous.

The Need for Child Restraints

- Children are not miniature adults.
- Seat belts are designed for an adult body.
- Children need special restraints because of their developmental characteristics and proportions.
  - An infant’s head is larger and heavier.
  - An infant’s legs are shorter.
  - A newborn’s shoulders are narrow and flexible.
  - Under the age of one, bones and ligaments in the neck are not well developed.
  - A child’s pelvis is small and rounded, and shape is not fully developed until puberty.

How Child Restraints Work

- Child restraints work with seat belts to prevent ejection and distribute and load crash forces to the strongest parts of the body.
- In order to work as designed:
  - CR must be firmly attached to the vehicle.
  - Child must be snugly secured in the CR.
Do Child Restraints Work?

With correct use, CR effectiveness in crashes are:

- 71% effective in preventing fatalities
- 67% effective in reducing need for hospitalization
- 50% effective in preventing even minor injuries

REVIEW KEY CONCEPT...

Infants and children need special restraints to protect them in a crash. Seat belts are designed to restrain the adult body.

Occupant Protection Systems After a Crash

- In general, seat belt and child restraint systems are considered “one-time use” products.
- Vehicle and CR manufacturers recommend replacement after a crash.
- Parents should:
  - Contact CR manufacturer for advice on replacement.
  - Some CR manufacturers may offer replacements for CR after a crash.
  - Check NHTSA’s website for information.

Everyone Should Be Buckled Up—Every Time and On Every Trip

- Adults are role models for children’s safety behavior.
- Pregnant women should correctly use a lap-shoulder seat belt to provide protection to the unborn child.
Car Pools

- Make certain that CRs and seat belts are used by every passenger every time.
- There should be a seat belt for each passenger.
- Proper restraint device should be used for each person.

Unsurvivable Crashes

- Complete crash protection cannot be promised.
  - Properly used CRs are about 70% effective in reducing fatalities and serious injuries to the smallest children.
  - Lap/shoulder belts and air bags are about 50-60% effective for adults.
- Some crashes are unsurvivable.
- Factors that contribute to increased risks include:
  - High speeds
  - Small vehicle vs. large vehicle
  - Intrusion into vehicle
  - Health and physical condition of occupant
Chapter 5: Choosing and Using Child Restraints

Instructional Notes

EQUIPMENT NEEDED

- Instructor CD, laptop computer, and projector
- At least one example of each main type of child restraint with a variety of features
- Demonstrator seat (e.g., Dial-A-Belt) for use in showing booster and lap and shoulder belt

HANDOUTS NEEDED

- “Children” ages and weights on cards for exercise

EXERCISES

- Exercise #1: Selection of Appropriate Child Restraints

TIME ALLOTTED ON RECOMMENDED AGENDA

- 45 minutes — Content
- 15 minutes — Exercise #1: Selection of Appropriate Child Restraints
Lesson Plan

There Are 5 Parts to Providing Maximum Occupant Protection

- Selection: Choose the right restraint based on the age and size of the child.
- Harnessing: Harness the child in the restraint correctly.
- Direction: Be sure the child and CR face the right way in the vehicle.
- Location: Install the CR in the right spot in the vehicle.
- Installation: Secure CR to the vehicle in the right way.

INSTRUCTOR NOTE:

Direction, location, and installation of CRs in vehicles will be discussed later in the section titled “Installing Child Restraints in Vehicles.”

What Is the Best Car Seat?

Most common questions parents ask:

- “What is the best car seat for my child?”
- “Which seat do you recommend?”
- There is no simple answer.

Can’t really answer this since no CR is “safest” or best.

- All CRs must meet FMVSS 213.
- FMVSS 213 requires CRs to be tested in a 30 mph frontal crash into a solid barrier — considered to be a very severe crash.
• CRs must be labeled:
  o As meeting FMVSS 213
  o With model number and date of manufacture

Recommended **not** to use a restraint if:

• Missing the label
• Label has no model number or date of manufacture

Since ALL CRs must perform to a certain level, the “best” or “safest” restraint is the one that:

• Fits the child
• Fits the vehicle
• Will be used correctly every ride

All other things being equal, the least expensive model will protect the child as well as the most expensive model.

**REVIEW KEY CONCEPT...**

There is no “best” child restraint. The best or safest restraint is the one that 1) Fits the child 2) Fits the vehicle and 3) Will be used correctly every ride.

**Are Used Child Restraints Okay?**

• Must decide if cost of used CR is worth it.
• Newer models are more convenient and easier to use.
• To tell if used CR is safe to use, assure that:
  o Label present with model information.
  o Met FMVSS 213 at time of manufacture.
  o No more than 10 years old at the oldest (some advocates and manufacturers suggest 5 – 6 years).
  o Has instruction booklet.
  o All parts present and in good condition.
  o Has never been involved in a moderate/severe crash.
  o Is not under recall or, if a recalled model, corrections have been made.
Selecting the Right Restraint Based on the Age and Size of the Child

Confusion related to selection can be reduced by following NHTSA’s guidelines related to age and weight:

- Birth – 12 months
- 1 – 3 years
- 4 – 7 years
- 8 – 12 years

Rear-Facing Seats

Basics for best possible protection — keep children in the back seat.

- Your child under age 1 should always ride in a rear-facing car seat.
- There are different types of rear-facing car seats:
  - Infant-only seats can only be used rear-facing.
  - Convertible and 3-in-1 car seats typically have higher height and weight limits for the rear-facing position, allowing you to keep your child rear-facing for a longer period of time.

A child’s body changes as the child grows.

- An infant’s head is larger and heavier in proportion to its body.
- An infant’s shoulders are narrow and flexible.

AAP recommends:

- Rear-facing until child outgrows weight or height of RF CR.
- Until child’s head reaches within an inch of top of shell.
- RF convertible may be needed to extend time rear-facing.
- In addition:
  - AAP now encourages that children be kept rear-facing until at least the age of 2.
  - Research indicates children are more than five times safer riding rear-facing in a child restraint up to their second birthday.
Rear-facing CR in a frontal crash:

- Shell of RF CR absorbs forces in a head-on crash.
- Supports head, neck, and back in a head-on collision.
- Reduces stress to the neck and spinal cord.

Rear-facing CR in a rear-end crash:

- Forces absorbed by harness.
- Harness needs to be snug:
  - To hold child down in the seat.
  - To prevent ejection from CR and vehicle.
  - Rear end crashes are less frequent and usually involve lower crash forces than frontal crashes.
- Stress that RF is safest way for children (and adults) to travel.

Two Main Types of Rear-Facing CRs

Rear-Facing Only

- Weight limits:
  - Range from birth up to 35 pounds.
  - Refer to the manufacturer's instructions.
- Can only be used facing the rear of the vehicle.
- Are generally best fit for small infants.
- Rear-facing position supports the entire head, neck, and back.
- Most have a 5-point harness, older models may have 3-point.
  - Most newer models have detachable bases.
  - Base installs in vehicle.
  - Restraint/carrier snaps into base.
  - Most with detachable bases can be used with or without a base.
  - A few can be used only with the base—read instructions to be sure.
- Children may outgrow RF only CR in length before reaching weight limit.
- Should only be used until child’s head comes within an inch of the top of the shell.
Rear-Facing Convertible

- Convertible CRs can be used either facing the rear of the vehicle or facing toward the front of the vehicle.
- Have weight and height limits for each position.
  - Rear-facing:
    - Limits vary from 20 – 40 pounds.
    - Most newer models up to at least 30 pounds RF.
  - Forward-facing:
    - Lower limit most models is 22 pounds.
    - Upper limit may be as high as 80 pounds or more.
- Rear- and front-facing weight ranges usually overlap.
  - Example:
    - Rear-facing range = from 5 to 35 pounds
    - Front-facing range = from 22 to 65 pounds
    - Overlap range (certified for use either RF or FF) = 22-35 pounds

Convertible CRs usually have a 5-point harness, which is recommended for infants as well as toddlers.

Rear-Facing Reminders, Questions, and Concerns

Small Newborns and Lower Weight Limits

- Many CRs have 5 pound lower limit, a few say “birth.”
- Check the CR label for the lowest weight.
- Some may be tempted to place RF seat forward-facing to allow better view of child.
  - This is a serious error that places child at a significant risk of injury/death.
- Suggestions to ease desire to see baby while during driving:
  - Babies sleep through the night without being under a parent’s watchful eye.
  - If CR is appropriate for the size of child and is installed correctly, the baby should be fine.
• Parents may wonder if child’s legs are at risk for injury in RF CRs.
  ◦ The risk of injury to a child’s legs is low.
  ◦ Injuries that may occur are usually less severe than injuries to the head, neck, or spine (greater risk if FF).
  ◦ Stress that rear-facing is the safest way for all children—or adults—to travel.

• Remember the NHTSA and AAP recommendation that children be kept RF until they reach the RF weight/height limit of the CR.

• RF convertible may be needed to meet recommendations.

Forward-Facing Seats

Basics for Best Possible Protection

When children outgrow rear-facing seats:

• Should ride in forward-facing CR
• In the back seat
• Until reaching upper weight or height limit of CR:
  ◦ A number of CRs with higher upper weights (such as 50, 65, and 85 pounds) are available.
  ◦ More expected in the future.
  ◦ Use of “higher weight harness” CRs is especially important for:
    – Young children
    – Children not behaviorally mature enough to safely use a booster
Types of Forward-Facing CRs

Forward-Facing Convertible

- FF weight range for most convertibles is 22–65 pounds.
- Some may go as high as 80 pounds with the harness.
- Rear- and front-facing weight ranges for most convertibles overlap.
  - Example:
    - RF weight range = 5–30 pounds
    - FF weight range = 22–65 pounds
    - Overlap (RF or FF allowed) = 22–30 pounds
  - HOWEVER, recommendations are that:
    - The child should not be turned FF until he/she reaches the rear-facing weight or height limits.
    - Typically, the child’s head should not be within an inch of the top of the shell. Always check the CR manufacturer's instructions.

- Convertible CRs will have a 5-point harness.

Combination Child Restraint/Booster Seat

Forward-Facing CR

- With internal harness:
  - For use to a certain weight.
  - Installed like a FF with harness restraint with lap or lap and shoulder belt.

- For use as booster for larger child:
  - Harness is removed.
  - Used as a belt positioning booster with lap and shoulder belt.
• Combination Seats vs. Convertibles
  ° Combination seats tend to position children lower in vehicles and in a more upright position than convertible seats.
  ° Smaller children may be more comfortable and content in a convertible seat than a combination seat.
  ° Booster mode of a combo seat may not produce good fit of belts on child—may need a different booster.

• A few CRs sometimes called 3-in-1 or all-in-one seats can be used in three modes:
  ° Rear-facing CR
  ° Forward-facing with harness
  ° Belt positioning booster
  ° May or may not work well for all three modes for a given child in a given vehicle

Harness/Vest

• Have rigid backs or loops of webbing for installation with vehicle seat belts.
• Use 5-point harnesses.
• Without tethers:
  ° Fit children from 25-40 pounds.
  ° Differ in appearance and function from most CRs but meet FMVSS 213 performance standards.
• With tethers:
  ° Many styles and sizes must be used with vehicle lap belt and a top tether.
  ° Some can fit adults.
  ° Can be a relatively inexpensive way to provide additional upper body restraint for children over 40 pounds in lap-belt-only positions.

REVIEW KEY CONCEPT...

Children should remain in a forward-facing CR with a full harness until they reach the top weight or height allowed.
Booster Seats

Booster Seat Basics

- Once children outgrow their forward-facing seats, they should:
  - Ride in booster seats.
  - In the back seat.
  - Until the vehicle seat belts fit properly:
    - When the lap belt lays across the upper thighs.
    - The shoulder belt fits across the chest.
  - Booster seat weight ranges:
    - Lower limits starting at 30-40 pounds
    - Upper limits of 80-100+ pounds
  - Can only be used in a seating position equipped with a lap and shoulder seat belt
  - Most boosters have some type of shoulder belt adjustment.

Booster Seat Benefits

- The child’s pelvis is small, rounded, and not fully developed until puberty.
  - Lap belt may not stay below the hipbones in pre-school/elementary school-age children.
  - Both NHTSA and the AAP recommend use of boosters until the vehicle seat belts fit well.
  - According to some studies, belt positioning boosters are more effective in reducing risk of injury to children when compared to seat belts alone.

- Booster seats can help children see out the window better and be more content in the car.

Booster Seat Limitations

- It is important that a child is not switched to a booster seat until behaviorally mature enough to:
  - Sit upright in the booster seat.
  - With both the lap and shoulder belts properly positioned.
  - For the entire ride.
• Use of “higher weight harness” restraints are recommended for young behaviorally immature children.

Types of Boosters

• High-back booster seats:
  º Have a back to them in addition to the booster base.
  º Must be used when vehicle seat backs are low or do not have head restraints.
  º Provides head, neck, and back support for the child.

Backless Booster Seats

Have no head, neck, and back support for the child.

Should only be used:

• With a lap and shoulder belt
• In a seating position with head restraints
• Where the child’s ears are not above:
  º The back of the vehicle seat
  º The top of the head restraint

REVIEW KEY CONCEPT...

Belt positioning booster seats are more than twice as effective in reducing risk of injury to children when compared to seat belts alone.

Seat Belts

Seat Belt Basics

• For use only when the adult seat belt fits properly.
  º Lap belt lies across the upper thighs.
  º The shoulder belt fits across the chest.
Two types of seat belt systems are found in vehicles:
- Lap belt only
- Lap-and-shoulder combination belt

### Lap Belt

- Connects with the body in two places—at each hip.
- Should rest snug and low across the hips/upper thigh area—not across the stomach.
- Does not provide upper body protection—increased risk of head, spine, and/or neck injuries.
- Is better than no restraint at all.
- Should be used when no other restraint is available.
- Lap-and-shoulder combination belt provides better protection.

### Lap-and-Shoulder Belts

Connects with the body in three places—at each hip and at the shoulder.

- Lap belt should be snug and low over the hips/upper thighs.
- Shoulder belts:
  - Should rest across the chest and shoulder.
  - Should never be placed under the arm or behind the back.
    - Will not restrain upper body.
    - Can cause serious injury.
- Add-on shoulder belt adjusters are not recommended:
  - Not covered by any federal standards.
  - May do more harm than good by pulling the lap belt up onto the abdomen.
- Shoulder belt positioners are supplied with some rear-seat lap and shoulder belts in a number of vehicles and are acceptable to use—IF they are supplied by and tested by the vehicle manufacturer.
- Shoulder belt positioners cannot correct the fit of ill-fitting lap belts.
- Belt-positioning boosters are the only way to make a lap belt fit better.
To Be Able to Properly Fit a Lap-and-Shoulder Seat Belt

A child must:

• Sit with their back and hips against the vehicle seat back and sit without slouching.

• Bend their knees easily over the front edge of the seat and feet stay flat on the floor.

• Safely wear the seat belt with:
  ◦ Lap belt low and snug across the hips.
  ◦ Shoulder belt across mid-chest and shoulder.

• Use properly adjusted vehicle head restraint.

• Stay in position for the entire ride.

If the seat belt does not fit properly, the child should use a belt-positioning booster (BPB) seat.

Adaptive or Specialized Restraints

In general, conventional CRs can be used for most children with special behavioral, medical, or positioning needs.

Some medical/behavioral conditions may require use of adaptive or specialized restraints.

Basic types:

• Car beds
  ◦ For premature or low birth-weight babies with breathing problems
  ◦ Allows them to travel lying down

• Specialized restraints for children in casts
  ◦ For hip spica casts (Snug Seat Hippo, modified E-Z-ON Vest)
  ◦ For full-body casts (Modified E-Z-ON Vest)

• Positioning/postural restraints
  ◦ For children with poor head or trunk control and require special positioning
  ◦ Models for weights as high as 150 pounds
• Upright vests
  - Children over two years of age
  - Have behavioral problems and cannot safely use a conventional CR

• Special needs CRs
  - Usually physician-prescribed
  - May need to be ordered from a medical supply company
  - All/part of cost may be paid by health insurance
Chapter 6:
Harnessing the Child in the Restraint Correctly

Instructional Notes

EQUIPMENT NEEDED

- Instructor CD, laptop computer, and projector
- At least one example of each main type of child restraint with a variety of harnesses

HANDOUTS NEEDED

None

EXERCISES

None

TIME ALLOTTED ON RECOMMENDED AGENDA

45 minutes
CR harnesses are important because they:

- Keep child inside CR and vehicle.
- Reduce contact with vehicle interior & other occupants.
- Distribute crash forces over wide area of body.
- Load forces on strongest parts of child’s body.

Different harnesses have different weight limits.

The only way to be sure is to check the manufacturer’s instructions.

**Types of Harnesses**

- 3-Point (only allowed on RF-only CR)
- 5-Point (found on most CRs)
- Tray-Shield (fewer models, but still around)

All harnesses adjust in length and snugness.

- Newer CRs are easier to adjust than older models.
- Harness adjustment mechanisms may include:
  - Slide adjustment buckle
  - A-locks
  - Rod and slot systems
  - Twist-Knobs
Harness Slots

- To position the point at which the harness comes through the CR shell relative to the child’s shoulders.
- Can be from one to four sets of slots.
- Some CRs have harness height adjusters that slide up and down the back of the shell—no need for slots.
- CR manufacturer’s instructions must be referred to for correct slots.

Harness Retainer Clip

- Helps keep the harness in the proper position on the shoulders.
- Not needed on all CRs—read the CR instructions.

Buckle and latch plate(s)

- Locks the harness system together.
- Buckle requirements:
  - To have push-button release.
  - To be stiff enough so the child can’t unbuckle them, but not too stiff for adults.

Proper Positioning and Harnessing of Children in Rear-Facing Restraints

Always check manufacturer’s instructions for harnessing information.

In general, shoulder straps should be:

- At or below rear-facing infant’s shoulders
- Or in the lowest slot

To position the harness:

- Place infant in the CR with back and bottom flat against the CR seat back.
- Put the harness straps over the child’s shoulders.
- Buckle harness at the crotch.
- Check to ensure that the buckle is latched completely.
- Tighten the harness straps snugly.
  - Should not be able to pinch excess webbing at the shoulder
  - Called the “pinch test”
- Position harness retainer clip at armpit level.
If a small infant needs additional support:

- Place blankets around the baby after harness is snug. Be sure blankets remain outside of harness.
- If needed, place a rolled diaper or small blanket in front of the crotch strap between the child’s legs to prevent slumping.
- Be careful no additional padding gets under the child, unless it comes with the CR.

Semi-reclined rear-facing position provides the primary crash protection.

- Harness serves to correctly position the child and to prevent ejection.
- Recline angle:
  - Needs to be upright enough to provide crash protection.
  - Not so upright that child’s head falls forward.
  - Older children are better able to tolerate more upright position.
  - Recline angles range from 30 – 45 degrees.
  - Read the CR manufacturer’s instructions.

Proper Positioning and Harnessing of Children in Forward-Facing Child Restraints

Most harnesses rated up to the maximum weight of 40 pounds.

- Manufacturers know how harnesses will perform in a crash due to testing.
- Performance in crash is unknown if weight limit is exceeded.

Some CRs are available with higher weight limit for the harnesses such as 50, 65, or 80 pounds.

- Read and follow instruction manuals.
- Sometimes used for children with special health care needs.
- May be needed for children:
  - Heavier than 40 pounds
  - Not yet behaviorally mature enough for a booster seat
  - Example: Large two-year-old
To harness a child in a forward-facing CR:

- Have the child sit with his back and bottom flat against CR seat back.
- Adjust crotch strap (if adjustable) to align harness over hips.
- Thread harnesses through correct set of harness slots.
- Snug the harness.
- Position harness retainer clip at armpit level.

Bulky clothing can interfere with proper harness fit.

- Avoid bulky clothing/padding behind head, back, or under buttocks.
- Bulky jackets can be put on backwards after harness is secured.
- Place blankets over and around child after harness is snug for warmth.

**Additional FF Harnessing Issues**

**Forward-Facing Convertible Seat**

- CR should be in an upright position.
- Harness straps threaded as specified by the manufacturer.
  - Straps must be in the upper slots for many models.
  - Lower slots may not be reinforced and strong enough for FF crash forces.
    - Reinforcement may not be visible.
    - Structures that look like reinforcement may not be.
    - Read the manufacturer’s instructions to be sure.

**Combination CR**

- Used with a harness until upper weight limit is reached.
- Then used as booster with harness removed.
- Check manufacturer’s instructions for weight limits.
- Designed to be used only facing to the front of the vehicle.
  - All harness slots are reinforced.
  - Any harness slot at or above child’s shoulders can be used.
  - Mid-point of the back of child’s head should not be above top of CR shell.
Vests and Harnesses

- Variety of vests available for use as CRs.
- Meet same crash test requirements as conventional CRs.
- May help children with:
  - Behavioral issues
  - Weak muscles
  - Excess weight
  - Other situations when conventional restraint cannot be used
- Can provide improved upper body restraint in lap belt only position.
- Follow the manufacturer’s instructions for proper positioning and harnessing of children in them.

Proper Positioning and Securement of Children in Booster Seats

- To secure a child in a booster seat:
  - Place booster seat flat on vehicle seat.
  - Check that the child’s knees bend comfortably (so the child does not slouch).
  - Place the lap belt low across hips.
  - Place shoulder belt across chest.
  - Buckle the seat belt.
  - Use the booster’s shoulder belt positioner to keep shoulder belt across mid-point of the child’s shoulder.
- Refer to manufacturer’s instructions.
- Children must never be allowed to place shoulder belt behind back or under arms.
- Must not be installed in lap-belt-only position.
Proper Positioning and Securement of Children in Seat Belts

As a reminder, children should remain in boosters until adult seat belt can be worn properly.

To be able to fit a lap-and-shoulder seat belt, a child must:

- Sit with their back and hips against the vehicle seat back and sit without slouching.
- Bend their knees easily over the front edge of the seat and feet stay flat on the floor.
- Safely wear the seat belt with:
  - Lap belt low and snug across the hips.
  - Shoulder belt across mid-chest and shoulder.
- Use properly adjusted vehicle head restraint.
- Stay in position for the entire ride.

Belt positioning boosters must never be used with just a lap belt.

Positioning and Harnessing Children in Adaptive or Specialized Restraints

- Many children with special needs can use conventional CRs.
- Some conditions may require specialized CRs.
- CR selection and decision on positioning should be made by child’s medical team:
  - Therapists
  - Doctors
  - Parent/caregivers
  - CPS Tech with “special transportation needs” training
- Manufacturer’s instruction manual must be followed carefully.
Chapter 7:

Installing Child Restraints in Vehicles

Instructional Notes

EQUIPMENT NEEDED
Instructor CD, laptop computer, and projector

HANDOUTS NEEDED
None

EXERCISES
Exercise #2 Identifications of Belt Systems and Installations of CRs

TIME ALLOTTED ON RECOMMENDED AGENDA
• 45 minutes — Content
Lesson Plan

INSTRUCTOR NOTE:

Remind participants that there are five parts to providing maximum occupant protection:

- Selection: Choose the right restraint based on the age and size of the child.
- Harnessing: Harness the child in the restraint correctly.
- Direction: Be sure the child and CR face the right way in the vehicle.
- Location: Install the CR in the right spot in the vehicle.
- Installation: Secure CR to the vehicle in the right way.

Selection and harnessing were discussed in the previous section. We will now discuss direction, location, and general installation guidance.

Locked and Snug Installation Key to Correct Installation

CRs are designed to be installed in vehicles with:

- Lower anchor attachments
- Something on the seat belt must lock the CR into the vehicle and keep the seat belt tight at all times
  - All seat belts lock in a crash
  - But not all seat belts lock pre-crash
- If not locked, the belt can be too loose:
  - Allows the CR & child to move too far in a crash
  - Allows the CR to move out of position during braking, turning a corner, etc.
How Tight Is Tight Enough???

- Installed correctly, a CR should not move more than 1 inch:
  - Side-to-side
  - Front-to-back
  - When tested at the belt path
  - When tested with REASONABLE FORCE
  - DOES NOT have to be “welded to the frame” tight to provide protection

**REVIEW KEY CONCEPT...**

Once installed the right way, a CR will not move more than 1 inch side-to-side or front-to-back. Be sure to read both the child restraint instructions and the section in the vehicle owner’s manual on installing child restraints.

**Direction: Be Sure the Child and CR Face the Correct Way in the Vehicle**

As previously noted, for the best possible protection:

- Keep children in rear-facing CRs.
  - Recommend up to the height or weight limit of the particular seat.
  - Must remain RF until age 1 and at least 20 pounds.
- Rear-facing-only CRs must never be used facing toward the front of the vehicle.
- Forward-facing-only CRs must never be used facing toward the rear of the vehicle.
- No CR manufacturer allows any CRs to be used in side-facing vehicle seats (e.g., extended cab pickups).
Location: Install the CR in the Right Spot in the Vehicle

There may be many seating positions in a vehicle:

- But not all may be suitable for installing a CR.
- CR manufacturer’s instructions and/or vehicle owner’s manual may not allow certain vehicle seating positions to be used.

Should the child restraint be installed in the front or back seat?

- Back seat is generally considered safer than the front seat—further removed from frontal impacts.
- Situations where use of the front seat may be necessary include:
  - Families with more children than rear seating positions
  - Rear seats with lap only belts and older children who need lap and shoulder belts
  - Rear seats too narrow to accommodate a CR
  - There is no rear seat

The center-rear position is considered to be the safest.

- Farthest from impact and intrusion from any direction.
- Center position is not always best position for CR:
  - The seat belt in that position for some reason does not work well to install the child restraint.
  - The vehicle manufacturer prohibits installation of child restraints in that position.
  - Parents may need to transport more than one child.

- Neither the left (driver) nor the right (passenger) side is significantly safer than the other in terms of crash protection.
- Decision is based on personal preference, though the right side (behind the front passenger position) is curbside when parking on the street.
Are There Any Active Air Bags in That Seating Position?

Frontal Air Bags:

- NEVER place a rear-facing child restraint in front of an active passenger air bag.
- Inflating air bags cause serious/fatal injuries to rear-facing infants and other improperly restrained occupants.
- If there is no back seat, the AIR BAG MUST BE TURNED OFF!
  - Some vehicles have passive suppression or on/off switches.
  - Check the vehicle owner’s manual to be sure air bags can be deactivated.
  - If the driver is concerned about not being able to see the baby, get another adult to ride in the rear seat with the baby rather than putting the baby in the front seat or turning the child to face the front of the vehicle.
  - Single seat vehicles, such as pickup trucks, usually have on/off switches.
- Air bag ON/OFF switches:
  - NHTSA has a procedure permitting installation if needed.
- If child sits in the front seat, he/she MUST be properly restrained in:
  - Lap and shoulder belt
  - Lap and shoulder belt with a belt positioning booster, or
  - Forward-facing child restraint with an internal harness
  - Move vehicle seat to give at least 10–12 inches between child’s head or chest and the air bag compartment
- Behavioral as well as physical maturity also must be considered for sitting in front of an active air bag.

REVIEW KEY CONCEPT...

For all CRs, the back seat is generally considered safer than the front seat, and, if the CR fits, the center-rear seating position is considered to be safest.
Side Air Bags:

- Are concerns for children leaning against side air bags at time of deployment.
- Side air bags vary greatly from model to model, so refer to the vehicle owner's manual for recommendations.
- Minimize risk of injury through properly restraining all occupants regardless of the type of air bag present.

**Are There Any Features Present in Any of the Positions That Will Make Installation of a Child Restraint More Difficult?**

- Belt-positioning booster seats should only be used in a seating position with lap and shoulder belts.
- Tether anchor locations should be considered when choosing where to install forward-facing child restraints.
- CRs cannot be used with side-facing jump seats (e.g., extended cab pickup trucks).

Contours of vehicle seats (e.g., deep “buckets” or large humps) may present problems.

- CR bases may not fit in deeply contoured seats.
- Belt buckles can be mounted so high that they do not fasten tightly around many restraints.
- Contours may cause rear-facing infant to be too upright or for any CR to lean to the side.

Different seat belt anchor types and locations can cause problems:

- Rigid stems
- Belt anchors forward of the seat bight
- “Asymmetrical” anchors (one side anchored forward of the other; can be found in older vehicles with separate lap and shoulder belt)

Limited Interior Space:

- Small passenger compartments may restrict the use of some rear-facing CRs.
- Unless specified otherwise by the CR manufacturer, at least 80% of the CR base (footprint) must fit on the vehicle seat.
How Do the Needs of Each Child Relate to the Needs of Other Children or Adult Occupants?

- Try to choose positions that give all occupants the best protection possible.
- Example: Install a forward-facing convertible seat in a center lap belt-only position to leave the outboard lap and shoulder belt positions available for a child’s older, larger siblings or an adult.
- “Real world” conditions may lead to choices that are less than ideal.

Installation: Secure CR to the Vehicle the Right Way

Rear-Facing Basics

- Must be installed at CR manufacturer’s specified recline angle.
  - Ranges from 30 to 45 degrees from vertical.
  - Need to maintain an open airway while providing good crash protection.
  - Must not be more or less than allowed by the manufacturer.
  - Many RF CR models have correct recline indicator.

- Steeply sloped vehicle seats may require a tightly rolled blanket, towel, or foam “pool noodle” at the vehicle seat bight.
  - Limit to the size of the rolled object/noodle determined by achieving an appropriate recline angle.
  - Material used should be as incompressible as possible.

- Some RF-only CRs with detachable bases have adjustable “foot” for use, instead of rolled towels or noodles.
- In general, either adjustable foot or a noodle (but not both) can be used.
Tightly Securing the Child Restraint in the Vehicle

- It must be installed according to the manufacturer’s instructions.
- With a seat belt or with lower attachments—usually not both.
- Always be sure to read both the vehicle and CR instructions for help.
- Follow manufacturer’s instructions on:
  - Where to route the seat belt through the CR and how to lock the seat belt.
  - How to use the LATCH attachments and how to tighten and lock them.

To test the installation of a RF CR:

- Grip the CR at or near the belt path and pull on the CR.
- There should be no more than 1 inch of side-to-side or forward movement at the belt path.
- Do not test by grabbing the rear-facing CR near the baby’s head—it moves more when tested at that point.

A rear-facing CR should never be tethered unless recommended by the CR manufacturer.

- Several models have optional tethers in the rear-facing position.
- CR instruction manuals must be reviewed carefully for this information.

REVIEW KEY CONCEPT...

The rear-facing child restraint should be reclined far enough so that the infant’s head touches the back of the restraint and does not flop forward; however, the recline angle cannot be more or less than allowed by the manufacturer.
Installation: Forward-Facing Basics

- Many convertible CRs must be in the fully upright position when used forward-facing—some can be used in a semi-reclined position as well.
  - Forward-facing only CRs can be used in any position designated for use in the vehicle.
  - Always follow the manufacturer's instructions.
- To tightly secure the CR in the vehicle:
  - It must be installed according to the manufacturer's instructions.
  - With a seat belt or with lower attachments—usually not both.
  - Read both the vehicle and CR instructions.

Tethering a Forward-Facing Child Restraint

- Will reduce forward and side-to-side motion in crash.
- Helps to stabilize a CR with an otherwise loose installation.
- Should always be used for installations of forward-facing CRs with lower anchors.
- It is recommended to tether any forward-facing CR that comes with a tether, even when installed with a seat belt.

To test the installation of a forward-facing CR:

- Grip the CR at or near the belt path and pull on the CR.
- Should be no more than 1 inch of side-to-side or forward movement at the belt path.
- Do not grab the front-facing CR at the top of the shell because it moves more when tested at this point.
Installation: Booster Seat Basics

- Booster seats are not tightly installed in the vehicle like other CRs.
- Boosters are held in place by the child’s weight and the vehicle’s lap and shoulder belts.
- They “boost” children up to ensure correct seat belt fit.
- To properly “install” a booster seat:
  - Have the child sit with their hips back against booster seat—or against vehicle seat back for backless booster.
  - Knees should bend comfortably at the front edge of seat.
  - Place the lap belt low and snug on the hips.
  - Place the shoulder belt across the shoulder and middle of the chest.
  - Adjust shoulder belt positioner, if necessary.
  - Adjust the head restraint as needed.

- Boosters should be secured in the vehicle at all times—even when child is not in it—to keep it from being tossed around the vehicle during a crash or sudden stop.
- Some boosters, or combination seats being used as boosters, may come with LATCH attachments and allow for connecting the booster with LATCH attachments:
  - Does not make for a better installation.
  - Helps to keep booster in place when the child is not in it.
  - Check instructions for the booster to see if this is allowed.
General Steps for Child Restraint Installation

There are many different types of CRs and many different types of seat belts used to install them, but there are common steps for correct installation:

1. Place the CR on the vehicle seat.
   - In the proper forward- or rear-facing orientation
   - At the correct recline angle

2. Place the seat belt through the correct belt path and then buckle.
   - IMPORTANT NOTE: Child restraints installed with lower anchors do not use the seat belt.

3. Push the CR down into the vehicle seat cushion.
   - The weight from an adult hand should allow the seat to be tightened enough.

4. Tighten and lock the belt as directed by:
   - The vehicle manufacturer
   - The CR manufacturer

5. For forward-facing restraints:
   - Hook the CR's tether hook to a designated tether anchor.
   - Tighten the tether strap to make it snug.

6. Test for a tight installation of the CR.
   - Remember to hold the CR at the belt path to test.
   - One inch of movement front-to-back or side-to-side is allowed.
   - Check CR installation for tightness before each use.

Seat Belt Tightening Devices

- What is known is that there are no federal regulations, requirements, or recommended testing procedures for such devices.

- Also some concern about over-tightening the belt which could put undue stress on parts of the child restraint or seat belt.

- These devices should not be endorsed unless both the vehicle and child restraint manufacturers approve of using them.
Child Restraints and LATCH

Federal Motor Vehicle Safety Standard (FMVSS) 225:

- A more universal method of installation for many different combinations of child restraints and vehicles.
- The LATCH system can be used instead of the seat belt to install a CR; however you can only use one system at a time. Seat belts and LATCH should not be used at the same time to install a CR.
- Known as “LATCH” (stands for Lower Anchors and Tethers for Children).
- Almost all passenger motor vehicles and CRs manufactured since September 2002 are required to be equipped with LATCH.

LATCH on the Child Restraints

LATCH-equipped CRs have lower attachments that hook or snap onto the lower anchor bars in the vehicle.

Top Tether

- Found on most forward-facing CRs, other than boosters, manufactured since September 1999.
- Is the restraining strap attached near the top and in the rear of the CR that is then hooked to a tether anchor in the vehicle.
- A tether:
  - Reduces forward movement and rotation of the CR.
  - Can improve CR installation in some situations of incompatibility between CR and vehicle.

LATCH in the Vehicle

- The complete LATCH system consists of:
  - Two lower anchors – a pair of rigid anchor points located in the vehicle seat bight (where the cushion meets the seat back)
  - One upper tether anchor – permanently attached to the vehicle at the top or behind the rear seat
• Most vehicles do not allow rear center positions to be used with LATCH (but CRs can still be installed with seat belts).

• Always follow both the vehicle manufacturer’s and the CR manufacturer’s instructions for LATCH installation.

• IMPORTANT: A CR installation with a properly used seat belt, together with a tether strap properly anchored (if appropriate), performs as well as an installation with lower anchors and tether.

**Tether Anchors**

• All passenger vehicles manufactured since September 2002 are equipped with tether anchors.

• Many vehicles manufactured before 2002 also have built-in anchors or designated tether anchor locations.

• Tether anchors can be found in many different locations in vehicles. In general:
  - For sedans, usually in the rear window shelf, directly behind the child restraint.
  - For hatchbacks and station wagons:
    - Usually into or through the floor of the cargo area.
    - Sometimes in the ceiling or upper frame of the cargo door.
    - Sometimes on the underside of the vehicle seat.
    - Do not confuse cargo tie-down hooks in the cargo area with tether anchors.
  - For a pickup truck, usually into or through the rear wall (does not apply to side facing jump seats).
New Car, Older Seat?

- New vehicles are equipped with seat belts to install older CRs.
- New LATCH equipped CRs can be installed in older vehicles with seat belts.
- Most older vehicles can be retrofitted with tether anchors.
- Only a few models can be retrofitted with lower anchors.

**REVIEW KEY CONCEPT...**

Both seat belts and LATCH system provide equal protection since child safety seats must meet Federal safety standards with either installation method. The most important thing is to be sure that the child restraint is correctly installed in the vehicle.
Chapter 8:
Child Restraint and Seat Belt Misuses

Instructional Notes

EQUIPMENT NEEDED
Instructor CD, laptop computer, and projector

HANDOUTS NEEDED
None

EXERCISES
Exercise # 3: What’s Wrong with This Picture?

TIME ALLOTTED ON RECOMMENDED AGENDA
• 15 minutes — Content
• 15 minutes — Exercise # 3: What’s Wrong with This Picture?
Lesson Plan

Importance of Correct Use

Stress the importance of correct use.

- CRs are most effective restraint available—reduce fatalities by:
  - 70% for properly used CRs for infants
  - 50–60% for older children

- Misuse can:
  - Greatly reduce effectiveness of CR.
  - For example, a CR installed too loosely can lead to child striking the vehicle interior.

- Studies show that about three out of four CRs are installed or used incorrectly.
  - Some related to “human factors”
  - Others related to equipment

Reasons for Misuse

- Human factors:
  - Failure to read instructions
  - Inability to understand confusing instructions
  - Choosing the “convenient way”

- Equipment:
  - Many combinations of belts, CRs, and vehicle configurations create incompatibilities
  - CR instructions may conflict with vehicle’s instructions
  - Lack of instructions
  - Used seats are often missing parts, instructions, and labels
Types of Misuse

Gross Misuse:

- Misuse that makes restraint virtually useless – likely to result in serious injury or death.
- Anyone with basic CPS knowledge should be able to recognize gross misuse.
- Also the types of misuse that law enforcement officers should consider issuing a citation for whenever encountered.
- Non-use is most dangerous misuse!
- Examples of gross misuse:
  - CR not secured to vehicle at all.
  - Child not harnessed in CR.
  - Rear-facing CR in front of an active air bag.
  - A rear-facing only CR used forward-facing.
- Note that an infant forward-facing well before 20 pounds or one year is considered to be misuse but may be legal – refer to your state’s CPS law.

Other Misuses

- There are many ways in which misuses reduce effectiveness of CRs.
- Multiple misuses compound and become a serious danger to the child.

Examples of other types of misuse include:

- Inappropriate Restraint Selection
  - Wrong type for age/size of child
  - Recalled CR not repaired
  - CR damaged or not working correctly
Harnessing Errors

- Straps in wrong slot
- Harness not placed on child correctly
- Too loose
- Adjustment mechanism not locked
- Retainer clip (if CR is equipped with one) too high, too low, or not fastened
- Frayed, twisted, pinned, knotted, or damaged webbing

Installation Errors

- Seat belt not locked
- Seat belt locked but too loose
- CR installed in wrong direction
- Incorrect recline angle
- Seat belt through wrong belt path
- Locking clip (if needed) not used or used incorrectly
- No tether used if required or incorrect use of tether system

Misuse of Booster Seats

- Both the shoulder and lap belts must be routed correctly over the child and the booster.
- BPBs must never be used with just a lap belt.

REVIEW KEY CONCEPT...

National studies indicate that about 3 out of 4 child restraints are installed or used incorrectly.
Misuse of Seat Belts

- Lap belt too high can result in internal injuries.
- Child too small to be in shoulder belt.
- Shoulder belt too loose increases upper body movement.
- Shoulder belt under the arm:
  - Increases upper body movement.
  - Can result in internal injuries.
- Shoulder belt behind the back:
  - Provides no upper body protection.
  - Does not work as well as does a lap belt only.
- Any misused seat belt is especially dangerous in front of an air bag.
- Restraining two or more occupants in one seat belt increases risk of occupant-to-occupant injury.

INSTRUCTOR NOTE:
At this point, conduct Training Exercise #3 – “What’s Wrong With This Picture?” Show each of the following slides and point out the misuses as listed below. Note that these examples are serious enough that persons with very basic CPS knowledge should be able to notice that “something looks wrong.” Also note that these examples are not in their participant manuals.

What’s Wrong with This Picture?

Misuse Example 1:
- Installed in front seat.
Misuse Example 2:

- Retainer clip is too low, should be placed at armpit level.

Misuse Example 3:

- Seat belt securing CR is not tight.
- More than 1 inch of movement side to side.

Misuse Example 4:

- Child should be in booster seat.
- Child should not wear backpack.
Misuse Example 5:
- The child restraint is not at the correct angle. The indicator bubble should be between the two lines.

Misuse Example 6:
- Harness straps are twisted.
- Harness straps are loose.
- Retainer clip is placed too low. Clip should be placed at the child’s armpits.

Misuse Example 7:
- Retainer clip is placed too low. Clip should be placed at the child’s armpits.

Misuse Example 8:
- Seat should be rear-facing.
- Seat belt is not in the correct belt path.
- The base is not installed.
Misuse Example 9:

- The seat belt is too loose and twisted for the base to be installed properly.

Misuse Example 10:

- Child should be in a booster seat.
Chapter 9:

Child Passenger Safety in Other Vehicles

Instructional Notes

Equipment Needed
Instructor CD, laptop computer, and projector

HANDOUTS NEEDED
None

EXERCISES
None

TIME ALLOTTED ON RECOMMENDED AGENDA
10 minutes
Lesson Plan

Introduction

- The focus of this class is on CPS in family passenger vehicles.
- Some vehicles present special challenges:
  - Pickup trucks
  - 15 passenger vans
  - School buses
  - Airplanes
  - Ambulances
  - Police vehicles

Pickup Trucks

- Regular and extended-cab pickup trucks have an on/off switch for the air bag.
- Extended-cab pickups may have side-facing jump seats in rear.
  - MAY NOT use CR in side-facing seats.
  - CRs only tested for forward-facing seats.
  - CR must be placed in front seat.
  - Preferably with air bag turned off.
  - CANNOT USE REAR-FACING CR IF AIR BAG CANNOT BE TURNED OFF!
- Rear seats may be much narrower.
  - May not allow enough space for correct recline angle for RF CR.
  - May not allow for 80% of CR base to be supported by vehicle seat.
• Refer to vehicle owner’s manual for additional information.
  o CR requirements
  o Air bags
  o Tether anchors

• Cargo areas not designed for passenger seating under any circumstances.
  o Proven to be source of injuries and death to children and adults.
  o Ejection is major cause of injury and death.
  o Covered cargo areas also expose passengers to carbon monoxide fumes.

**REVIEW KEY CONCEPT...**
Child restraints cannot be secured on a pickup truck’s side-facing jump seat.

### 15 Passenger Vans

Required to have seat belts in all positions.

- Older models may have lap-only belts in all rear seats.
- Newer vans have at least some rear seats with L/S belts.

**Federal Regulations**

- Do not prohibit use of vans by schools.
- Do require new vans with capacity of more than 10 persons.
  o If purchased or leased with intent to transport children to or from school or school events.
  o Must meet school bus standards.
- NHTSA recommends children be transported in school buses.
- Some states prohibit child care centers and schools from using 15 passenger vans.

**Head Start Regulations**

- Require children who weight 65 pounds or less to be correctly restrained in CRs.
• School buses or vehicles must meet all applicable FMVSSs for buses.
• Vans that do not meet school bus standards may not be used.

School Buses

“We have seat belts in passenger cars, so why don’t we have them on school buses?” is a very common question asked by many parents.

Answer:

• School buses are different from passenger cars:
  ◉ Use different kinds of safety systems and designs.
  ◉ Systems work extremely well.

• School bus transportation is the safest form of ground transportation.
  ◉ Nearly eight times safer than passenger vehicles.
  ◉ Getting to and from bus is more dangerous.

• Factors that make school buses so safe:
  ◉ FMVSS for buses is very stringent.
  ◉ Buses are larger and heavier.
  ◉ Participants sit high above impact zone.
  ◉ Crash forces and occupant protection distributed differently.
  ◉ Equipped with stop arms, warning lights, roof hatches, crossing arms, etc.

• FMVSS 222 requires:
  ◉ Installation of seat belts on new small school buses with gross weight of 10,000 pounds or less.
  ◉ Standard (large) school buses have strong, well-padded, energy-absorbing seats and higher seat backs for “compartmentalization.”
  ◉ Standard school buses not required to have seat belts for that reason (except for driver).
NHTSA Recommends: Pre-School-Age Children Transported in School Buses

- Be in a child restraint suitable for the child’s weight and age with the restraint system being.
- Properly secured to the school bus seat.
- Original school bus seat may need to be replaced to properly install a CR.

Refer to nhtsa.gov for additional information on school buses.

Airplanes

Current FAA regulations do not require all children be restrained on aircrafts.

Children under two years old are permitted to be held on an adult’s lap.

- Can be held even during:
  - Takeoff
  - Landing
  - Turbulence
  - Emergencies

Safest place for children on airplanes is in an approved CR.

- Most current RF-only and convertible CRs pass aircraft testing.
- Must have label stating certification for use on aircraft.

FAA recently established guidelines for use of certain restraint systems for use on planes only, not in motor vehicles.

FAA strongly urges use on airplanes as follows:

- RF CR for infants less than one and 20 pounds
- FF CR for children over age one and 20 pounds
- Airplane lap belt for over 2 years old if no CR available
- Do not use boosters or vests – no L/S belts available

Airlines are not required to allow use of CRs.

- Parents may have to purchase a ticket or travel on low occupancy flights for children under 2 years old.
- Urged to make prior arrangements.
- Urged to get written confirmation of airline approval for use of CR.

**Ambulances**

- Safe transportation in ambulances for children and adults pose challenges.
- Environment is much different.
- “Typical” patient compartment of ambulance is equipped with:
  - Captain’s chair facing the rear or swivels from side-to-side and can face the front of the vehicle
  - Bench seats along one side
  - Cot or stretcher for patient
  - Storage for equipment and supplies
  - No FF vehicle seats for proper installation of CRs
- If possible, non-patient children should be transported in another vehicle.
- CRs used in ambulance should be secured in locations considered safe in a crash

**Police Vehicles**

- CRs should not be installed in police vehicles if the prisoner screen is present:
  - Does not allow enough space for forward movement of child’s head.
  - May interfere with ability to get proper recline angle for RF CR.
- If correct installation is not possible, the child must be transported in another vehicle.
Chapter 10:
Conclusion—Where Do We Go From Here?

Instructional Notes

EQUIPMENT NEEDED
Instructor CD, laptop computer, and projector

HANDOUTS NEEDED
None

EXERCISES
None

TIME ALLOTTED ON RECOMMENDED AGENDA
30 minutes
Lesson Plan

Introduction

As was discussed at the beginning this class, the goal of the class is:

- To create an awareness of the importance of CPS education and enforcement in preventing child passenger deaths and injuries.
- To provide basic knowledge on this issue to individuals and groups who can then:
  - Understand and explain their State’s occupant restraint laws.
  - Detect major and potentially harmful CPS and seat belt law violations.
  - Support the enforcement of existing child passenger safety statutes.
  - Provide basic information to parents on correct child restraint use.
  - Develop and participate in effective CPS partnerships.
- What follows are suggestions for ways to act upon the knowledge gained through this class.

Intervention: Making a Difference in Child Passenger Safety

When we see children and child restraints, we should ask ourselves three basic questions:

- What can I see?
- Why is that important?
- What should I do?
What Can I See? Why Is This Important?

There are a number of dangerous behaviors and situations that can be identified anytime you see children in a car regardless of level of training:

- Are all children sitting in the back seat?
- If there are more children than seating positions in the back seat:
  - Who is up front?
  - How is that child restrained?

At a minimum, look for GROSS MISUSE OR NO USE.

- No restraint at all is the worst misuse.
- Other types of gross misuse include:
  - No seat belt or LATCH attachments anchoring the CRS.
  - No harness securing the child.
  - Rear-facing infant in the front seat with an active air bag.
  - Infant less than 20 lbs or one year facing forward.

Additional Questions to Ask Each Time You See Children in a Car and Why the Answers Are Important

Is there a baby or small child in the car? Does the child restraint law cover that child?

- Legal requirements can be an effective “educational” tool in some situations.
- Is there a child restraint in the car? This is easy. Either there is, or there isn’t.
- Is there a child in the child restraint? Another easy one, although if the seat is occupied, there are new questions to ask, for example:
  - Is the child in the right type of child restraint?
  - Is the child restraint facing forward or rearward?
  - Is there a front passenger air bag in the vehicle? Is there a child restraint in front of the active air bag?
  - Can I see a child restraint harness system?
  
  If it’s not used at all, then there is no restraint.
  
  If it is too loose, there’s a danger the child could be ejected in a crash.

What can I see? Why is this important?

- Some behaviors/situations apparent regardless of training:
  - Are all children sitting in the back seat?
  - Which child is up front?
  - Is that child restrained?
  - As a minimum - look for gross misuse or no use

Gross Misuse Includes ...

- No restraint at all
- No belt anchoring the CRS
- No harness securing the child
- RF Infant in front seat with active air bag
- Child < 20 pounds or < 1 year old facing forward

What Can I See?

- Is there a child in the car?
- Does the CR law cover that child?
- Is there a child restraint in the car?
- Is there a child in the child restraint?
  - Is the child in the right type of child restraint?
  - Is the child restraint facing forward or rearward?

What Can I See?

- Is there an air bag in the vehicle?
  - Is there a child restraint in front of the air bag?
- Can I see the harness system?
  - Is it in use - Is it too loose?
- Can I see a seat belt anchoring the CR?
- Is there a child in a seat belt who is too small for the belt?
Can I see the vehicle’s seat belt? Is it anchoring the child restraint?

A CR not anchored to the car is dangerous to the child and to other passengers.

It can be difficult to tell, but the seat belt must be tightened down to reduce movement of the child restraint.

- Is there a child using a seat belt who is too small to use it properly?
  - Is the lap belt riding up on the child’s stomach?
  - Is the shoulder belt crossing the child’s neck or face or placed under the arm or behind the back?
  - Is there a booster seat available for the child to use to make the seat belt fit?

**Additional Questions Related to Vehicle Collisions Involving Children for First Responders**

Additional questions to ask when approaching a vehicle collision:

- Look for crash scene clues to restraint use and possible causes of injury.
  - In which seating position in the vehicle was the child?
  - Was the child in a child seat?
  - Was the CR held in the vehicle by the seat belt or LATCH system?
  - Was the child secured in the seat by a harness?
  - Was there intrusion into the vehicle where the child was sitting?
  - Was the child in an air bag position with the air bag deployed?

**Health Care Providers: Questions to Ask of First Responders**

- Did they find any crash scene clues to restraint use and possible causes of injury?
  - In which seating position in the vehicle was the child?
  - Was the child in a child seat?
  - Was the CR held in the vehicle by the seat belt or LATCH system?
  - Was the child secured in the seat by a harness?
Was there intrusion into the vehicle where the child was sitting?

Was the child in an air bag position with the air bag deployed?

**Why Are These Questions Important?**

These observations may provide clues to health care professionals about potential injuries that may not otherwise be easily observed, for instance:

- Child may have been partly ejected if not restrained snugly.
- Injury may be result of child striking vehicle interior if the CR was not secured tightly in the vehicle.
- There may be very serious hidden injuries to a child in the abdomen or spinal cord areas if a seat belt was being used incorrectly.

Besides asking – “What do I see?” “What does that mean?” and “Why is that important?” – all professionals can ask and answer the question “What should I do?”

What the answer is will depend in large part on:

- Your profession
- The resources available to you at the time

**Law Enforcement Professionals: “What Should I Do?”**

The International Association of Chiefs of Police (IACP) has a “Model Enforcement Program for Occupant Protection.”

- Helps provide guidance for the enforcement of occupant protection laws.
- IACP guidelines endorse the “integrated enforcement approach,” in which:
  - Each officer should ensure that at every traffic enforcement contact the use of safety restraints is addressed.
    - This may simply be positive reinforcement if proper use of safety restraints is observed.
    - All vehicle occupants should be checked for compliance with state laws.
° When restraints are not being used correctly:
  – Officers should provide appropriate educational information to encourage proper use.

• If illegal non-use or intentional misuse is noted:
  ° Appropriate enforcement action should be taken.
  ° All enforcement actions:
    – Should be accomplished in a firm, fair, impartial, and courteous manner
    – Can include the following actions:
      Verbal warning
      Written warning
      Citation

• Integrated approach to highway safety:
  ° Costs nothing.
  ° But there is nothing you can do as a law enforcement officer that has more effect on safety than enforcing the restraint laws in your state.

At a minimum, if the officer sees a child in the vehicle:

• Look for the gross misuse or non-use of child restraints.
• At the very least, it presents an educational opportunity.

Officers have the respect of both adults and children.

• Parents will seek out officers for CPS information.
• Children can be some of your most effective advocates.
• There are many opportunities for participating in local CPS educational programs/activities.
• Local program coordinators will welcome your involvement.
Nurses and Other Health Care Providers: “What Should I Do?”

When encountering children in a motor vehicle, nurses and other health care providers need to know:

- What to look for
- How to identify what they see
- What needs to be done

Nurses/health care providers also need to be aware that non-use/misuse of restraint systems can have an effect on:

- Injuries sustained in motor vehicle crashes
- Possible treatment options

If a nurse/health care provider sees a child in the vehicle during the course of daily activities:

- Look for the gross misuse or non-use of child restraints.
- If possible, take appropriate action to protect the child if misuse or non-use is observed.
  - Educate the driver about proper use.
  - Warn the parent about the potential of serious injury or death to the child.
  - If necessary, inform the parent about your state’s laws and the possibility of a citation.

What else can we do?

- Pre- and post-natal CPS-related information and education can and should be a part of:
  - Clinic visits
  - Childbirth/parenting classes
  - Hospital discharge planning and teaching

- Routinely evaluated to be sure that only the most current and correct information is provided.
- Review “How To” videos on NHTSA’s website, nhtsa.gov.

Remember that:

- The most effective enforcement of occupant restraint laws is done with community support.
- Expressions of support from the medical community to local government and enforcement officials can go a long way.
Fire and Rescue Professionals: “What Should I Do?”

When encountering children in a motor vehicle, fire and rescue professionals need to know:

- What to look for
- How to identify what they see
- What needs to be done

They also need to be aware that non-use/misuse of restraint systems can have an effect on:

- Injuries sustained in motor vehicle crashes
- Possible treatment options

If a fire and rescue professional sees a child in the vehicle during the course of daily activities:

- Look for the gross misuse or non-use of child restraints.
- If possible, take appropriate action to protect the child if misuse or non-use is observed.
  - Educate the driver about proper use.
  - Warn the parent about the potential of serious injury or death to the child.
  - If necessary, inform the parent about your state’s laws and the possibility of a citation.

What Other Roles Can Fire and Rescue Personnel Play in the Field of CPS?

Interaction with neighborhoods and city/county districts has always been a part of the fire and rescue profession.

- CPS information fairs and car seat check-up clinics are particularly well-suited events for fire stations.
- Fire stations also are good locations for operating permanent CR inspection stations.
- As first responders to crash scenes, fire and rescue personnel are uniquely qualified to act as spokespersons to their community about the importance of CPS.

Remember that:

- The most effective enforcement of occupant restraint laws is done with community support.
• Expressions of support from the fire and rescue and EMS community to local government and enforcement officials can go a long way toward helping to assure that these laws are actively enforced.

Child Care Providers: “What should I do?”

When encountering children in a motor vehicle, whether it is in the carpool drop-off, pick-up line, or during facility-sponsored transportation, child care providers need to know:

• What to look for
• How to identify what they see
• What needs to be done

If a child care provider sees a child in the vehicle during the course of daily activities:

• Look for the gross misuse or non-use of child restraints.
• If possible, take appropriate action to protect the child if misuse or non-use is observed.
  ◦ Educate the driver about proper use.
  ◦ Warn the parent about the potential of serious injury or death to the child.
  ◦ If necessary, inform the parent about your state’s laws and the possibility of a citation.

What else can child care providers do?

• Child care providers often play a role in the transportation of children.
  ◦ Child care providers assume a tremendous responsibility when providing transportation services.

• Facility should:
  ◦ Develop a written transportation policy (considering state laws).
  ◦ Provide guidelines and recommended practices based on the availability of CRs and types of vehicles used.
  ◦ Document the number of children transported by the child care provider in a given time, including types of restraints and vehicles used.
• Child care providers also may conduct educational sessions:
  ◦ For parents and other caregivers
  ◦ For children (age appropriate)

Remember that:

• The most effective enforcement of occupant restraint laws is done with community support.

• Expressions of support from child care providers and other educators to local government and enforcement officials can go a long way toward helping to assure that these laws are actively enforced.

The Very Last Question: WHAT SHOULD WE ALL DO?

The Operation Kids: Next Generation Child Passenger Safety – Basic Awareness Class has been a basic introduction to the broad and in-depth field of child passenger safety.

The basic knowledge gained should be enough to:

• Help convince parents and other caregivers to correctly use child restraints and seat belts for their children.

• Find additional information.

Is Certification for Me?

• Operation Kids: Next Generation is a basic introduction to the broad and in-depth field of child passenger safety.

• Basic knowledge is enough to help convince parents/caregivers to:
  ◦ Choose and use child restraints and seat belts for their children and themselves.
  ◦ Find additional information.

• Participants may want to become more involved:
  ◦ Persons wishing to provide hands-on community CPS services are encouraged to pursue CPS Technician certification.
  ◦ They should first work with Certified Technicians in established local programs for a period of time

• There are many opportunities for participating in local programs and activities as follows.
Child Passenger Safety Checkup Events

Sponsored by many organizations in communities periodically by:

- Fire and rescue personnel
- Law enforcement officers
- Health care agencies
- Safe Kids coalitions

Scheduled checkup events:

- Provides public service to educate parents/caregivers about correct use of CRs
- Headed by Certified Technicians
- Teams of checkers teach caregivers the basics of:
  - Correct selection
  - Correct use
  - Correct installation
- Excellent opportunity for checkers to gain experience in:
  - Identifying unsafe CRs
  - Diagnosing misuse
- Must be well planned in advance:
  - Requires effective advertising and promotion
  - Most effective if CRs can be provided to individuals that cannot afford new ones
  - Requires many volunteers

Permanent Checking Stations

- Many public health and safety agencies have established permanent inspection stations or sites.
- Have regular schedule of operation:
  - Some require appointments
  - Some allow drive-ups
- Nationally certified and experienced CPS Technicians must be available.
Child Restraint Distribution Programs

- Provides CR distribution to families:
  - Identified as needy
  - Receive public assistance
  - May be asked to make donation to receive CR
  - Must also provide education

- Should be provided with education about correct use before distribution.

Welcome to the CPS Team

You are now part of a larger community of CPS advocates.

- Important contacts for additional education/training/assistance:
  - State CPS Coordinator
  - State and/or local Safe Kids Coalitions
  - Other child passenger safety advocates and educators
  - NHTSA’s website – nhtsa.gov

- These advocates and educators can assist you in:
  - Seeking out additional training programs, including standardized CPS Technician training
  - Providing information about:
    - Existing local CPS programs
    - Setting up your own CPS-focused programs
  - Doing so can provide the experience of:
    - Knowing that you have done all you can to prevent a number of needless deaths and injuries to children
    - Not just responding to them

Thank You

- Thank participants for their participation in the class.
- Be sure you have provided participants with information on state and local contacts for:
  - Additional information about programs and services in their communities
  - Opportunities for participating in these programs
- Be sure they have contact information for all instructors.
Appendix
National Child Passenger Safety Resources

AAA Foundation for Traffic Safety
607 14th Street NW
Suite 201
Washington, DC 20005
202-533-5944
www.aaafoundation.org

AAA Foundation for Traffic Safety is a not-for-profit, publicly-supported charitable educational and research organization that funds research projects designed to discover the causes of traffic crashes, prevent them, and minimize injuries when they do occur. This research is then used to develop educational materials for drivers, pedestrians, bicyclists and other road users.

American Academy of Pediatrics
Publications Department
141 Northwest Point Boulevard
Elk Grove Village, IL 60007-1098
800-433-9016
847-434-4000
www.aap.org

The AAP’s child passenger safety information includes policy statements relevant to recommendations for transporting children safely. Pamphlets on safety seat use, restraint choice available. Produce a shopping guide for children with special transportation needs and an annual car seat shopping guide.

Automotive Safety Program, Riley Hospital for Children
575 West Drive, Room 004
Indianapolis, IN 46202
317-274-2977
www.preventinjury.org
www.preventinjury.org/NationalCenter.asp

The National Center for the Safe Transportation of Children with Special Health Care Needs, funded by the National Highway Traffic Safety Administration, is based at the Automotive Safety Program and serves as a resource for families, health care professionals, transportation providers, and child passenger safety advocates. The National Center has a toll-free hot line (Monday – Friday, 8:00 a.m. – 5 p.m. EST) staffed by child passenger safety technicians who are experienced in resolving issues associated with the transportation of children with special health care needs - including ambulance transport safety.

Children’s Hospital of Philadelphia, Center for Injury Research and Prevention
3535, TraumaLink, 10th Floor
Philadelphia, Pa. 19104-4399
800-879-2467
215-590-3118
www.chop.edu/carseat

---

1Please note that this list is not meant to be all inclusive.
Partners for Child Passenger Safety is a research partnership of The Children’s Hospital of Philadelphia, and the University of Pennsylvania, and State Farm Insurance developed to study how and why children are injured and killed in motor vehicle crashes and to help parents and caregivers learn more about child safety seats, booster seats and seatbelts. The Partners team has studied more than 300,000 motor vehicle crashes to learn more about child safety. Research findings and fact sheets can be found through their Education and Advocacy and Publications sections of the Center for Injury Research and Prevention site.

The information on their Keeping Kids Safe During Crashes: Every Child Deserves a Safe Ride site includes videos and other useful information on installing and using child safety seats and on seat belt use for older children and quick tips to help you review the information and links to other online resources.

Partners for Child Passenger Safety now has a Spanish version of their ”Keeping Kids Safe” site on their Como mantener a los niños fuera de peligro durante los choques: Todos los niños merecen viajar seguros site.

**Federal Aviation Administration (FAA) Child Safety on Airplanes**
U.S. Department of Transportation
Federal Aviation Administration
800 Independence Ave. SW
Washington, DC 20591
1-866-835-5322
www.faa.gov/passengers/fly_children/crs/

Provides information and guidance for travelers with children. Downloadable brochure that caregivers may take with them when they travel. Additional information concerning travel tips, screening procedures, and traveling with children with disabilities may go to www.tsa.gov/travelers/airtravel/children

**Insurance Institute for Highway Safety**
Communications Dept.
1005 N. Glebe Rd.
Arlington, VA 22201
703-247-1500
www.hwysafety.org

Distributes the newsletter "Status Report", and produces low-cost videos on a variety of highway safety topics. Produce fact sheets and lists of state seat belt and child passenger safety laws.

**National Association for Pupil Transportation**
NAPT Foundation
111 Scooter Lane
Hicksville, New York 11801
516-579-1620
www.napt.org

A nonprofit group committed to enhancing the safety of children transported by school buses. Provides resources to inform local communities about the benefits of school bus transportation, conducts research regarding safer school buses and provides additional training and educational opportunities for pupil transportation professionals.
The National Child Passenger Safety Board was established to help provide program direction and technical guidance to states, communities and organizations as related to the National Standardized Child Passenger Safety Training Program (NSCPSTP). The mission of the Board is to maintain the quality and integrity of the NSCPSTP. This program is used to train and certify child passenger safety (CPS) technicians and instructors.

The Board works collaboratively with the National Highway Traffic Safety Administration and with the CPS Certifying Body. The Board channels insight from their representative organizations to NHTSA and the Certifying Body.

National Highway Traffic Safety Administration
Washington, DC 20590
Auto Safety Hotline: 888-327-4236
www.nhtsa.dot.gov

Federal agency with primary responsibility for establishing and enforcing motor vehicle safety standards. Establishes and promotes national and state highway safety related programs and materials including child passenger safety. Pamphlets, technical reports, program manuals, recall lists, etc. are available through NHTSA.

Find a Child Safety Seat Inspection Station - Search NHTSA’s Child Safety Seat Inspection Station Locator for Inspection Stations in your State or zip Code.

“Stand-alone” web sites administered by NHTSA include:
• www.safercar.gov for information on vehicle safety such as Buying a Safer car, crash rating reports, and NHTSA safety standards and regulations.
• www.safetyfeature.org for information on parenting and safety education.

National Safety Council
1121 Spring Lake Drive
Itasca, IL 60143-3201
630-285-1121
www.nsc.org

Safety belt tips and other important information on how to protect yourself and your family on the road.

Safe Kids Worldwide
1301 Pennsylvania Ave., NW
Suite 1000
Washington, DC 20004-1707
202-662-0600
cert.safekids.org
www.safekids.org

Safe Kids Worldwide is the certifying body for the National Standardized Child Passenger Safety Certification Training Program and manages the online system for registration and other certification processes.
For information on policies & procedures related to class scheduling, participant registration, certification, and recertification - as well as frequently asked questions and answers - visit the Safe Kids CPS Certification website.


**Safe Ride News Publications, Inc.**
PO Box 38
Edmonds, WA 98020
Phone: 800-403-1424 / 425-640-5710 • Fax: 425-640-5417
www.safericenews.com

National newsletter and technical updates related to child passenger, pedestrian, and bicycle safety. Available by subscription.

**SafetyBeltSafe U.S.A.**
PO Box 553
Altadena, CA 91001
310-222-6660
www.carseat.org
Safe Ride Helpline: 800-745-SAFE
Spanish Helpline: 600-747-SANO

Pamphlets in multiple languages, flyers on correct use of safety seats, training courses and materials, supplement to NHTSA distributed Manufacturers’ Instructions Notebook, recall list, and other materials.
Recommendations for Replacement of Crash-Involved Safety Belts & Child Restraints

Airbags, safety belts, and child restraints (CRs) are generally considered "one time use" products. After a crash they may need to be replaced. Without a doubt, airbags and pretensioners used with some belt systems must be replaced if they are activated during a crash.

Vehicle manufacturers also recommend that safety belts in use in a crash be replaced except in minor crashes. Some vehicle manufacturers suggest that the safety belts should be inspected by a service technician after any type or severity of collision. Contact your vehicle manufacturer's Customer Service for their guidelines and recommendations.

Most child restraint manufacturers recommend replacement of their child restraints after any crash. Contact your child restraint manufacturer's Customer Service for their guidelines and recommendations.

The National Highway Traffic Safety Administration (NHTSA) recommends that a child restraint always be replaced if it is involved in a moderate to severe crash. In general, automobile collision insurance should cover replacement of airbags, safety belts, and child restraints.

To determine if a crash is severe enough to warrant CR replacement, NHTSA advises parents/caregivers to use the following criteria:

1) Does a visual inspection of the child restraint (CR), including inspection under any easily movable seat padding, reveal any cracks or deformities that might have been caused by the crash?
   - Yes: Replace CR
   - No: Continue to next question

2) Did the vehicle in which the CR was installed have to be towed from the scene of the crash?
   - Yes: Replace CR
   - No: Continue to next question

3) Was the vehicle door nearest the CR damaged?
   - Yes: Replace CR
   - No: Continue to next question

4) Were there injuries to any of the vehicle occupants?
   - Yes: Replace CR
   - No: Continue to next question

5) Did the air bags in the vehicle (if any) deploy?
   - Yes: Replace CR
   - No: Replacement of CR not warranted

If the answer is "Yes" to ANY of the above questions, the crash is considered to be serious enough to warrant replacement of the child restraint.

If the answer is "No" to ALL of the above questions, the crash is NOT considered to be serious enough to warrant replacement of the child restraint.

For further information contact:
UNC Highway Safety Research Center
600-672-4527 / 919-962-2202
www.buckeupnc.org
www.hsre.unc.edu

NC Governor's Highway Safety Program
800-900-9678 / 919-733-3083
www.nccdot.org/secretary/GHSP

NC Department of Insurance
NC SAFE KIDS Buckle Up
800-634-7954 / 919-661-8880
www.ncsafekids.org

For further information or to order brochures or other educational materials, contact:

UNC Highway Safety Research Center
Revised: November 1, 2004
LATCH Makes Child Safety Seat Installation As Easy As 1, 2, 3

What is LATCH? (Lower Anchors and Tethers for Children)

LATCH is a system that makes child safety seat installation easier—without using seat belts. LATCH is required on child safety seats and most vehicles manufactured after September 1, 2002. LATCH is not required for booster seats, car beds, and vests.

How does LATCH work?

LATCH-equipped vehicles have at least two sets of small bars, called anchors, located in the back seat where the cushions meet. LATCH-equipped child safety seats have a lower set of attachments that fasten to these vehicle anchors. Most forward-facing child safety seats also have a top strap (top tether), that attaches to an anchor in the vehicle. Together, they make up the LATCH system.

How do you install a LATCH-equipped child seat?

1. **ALWAYS** read and follow the vehicle owner’s manual and child safety seat manufacturer’s instructions for correct installation and proper use.

2. Fasten the child safety seat’s lower attachments to the vehicle’s lower anchors. Tighten and adjust according to the instructions and check for a secure fit.

3. Attach the child safety seat’s top tether to the vehicle’s anchor and pull to tighten. The child safety seat should not move more than an inch forward or sideways. **NOTE:** Tethers are not used on most rear-facing child safety seats.

**NOTE:** Most vehicles will have lower anchors in the left and right rear seat positions. If there aren’t anchors in the center seat position, you can still safely install any child safety seat using a seat belt.

What if the child safety seat is an older seat that isn’t LATCH-equipped?

These seats must meet the same high standards and are safe if they are installed according to the vehicle owner’s manual and child safety seat manufacturer’s instructions, haven’t been recalled, and haven’t been damaged. Child safety seats that don’t have LATCH should be installed using seat belts, even in LATCH-equipped vehicles.

Before installing an older child safety seat, refer to the manufacturer’s instructions regarding how long the seat may be used.

What if a vehicle isn’t LATCH-equipped?

Any child safety seat can be safely installed using a seat belt and, if available, a top tether, following the vehicle owner’s manual and child safety seat manufacturer’s instructions. If the vehicle doesn’t have a top anchor, contact the manufacturer or dealership to see if it can be retrofitted.

Remember, children are safest when properly restrained in the back seat.

For a child safety seat inspection by a certified technician, call 1-866-SEAT-CHECK or visit www.seatcheck.org.

For more information, visit www.nhtsa.gov.

U.S. Department of Transportation
National Highway Traffic Safety Administration

DOT HS 809 489

September 2008
When you're an expectant mother, it's important to always wear your seat belt to protect you and your unborn child. Wear the lap belt across your hips and below your belly with the shoulder belt across your chest (between your breasts). Once your baby is born, follow these important safety steps.

GROWING UP SAFE: It's a four-step process.

As children grow, how they sit in your car, truck or SUV should change. Save your child from injury or death by observing all four steps:

**Car Seat Recommendations for Children**

- Select a car seat based on your child's age and size, and choose a seat that fits in your vehicle and use it every time.
- Always refer to your specific car seat manufacturer's instructions or the vehicle owner's manual on how to install the car seat using the seat belt or LATCH system and check height and weight limits.
- To maximize safety, keep your child in the car seat for as long as possible, as long as the child fits within the manufacturer's height and weight requirements.
- Keep your child in the back seat at least through age 12.

<table>
<thead>
<tr>
<th>AGE</th>
<th>DESCRIPTION ( Restraint Type)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth – 12 months</td>
<td>RISKS: CAR SEAT IS THE MOST IMPORTANT SEAT BELT TO PROTECT YOUR CHILD. SEAT BELT IS THE BEST WAY TO KEEP YOUR CHILD SAFE.</td>
</tr>
<tr>
<td>1 – 3 years</td>
<td>RISKS: CAR SEAT IS THE MOST IMPORTANT SEAT BELT TO PROTECT YOUR CHILD. SEAT BELT IS THE BEST WAY TO KEEP YOUR CHILD SAFE.</td>
</tr>
<tr>
<td>4 – 7 years</td>
<td>RISKS: CAR SEAT IS THE MOST IMPORTANT SEAT BELT TO PROTECT YOUR CHILD. SEAT BELT IS THE BEST WAY TO KEEP YOUR CHILD SAFE.</td>
</tr>
<tr>
<td>8 – 11 years</td>
<td>RISKS: CAR SEAT IS THE MOST IMPORTANT SEAT BELT TO PROTECT YOUR CHILD. SEAT BELT IS THE BEST WAY TO KEEP YOUR CHILD SAFE.</td>
</tr>
</tbody>
</table>

**Get Help!**

ON THE WEB

Go to [www.nhtsa.gov](http://www.nhtsa.gov) and choose Child Safety Seat Information from the menu or click on the child passenger safety icon. The site includes child safety seat installation tips, product ratings, recalls, and other useful information.

BY PHONE

For more information about child safety seats, booster seats, inspection/fitting stations in your area, seat belts, air bags, and other highway safety issues, call the DOT Vehicle Safety Hotline at: 1-888-327-4236.

NEAR YOU

A certified child passenger safety technician can check your installation and answer questions. To find a technician or an inspection station near you, go to [www.nhtsa.gov](http://www.nhtsa.gov), click on the child passenger safety icon, and then click on the Fitting/Inspection Station link or go to [www.seetcheck.org](http://www.seetcheck.org).

REMEMBER: All children under 13 should ride in the back seat.

Always read the child restraint instructions and the vehicle owner's manual.
Child Passenger Safety Glossary of Terms

**Active protection**: Protection features that require action by the occupant. These features include lap belts, lap and shoulder belts, and child restraint systems.

**Anchor**: A common short alternative term for anchorage for a seat belt or tether; often used to refer specifically to the hardware installed at the anchorage, either factory-installed or in a retrofit shoulder-belt or tether kit.

**Anchorages**: See anchor.

**Anti-rebound bar**: Bars help control rebound and decrease the possibility of head contact. Rebound is the “bounce” after initial impact has occurred.

**Shield booster**: A type of booster, as defined by FMVSS 213, that has a seating platform and a structure in front of the child for restraint, but which is subject to crash testing using only a lap belt and to the head excursion limit of only 813 mm.

**Belt-positioning booster seat (BPB)**: A crash-tested device that raises the child so that the required lap and shoulder belts fit correctly. All BPBs act as pre-crash positioning devices and must be used with lap and shoulder belts. BPB models may have high backs, or be backless.

**Belt sensitive**: Refers to a type of emergency locking retractor, which locks when the belt is pulled quickly.

**Belt path**: The path that the manufacturer is required to create so that the safety belt passes around or through the CR. Some seats have multiple belt paths. For example, convertible car seats have one belt path for rear-facing use and a separate one for forward-facing use.

**Belt shortening clip**: A heavy duty clip intended for use to shorten lap belts around a child restraint. Not to be confused with the standard locking clip that comes with a child safety seat. Must be purchased or ordered from vehicle manufacturer.

**Buckle**: The locking mechanism of the vehicle belt or child safety seat. The latchplate fits (clicks) into the buckle, which must have a red button.

**Caregiver**: A person responsible for a child’s well-being and safety.

**CPS**: Child passenger safety

**Car bed**: A restraint, usually for small, premature, or medically fragile infants who should ride prone or supine. In most cases, the infant lies flat. The vehicle seat belt is used to anchor the car bed perpendicular to the direction of travel. The infant’s head is placed toward the center of the vehicle and not next to the door. An internal harness secures the child in the car bed. Read instructions as there may be other methods of securing allowed for certain car beds.

**Car seat**: See Child Restraint
Child restraint (CR), child restraint system (CRS), child restraint device (CRD): A crash-tested device or system that is specially designed to provide infant/child crash protection. General term for systems including child safety seats, boosters, vests or car beds that meet FMVSS 213.

Children with special transportation needs: Children whose physical or behavioral conditions makes the use of particular, often specially designed, restraint systems necessary.

Combination seat: A type of forward-facing child restraint that is used with an internal harness system to secure a child. With removal of the internal harness, it is used as a belt-positioning booster (BPB).

Compartmentalization: Refers to the type of passive occupant protection seen in school buses, due to the narrow seat spacing and energy absorbent high back seats.

CR: See Child Restraint

Convertible seat: A child restraint that “converts” from rear-facing for infants and smaller children to forward-facing for older and larger children.

Crash dummies: Full-scale replicas of human beings, weighted and articulated to simulate the behavior of a human body in a vehicle mishap, and instrumented to record as much data as possible on numerous variables during a collision.

Crumple zone: The zone of a car that absorbs energy upon impact. The purpose of a crumple zone is to increase the amount of time it takes the car to come to a complete stop in comparison to object the car hits. By increasing the time it takes for the car to come to a stop after hitting an object, the force is spread over a longer period of time.

Dead zone: This occurs when an automatic locking retractor does not lock until the belt is extended a certain length. Locking will not occur in the dead zones until this length has been reached.

Detachable base: A separate base for a child restraint system that can be installed in the vehicle. The restraint (car seat) portion can be removed from the base, and used as an infant carrier.

Emergency locking retractor (ELR): A retractor on a safety belt system that locks in response to rapid deceleration of the vehicle. ELRs respond to rapid extraction of the belt or the sudden deceleration of the vehicle or both.

Excursion: The distance traveled by an occupant or test dummy in the direction of impact during a crash.

Forward-facing: A restraint that is intended for use only in the forward-facing position for a child at least age one and at least 20 pounds up to the specified limits of the seat, set by the manufacturer.

Harness: A system of straps that keep the child within the shell, distributes crash forces, and helps the child “ride down” the crash.

Harness retainer clip: A plastic tie or clasp that holds the shoulder straps together over the child’s chest at armpit level, a pre-crash positioning device intended to keep harness straps in position on the shoulders. It can also be referred to as a “chest clip.”
Harness adjuster: Used to tighten or loosen the harness the internal harness of a child restraint system.

Harness slot: The part of the CR where the harnesses pass through from the front to the back of the restraint. Seats come with at least one and as many as four sets of slots.

High-back booster seat: See “Belt positioning booster”

Infant-only seat: See “Rear-facing only seat”

Inspection station: A dedicated location staffed and stocked with equipment needed to regularly perform child restraint checks and installations. May also be referred to as a “checking station.”

Integrated child seat: A child-sized forward-facing restraint and/or BPB built into a vehicle seat. Some have a full harness. Others are belt-positioning boosters for use with lap and shoulder belts.

Labels: These are located on the seat, and indicate the following: 1) NHTSA certification of conformation to all applicable FMVSS. 2) Weight and height guidelines for the specific seat. 3) Basic outline of the installation procedures. 4) Manufacturing data, including data of manufacture, the manufacturers name and address, and a model number. 5) Air bag warning and 6) FAA certification for use in an aircraft.

Learn, Practice, Explain: The philosophy of the CPS Certification curriculum that promotes learning the latest in CPS, staying updated and active in the field, and teaching people how to safely transport children.

LATCH: Lower Anchors and Tethers for CHildren. Attachments on a LATCH-equipped child restraint fasten to lower anchors and a tether anchor in a LATCH-equipped vehicle. LATCH is required on child safety seats and most vehicles manufactured after September 1, 2002.

Latch plate: The part of the buckle mechanism that locks or connects into the buckle.

Level indicator: Helps parents and caregivers identify the manufacturer’s recommended correct angle for rear-facing restraints.

Lockability: Refers to the ability of the latch plate to prevent the webbing to slide back through the latch plate, causing the belt to loosen.

Lock-off: A built-in belt-locking feature on the child restraint system that works with certain types of safety belts in a similar fashion as locking clips.

Locking clip: A flat H-shaped metal item intended to clip lap and shoulder belt webbing together at a free-sliding latch plate in order to prevent the webbing from sliding through. A pre-crash positioning device only. Not to be used as a belt shortening clip.

Lower anchorage attachments: A piece of belt webbing that clips/clamps onto to the lower anchorage on the vehicle structure. These attachments are used in place of the vehicle safety belt to secure the CR to the vehicle.
**Passive occupant protection:** Features of the vehicle that lessen the injury to the occupant without any action taken by the occupant.

**Rebound:** Reactive motion in the opposite direction after initial impact has occurred.

**Rear-facing:** Refers to the position where the child’s child restraint is turned to face the rear of the vehicle. The rear-facing position supports the entire head, neck, and back; cradles and moves with the child to reduce stress to the neck and spinal cord in a crash.

**Rear-facing only seat:** A child restraint system designed for use only by a baby in a semi-reclined rear-facing position. Also called an “infant-only” seat.

**Recalls:** Voluntary or required actions taken to correct problems or deficiencies once products have been distributed or sold. Manufacturers must offer free repairs or replacement for products recalled for violations of safety standards.

**Recline adjustor:** Allows convertible restraints to be reclined for rear-facing and semi-reclined or upright for forward-facing use.

**Registration card:** A postage-paid return card that comes with every child restraint; should be returned to the manufacturer so owners can be notified of any recalls.

**Retractor:** A mechanism that rolls up the webbing of the safety belt when it is not in use and takes up slack around the user.

**Retrofit:** Installing, fitting, or adapting a device or system for use with something older. An example of this would be to retrofit seatbelts to a school bus without them.

**Ride down:** Ride down is the extension of time when the forces are felt by the occupant during a crash. A quick change in speed is what causes injury.

**Safety belt:** See “Seat belt”

**Seat belt:** The webbing, anchor, and buckle system that restrains the occupant in the vehicle. Also known as a safety belt.

**Seat Belt Syndrome:** Separation of the lumbar vertebrae and associated paralysis, due to the effects of a crash where only a lap belt was used.

**Seat bight:** The intersection between the bottom vehicle seat cushion and the back cushion.

**Seat padding:** The cushioning attached to a child restraint, on which the child sits.

**Shell/frame:** The molded plastic structure of the CR. In some models, the shell is attached to or reinforced by a metal frame.

**Shield booster:** Older models of booster seats, manufactured and sold when only lap belts were available in the rear seats of most vehicles, where the child sits on the booster base and the seat belt is routed around the front of a small padded shield in front of the child to hold the booster and the
child in place. There are no child boosters being manufactured at this time and it is not recommended to use a shield booster in a vehicle seating position that contains a lap/shoulder belt.

“Smart” air bags: An air bag system that will detect when a child is present and automatically deactivate the air bag or enable it to deploy safely. Manufacturers who do not provide a qualifying smart system would be required to have new and more prominent air bag warning labels inside the vehicle. They would also be permitted to install cutoff switches so parents can deactivate the passenger-side air bag when a child is seated in front of it.

Snug seat belt or lower LATCH attachments: Tight enough that the child restraint cannot move more than 1 inch in any direction from the belt path.

Snug harness: Harness straps do not allow any slack. It lies in a relatively straight line without sagging yet does not press into the child’s shoulders making an indentation. You should not be able to pinch the webbing vertically.

Special Needs: Refers to children with medical or physical conditions that prevent them from traveling normally in a standard child restraint. Alternative options for a safe ride are available for children with special needs.

Splitter Plate: Metal plate that connects the two ends of the shoulder harnesses to a single piece of webbing used for adjustment.

Technician: A person who successfully completes the standardized child passenger safety technician certification course and who successfully recertifies as required by the national CPS Certification program. The standardized child passenger safety certification program and who. The certification courses use the National Highway Traffic Safety Administration’s curriculum and Safe Kids Worldwide serves as the certifying body.

Tether: See Tether Strap

Tether anchor: The kit or installed hardware bracket used to secure the tether hook and strap at the designated anchor point in the vehicle. The tether strap and hook attach directly to the anchor bracket.

Tether strap: A piece of belt webbing that anchors the top of the CR to the vehicle structure. It keeps the restraint from tipping forward on impact and can provide an extra margin of protection. Can be optional or factory installed.

Webbing: The fabric of the safety belt that holds the occupant or a CR in place.
<table>
<thead>
<tr>
<th>English</th>
<th>Spanish</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Steps for Kids</td>
<td>4 Pasos para niños</td>
</tr>
<tr>
<td>Active protection</td>
<td>Protección activa</td>
</tr>
<tr>
<td>Acute exposure</td>
<td>Transferencia aguda</td>
</tr>
<tr>
<td>Additional Padding</td>
<td>Relleno adicional</td>
</tr>
<tr>
<td>Advanced air bag</td>
<td>Bolsa de aire moderna</td>
</tr>
<tr>
<td>Advocates</td>
<td>Defensores, Activistas</td>
</tr>
<tr>
<td>Advocacy skills</td>
<td>Destrezas de abogacia</td>
</tr>
<tr>
<td>Affordability</td>
<td>Cuando el precio está dentro de los medios del comprador, con el precio que usted puede pagar</td>
</tr>
<tr>
<td>After market products</td>
<td>Accesorios adicionales</td>
</tr>
<tr>
<td>Agreement form</td>
<td>Forma de común acuerdo</td>
</tr>
<tr>
<td>Air bags, “smart” air bags</td>
<td>Bolsas de aire, bolsas de aire “inteligentes”, bolsas de aire modernas</td>
</tr>
<tr>
<td>Air bag on-off switches</td>
<td>Interruptores para activar y desactivar las bolsas de aire</td>
</tr>
<tr>
<td>Air bag deployment</td>
<td>Despliegue de la bolsa de aire, cuando la bolsa de aire se infla</td>
</tr>
<tr>
<td>Aircraft</td>
<td>Avión</td>
</tr>
<tr>
<td>Aircraft safety issues</td>
<td>Asuntos sobre la seguridad de los aviones</td>
</tr>
<tr>
<td>Airway</td>
<td>Vía respiratoria</td>
</tr>
<tr>
<td>Anchor</td>
<td>Ancía</td>
</tr>
<tr>
<td>Anchor bracket</td>
<td>Soporte para el ancla</td>
</tr>
<tr>
<td>Anchor point</td>
<td>Punto de anclaje</td>
</tr>
<tr>
<td>Anchor strap</td>
<td>Correa del anclaje</td>
</tr>
<tr>
<td>Anchorage system</td>
<td>Sistema de anclaje</td>
</tr>
<tr>
<td>Armpit level</td>
<td>Al nivel de la axila</td>
</tr>
<tr>
<td>Armrest</td>
<td>Apoyo para el brazo</td>
</tr>
<tr>
<td>As tightly as possible</td>
<td>Lo más apretado posible</td>
</tr>
<tr>
<td>Assessment tool</td>
<td>Instrumento de evaluación</td>
</tr>
<tr>
<td>Auto safety</td>
<td>Seguridad del auto</td>
</tr>
<tr>
<td>Auto Safety Hot Line</td>
<td>Línea de Información Sobre la Seguridad del Auto</td>
</tr>
<tr>
<td>Automatic Locking Retractor (ALR)</td>
<td>Retractor que se inmoviliza automáticamente</td>
</tr>
<tr>
<td>Automatic restraint system</td>
<td>Sistema de seguridad automático</td>
</tr>
<tr>
<td>Automobile manufacturer</td>
<td>Autoturer Fabricante de vehículos</td>
</tr>
<tr>
<td>Back support</td>
<td>Espaldar, apoyo para la espalda, respaldo</td>
</tr>
<tr>
<td>Backless booster</td>
<td>Asiento elevado “booster” sin espalda, respaldo</td>
</tr>
<tr>
<td>Being thrown out of the car</td>
<td>Ser expulsado del vehículo</td>
</tr>
<tr>
<td>Belt path</td>
<td>Ruta o trayectoria del cinturón de seguridad</td>
</tr>
<tr>
<td>Belt-positioning “booster” seat, (3PB)</td>
<td>Asiento elevado “booster” con ajuste para el cinturón de seguridad</td>
</tr>
<tr>
<td>Belt pretensioner</td>
<td>Cinturón de seguridad con carrete retractable</td>
</tr>
<tr>
<td>English</td>
<td>Spanish</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Belt shortening clip</td>
<td>Sujetador (broche) para acortar el tejido del cinturón de seguridad</td>
</tr>
<tr>
<td>Bench seat</td>
<td>Asiento del vehículo tipo banco</td>
</tr>
<tr>
<td>Best practices</td>
<td>Practicas modelo, criterio que se usa para hacer las cosas de una manera mejor</td>
</tr>
<tr>
<td>Bight</td>
<td>Donde se une el respaldo y el asiento</td>
</tr>
<tr>
<td>Blanket</td>
<td>Manta, frazada</td>
</tr>
<tr>
<td>Booster seat</td>
<td>Asiento elevado &quot;booster&quot;, asiento que eleva al niño</td>
</tr>
<tr>
<td>Bounty program</td>
<td>Programa de subvención</td>
</tr>
<tr>
<td>Brain injury</td>
<td>Lesión cerebral</td>
</tr>
<tr>
<td>Bucket seat</td>
<td>Asiento del vehículo tipo deportivo</td>
</tr>
<tr>
<td>Buckle</td>
<td>Hebilla</td>
</tr>
<tr>
<td>Buckle up</td>
<td>Abrocharse el cinturon</td>
</tr>
<tr>
<td>Built-in lock-off locking clips</td>
<td>Sujetadores (broches) incorporados sin cierre</td>
</tr>
<tr>
<td>Built-in locking clips</td>
<td>Sujetadores (broches) incorporados</td>
</tr>
<tr>
<td>Built into</td>
<td>Incorporado móvil manufacturado</td>
</tr>
<tr>
<td>Bumper</td>
<td>Parachoques, defensa amortiguador de choques</td>
</tr>
<tr>
<td>C-Spine</td>
<td>Espina dorsal</td>
</tr>
<tr>
<td>Car bed</td>
<td>Asiento de seguridad tipo cara para infartes</td>
</tr>
<tr>
<td>Caregivers</td>
<td>Personas que cuidan niños</td>
</tr>
<tr>
<td>Cargo areas</td>
<td>Zonas de carga</td>
</tr>
<tr>
<td>Center front seat position</td>
<td>Posición central del asiento delantero</td>
</tr>
<tr>
<td>Check-up event</td>
<td>Evento en donde se revisan los asientos de seguridad para niños</td>
</tr>
<tr>
<td>Child Passenger Safety (CPS)</td>
<td>Seguridad del Niño Pasajero</td>
</tr>
<tr>
<td>Child Passenger Safety Programs</td>
<td>Programas sobre la Seguridad del Niño Pasajero</td>
</tr>
<tr>
<td>Child Passenger Safety Technician</td>
<td>Técnico en la Seguridad del Niño Pasajero</td>
</tr>
<tr>
<td>Child restraints, (CR)</td>
<td>Asientos de seguridad para niños, sistemas de seguridad para niños</td>
</tr>
<tr>
<td>Child Restraint (CR) anchorage</td>
<td>Sistema de anclaje para el asiento de seguridad</td>
</tr>
<tr>
<td>Child restraint crash tests</td>
<td>Pruebas de choque del asiento de seguridad</td>
</tr>
<tr>
<td>Child restraint harness straps</td>
<td>Correas del amén del asiento de seguridad para niños</td>
</tr>
<tr>
<td>Child restraint industry</td>
<td>Industria de asientos de seguridad para niños</td>
</tr>
<tr>
<td>Child restraint label</td>
<td>Etiqueta del asiento de seguridad para niños</td>
</tr>
<tr>
<td>Child restraint lower attachments</td>
<td>Conectadores inferiores del asiento de seguridad</td>
</tr>
<tr>
<td>Child restraint manual</td>
<td>Manual para el uso del propietario del asiento de seguridad para niños</td>
</tr>
<tr>
<td>Child restraint systems (CRS)</td>
<td>Sistemas o asientos de seguridad para niños, sistemas de protección para niños</td>
</tr>
<tr>
<td>Child restraint system (CRS) checkups</td>
<td>Revisiones de los asientos de seguridad para niños</td>
</tr>
<tr>
<td>English</td>
<td>Spanish</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Child restraint system (CRS) checkups event</td>
<td>Evento en donde se revisan los asientos de seguridad para niños</td>
</tr>
<tr>
<td>Child safety</td>
<td>Seguridad del niño</td>
</tr>
<tr>
<td>Childhood injury</td>
<td>Lesión sostenida durante la niñez</td>
</tr>
<tr>
<td>Children with Special Health Needs</td>
<td>Niños con necesidades especiales de salud</td>
</tr>
<tr>
<td>Cinching</td>
<td>Ajustar, apretar</td>
</tr>
<tr>
<td>Collapsible steering columns</td>
<td>Columnas del volante plegables</td>
</tr>
<tr>
<td>Collar bore</td>
<td>Clavicula</td>
</tr>
<tr>
<td>Collision/collisions</td>
<td>Colisión, choque</td>
</tr>
<tr>
<td>Consumer Products Safety Commission</td>
<td>Comisión de Seguridad para Productos de Consumo</td>
</tr>
<tr>
<td>Compartimentalization</td>
<td>Compartimentalización</td>
</tr>
<tr>
<td>Compatibility Issues</td>
<td>Asuntos sobre la compatibilidad</td>
</tr>
<tr>
<td>Compliance testing</td>
<td>Pruebas de cumplimiento</td>
</tr>
<tr>
<td>Community Outreach</td>
<td>Alcance Comunitario</td>
</tr>
<tr>
<td>Continuous loop belt</td>
<td>Cinturón que usa un sólo pedazo de tejido continuo para el cinturón de</td>
</tr>
<tr>
<td></td>
<td>hombro y regazo/falda. Empieza en el punto de anclaje y el otro</td>
</tr>
<tr>
<td></td>
<td>extremo termina en el retractor.</td>
</tr>
<tr>
<td>Conventional Child Restraint</td>
<td>Asiento de seguridad convencional para niños</td>
</tr>
<tr>
<td>Convertible restraints</td>
<td>Asientos de seguridad convertibles</td>
</tr>
<tr>
<td>Course overview</td>
<td>Resumen del curso</td>
</tr>
<tr>
<td>CFS</td>
<td>Seguridad del Niño Pasajero</td>
</tr>
<tr>
<td>Cracks</td>
<td>Rajaduras</td>
</tr>
<tr>
<td>Crash</td>
<td>Choque</td>
</tr>
<tr>
<td>Crash dynamics</td>
<td>Dinámica de choques</td>
</tr>
<tr>
<td>Crash forces</td>
<td>Fuerzas del choque</td>
</tr>
<tr>
<td>Crash phase</td>
<td>Etapa durante el choque</td>
</tr>
<tr>
<td>Crash sensor</td>
<td>Sensor de choques</td>
</tr>
<tr>
<td>Crash testing</td>
<td>Pruebas de cheque simulado</td>
</tr>
<tr>
<td>Crushable frame</td>
<td>Estructura o, marco comprimible</td>
</tr>
<tr>
<td>Dashboard</td>
<td>Panel o, tablero de instrumentos</td>
</tr>
<tr>
<td>Dealerships</td>
<td>Distribuidores, concesionarios</td>
</tr>
<tr>
<td>Deceleration</td>
<td>Disminución de la velocidad, deceleración</td>
</tr>
<tr>
<td>Defect investigation form</td>
<td>Formulario para la investigación de defectos</td>
</tr>
<tr>
<td>Defect monitoring</td>
<td>Control de defectos</td>
</tr>
<tr>
<td>Department of Motor Vehicles (DMV)</td>
<td>Departamento de Vehículos de Motor</td>
</tr>
<tr>
<td>Department of Transportation (DOT)</td>
<td>Departamento de Transporte</td>
</tr>
</tbody>
</table>

Adapted from NHTSA / DOT HS 809 892, October 2005
<table>
<thead>
<tr>
<th>English</th>
<th>Spanish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detachable base</td>
<td>Base removible</td>
</tr>
<tr>
<td>Devices</td>
<td>Mecanismos, aparatos</td>
</tr>
<tr>
<td>Dissecting Child Restraint Systems (CRS)</td>
<td>Analizar minuciosamente y desmontar (desarmar) los asientos de seguridad para niños</td>
</tr>
<tr>
<td>Driver</td>
<td>Conductor</td>
</tr>
<tr>
<td>Driver’s air bag module</td>
<td>Módulo de la bolsa de aire para el conductor</td>
</tr>
<tr>
<td>Dual-stage air bag</td>
<td>Bolsa de aire con dos etapas de despliegue/inflado</td>
</tr>
<tr>
<td>Dummy</td>
<td>Maniquí</td>
</tr>
<tr>
<td>Easter Seal Program: “Kids are Riding Safe Program” (KARS)</td>
<td>Programa de Easter Seal “Los niños viajan seguros”</td>
</tr>
<tr>
<td>Enforcement</td>
<td>Aplicación de la ley</td>
</tr>
<tr>
<td>Ejection</td>
<td>Expulsión</td>
</tr>
<tr>
<td>Emergency Medical Service (EMS)</td>
<td>Servicios de Emergencias Médicas</td>
</tr>
<tr>
<td>Emergency braking</td>
<td>Frenar de emergencia</td>
</tr>
<tr>
<td>Emergency locking retractor (ELR)</td>
<td>Retractor de cierre de emergencia</td>
</tr>
<tr>
<td>Energy management loops</td>
<td>Procedimiento utilizado en la manufacturación del tejido del cinturón para reforzar y controlar la energía</td>
</tr>
<tr>
<td>Energy management retractor</td>
<td>Retractor para controlar la energía</td>
</tr>
<tr>
<td>Environmental conditions</td>
<td>Condiciones ambientales</td>
</tr>
<tr>
<td>E-Z-On Vest</td>
<td>Chaleco “E-Z-On” (Fácil de Ponerse)</td>
</tr>
<tr>
<td>Fatal Analysis Reporting System (FARS)</td>
<td>Sistema de información de análisis fatales</td>
</tr>
<tr>
<td>Features</td>
<td>Accesorios o rasgos distintivos, características o accesorios adicionales</td>
</tr>
<tr>
<td>Federal Aviation Administration (FAA)</td>
<td>Administración Federal de Aviación</td>
</tr>
<tr>
<td>Federal Motor Vehicle Safety Standards (FMVSS)</td>
<td>Normas Federales de Seguridad para Vehículos de Motor</td>
</tr>
<tr>
<td>Federal Role</td>
<td>Función del gobierno federal</td>
</tr>
<tr>
<td>5 - Point harness</td>
<td>Arnés de 5 puntos</td>
</tr>
<tr>
<td>Flame retardant padding</td>
<td>Relleno resistente al fuego, relleno que retarda el fuego</td>
</tr>
<tr>
<td>Flexible latch system seat</td>
<td>Asiento de seguridad con sistema de anclaje flexible</td>
</tr>
<tr>
<td>Flexible 2-point lower attachment</td>
<td>Conexión inferior flexible de dos puntos</td>
</tr>
<tr>
<td>Forward-facing child restraint</td>
<td>Asiento de seguridad que se instala mirando hacia el frente</td>
</tr>
<tr>
<td>Forward-facing only child restraint</td>
<td>Asiento de seguridad que solamente se instala mirando hacia el frente</td>
</tr>
<tr>
<td>Frame</td>
<td>Estructura, marco</td>
</tr>
<tr>
<td>Fray</td>
<td>Deshilachar</td>
</tr>
<tr>
<td>Free-sliding latch plate</td>
<td>Placa de cierre deslizable</td>
</tr>
<tr>
<td>Friendly interior</td>
<td>Interior que provee protección adicional</td>
</tr>
</tbody>
</table>

Adapted from NHTSA / DOT HS 809 892, October 2006
<table>
<thead>
<tr>
<th><strong>English</strong></th>
<th><strong>Spanish</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Front air bags</td>
<td>Bolsas de aire delanteras</td>
</tr>
<tr>
<td>Front seat</td>
<td>Asiento delantero</td>
</tr>
<tr>
<td>Front passenger seat</td>
<td>Asiento delantero del pasajero</td>
</tr>
<tr>
<td>Frontal crash</td>
<td>Choque frontal</td>
</tr>
<tr>
<td>Fuel system</td>
<td>Sistema de combustible</td>
</tr>
<tr>
<td>Guard rails</td>
<td>Barandas, rieles, barreras de seguridad</td>
</tr>
<tr>
<td>Guidelines</td>
<td>Guías, pautas, principios</td>
</tr>
<tr>
<td>Hand-me down seat</td>
<td>Asiento de segunda mano</td>
</tr>
<tr>
<td>Handouts</td>
<td>Materiales impresos, comunicados, folletos</td>
</tr>
<tr>
<td>Hands-on exercises</td>
<td>Ejercicios prácticos</td>
</tr>
<tr>
<td>Hardware</td>
<td>Piezas, partes, materiales</td>
</tr>
<tr>
<td>Harness</td>
<td>Arrés</td>
</tr>
<tr>
<td>Harness Adjuster Bar</td>
<td>Varilla para ajustar el arrés</td>
</tr>
<tr>
<td>Harness retainer clip</td>
<td>Retenedor del arrés, broche retentivo del arrés</td>
</tr>
<tr>
<td>Harness slots</td>
<td>Ranuras para el arrés</td>
</tr>
<tr>
<td>Harness snug</td>
<td>Arrés ajustado</td>
</tr>
<tr>
<td>Harness straps</td>
<td>Correas del arrés</td>
</tr>
<tr>
<td>Harness system</td>
<td>Sistema de arrés</td>
</tr>
<tr>
<td>Head excursion</td>
<td>Movimiento de la cabeza</td>
</tr>
<tr>
<td>Head Injury Criterion (HIC)</td>
<td>Criterios sobre lesión cerebral, criterios de traumatismo cerebral</td>
</tr>
<tr>
<td>Head restraint</td>
<td>Cabecera, respaldo para la cabeza</td>
</tr>
<tr>
<td>Heavy duty tape</td>
<td>Cinta engomada extra fuerce</td>
</tr>
<tr>
<td>High back booster seat</td>
<td>Asiento elevado “booster” con espalda, respaldo</td>
</tr>
<tr>
<td>Highway</td>
<td>Carretera, autopista</td>
</tr>
<tr>
<td>Highway safety</td>
<td>Seguridad en las carreteras</td>
</tr>
<tr>
<td>Host variables</td>
<td>Variables humanas</td>
</tr>
<tr>
<td>Hot Line</td>
<td>Ver “Auto Safety Hot Line”, Línea Telefónica Gratuita</td>
</tr>
<tr>
<td>Household carrier</td>
<td>Portador para bebes de uso doméstico</td>
</tr>
<tr>
<td>Human collision</td>
<td>Colisión del cuerpo</td>
</tr>
<tr>
<td>Human error</td>
<td>Error humano</td>
</tr>
<tr>
<td>Improper installation in vehicles</td>
<td>Instalación incorrecta en los vehículos</td>
</tr>
<tr>
<td>Incompatibility</td>
<td>Incompatibilidad</td>
</tr>
<tr>
<td>Infants</td>
<td>Infantes, bebés</td>
</tr>
<tr>
<td>Inflatable curtain (IC)</td>
<td>Cortina inflable</td>
</tr>
<tr>
<td>Inflatable tubular air bags Injury</td>
<td>Bolsa de aire inflativa en forma de tubo Lesión</td>
</tr>
<tr>
<td>Injury facts</td>
<td>Datos sobre las lesiones</td>
</tr>
<tr>
<td>Injury outcome</td>
<td>Consecuencias de las lesiones</td>
</tr>
<tr>
<td>English</td>
<td>Spanish</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>--------------------------------------------------------------</td>
</tr>
<tr>
<td>Injury prevention</td>
<td>Prevención de lesiones</td>
</tr>
<tr>
<td>Integrated seat</td>
<td>Asiento integrado</td>
</tr>
<tr>
<td>Integrated child restraint</td>
<td>Asiento de seguridad integrado al asiento del vehículo</td>
</tr>
<tr>
<td>Intentional injuries,</td>
<td>Lesión intencional</td>
</tr>
<tr>
<td>Interactive discussion</td>
<td>Conversaciones interactiva</td>
</tr>
<tr>
<td>Interactive questioning</td>
<td>Interrogatorio interactivo, práctica, diálogo</td>
</tr>
<tr>
<td>Internal harness</td>
<td>Armés interno</td>
</tr>
<tr>
<td>Issues</td>
<td>Situaciones, asuntos, problemas</td>
</tr>
<tr>
<td>Jump seat</td>
<td>Asiento plegable</td>
</tr>
<tr>
<td>Juvenile Products Manufacturers Association (JPMA)</td>
<td>Asociación de Fabricantes de Productos para Niños</td>
</tr>
<tr>
<td>Knee bolster</td>
<td>Soporte para la rodilla</td>
</tr>
<tr>
<td>Knee excursion</td>
<td>Movimiento de la rodilla</td>
</tr>
<tr>
<td>Lap/Shoulder belt (L/S belt)</td>
<td>Cinturón de regazo y hombro</td>
</tr>
<tr>
<td>Label</td>
<td>Etiqueta</td>
</tr>
<tr>
<td>Lap belts</td>
<td>Cinturones de regazo/ralda</td>
</tr>
<tr>
<td>Lap only belts</td>
<td>Cinturones de regazo solamente</td>
</tr>
<tr>
<td>Label requirements</td>
<td>Requisitos de la etiqueta</td>
</tr>
<tr>
<td>LATCH. Lower Anchors and Tethers for Children</td>
<td>Sistema de anclaje inferior superior LATCH</td>
</tr>
<tr>
<td>LATCH attachments</td>
<td>Conexiones para el sistema de anclaje LATCH</td>
</tr>
<tr>
<td>Latch plate</td>
<td>Placa de cierre</td>
</tr>
<tr>
<td>LATCH System</td>
<td>Sistema de anclaje LATCH</td>
</tr>
<tr>
<td>Lateral crash</td>
<td>Choque lateral</td>
</tr>
<tr>
<td>Law enforcement vehicle (LE vehicle)</td>
<td>Vehículo de la policía, patrulla de seguridad</td>
</tr>
<tr>
<td>Liability</td>
<td>Responsabilidad legal por daños y perjuicios, obligación legal</td>
</tr>
<tr>
<td>Light pickup truck</td>
<td>Camioneta de carga ligera, carga liviana</td>
</tr>
<tr>
<td>Lightweight locking latch plate</td>
<td>Placa de cierre de agarre liviano</td>
</tr>
<tr>
<td>Load limiter</td>
<td>Limitador de carga</td>
</tr>
<tr>
<td>Lobby</td>
<td>Procurar, promover la aprobación de una ley, cabildear</td>
</tr>
<tr>
<td>Locking bar</td>
<td>Barra de agarre</td>
</tr>
<tr>
<td>Locking clip</td>
<td>Sujetador (broche) que se usa para fijar el cinturón de seguridad</td>
</tr>
<tr>
<td>Locking latch plate</td>
<td>Placa de cierre con agarre</td>
</tr>
<tr>
<td>Log sheet</td>
<td>Hoja de registro</td>
</tr>
<tr>
<td>Long-term disability</td>
<td>Discapacidad prolongada</td>
</tr>
<tr>
<td>Lower anchors</td>
<td>Anclas de la parte inferior</td>
</tr>
<tr>
<td>Manual adjusting lap belt</td>
<td>Cinturón de seguridad con ajuste manual</td>
</tr>
<tr>
<td>English</td>
<td>Spanish</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-----------------------------------------------------------</td>
</tr>
<tr>
<td>Manual lap belt</td>
<td>Cinturón de regazo manual</td>
</tr>
<tr>
<td>Manufacturer</td>
<td>Fabricante, manufacturador</td>
</tr>
<tr>
<td>Manufacturer's labels</td>
<td>Etiquetas del fabricante</td>
</tr>
<tr>
<td>Minivan</td>
<td>Mini-autobús “minivan”</td>
</tr>
<tr>
<td>Misuse</td>
<td>Uso incorrecto</td>
</tr>
<tr>
<td>Module Content</td>
<td>Contenido del Módulo</td>
</tr>
<tr>
<td>Motor vehicle crash (MVC)</td>
<td>Choque de vehículo motorizado</td>
</tr>
<tr>
<td>Motorized shoulder belt</td>
<td>Cinturón de hombro automático</td>
</tr>
<tr>
<td>National Academy of Sciences,</td>
<td>Academia Nacional de las Ciencias Junta Directiva</td>
</tr>
<tr>
<td>(NAS)</td>
<td></td>
</tr>
<tr>
<td>National Child Passenger Safety</td>
<td>Nacional de Seguridad del Niño Pasajero</td>
</tr>
<tr>
<td>Board (NCPSE)</td>
<td></td>
</tr>
<tr>
<td>National Highway Traffic Safety</td>
<td>Administración Nacional de Seguridad del Tráfico en las</td>
</tr>
<tr>
<td>Administration (NHTSA)</td>
<td>Carreteras</td>
</tr>
<tr>
<td>National Safety Council (NSC)</td>
<td>Consejo Nacional de Seguridad</td>
</tr>
<tr>
<td>Newborn</td>
<td>Recién nacido</td>
</tr>
<tr>
<td>Newton's Law of Motion</td>
<td>Ley del Movimiento de Newton</td>
</tr>
<tr>
<td>Occupant ejections</td>
<td>Expulsión de los ocupantes</td>
</tr>
<tr>
<td>Occupant protection</td>
<td>Protección del ocupante</td>
</tr>
<tr>
<td>Occupant Protection Programs</td>
<td>Programas de Protección al Ocupante</td>
</tr>
<tr>
<td>Occupant Protection System (OPS)</td>
<td>Sistema de seguridad para el ocupante</td>
</tr>
<tr>
<td>On/off switch</td>
<td>Interruptor para activar o desactivar</td>
</tr>
<tr>
<td>Outboard position</td>
<td>Posición lateral en la parte trasera del vehículo (al lado de la puerta)</td>
</tr>
<tr>
<td>Outboard passenger seat</td>
<td>Asiento lateral para el pasajero en la parte trasera del vehículo</td>
</tr>
<tr>
<td>Outside force</td>
<td>Fuerza externa</td>
</tr>
<tr>
<td>Overhead infrared sensors</td>
<td>Sensores de rayos infrarrojos de techo</td>
</tr>
<tr>
<td>Overhead ultrasound sensors</td>
<td>Sensores de ultrasonido del techo</td>
</tr>
<tr>
<td>Padding</td>
<td>Relieve</td>
</tr>
<tr>
<td>Parts</td>
<td>Partes, piezas</td>
</tr>
<tr>
<td>Passenger air bag</td>
<td>Bolsa de aire para el pasajero</td>
</tr>
<tr>
<td>Passenger vehicles</td>
<td>Vehículos de pasajeros</td>
</tr>
<tr>
<td>Passive protection</td>
<td>Protección pasiva</td>
</tr>
<tr>
<td>Pedestrian</td>
<td>Peatón</td>
</tr>
<tr>
<td>Peer</td>
<td>Individuo semejante, companero</td>
</tr>
<tr>
<td>Performance standards</td>
<td>Normas de funcionamiento</td>
</tr>
<tr>
<td>Phases of a crash</td>
<td>Etapas (fases) de un choque</td>
</tr>
<tr>
<td>Physical environment variables</td>
<td>Variables del ambiente físico</td>
</tr>
</tbody>
</table>

Adapted from NHTSA / DOT HS 806 892. October 2005
<table>
<thead>
<tr>
<th>English</th>
<th>Spanish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pickup truck</td>
<td>Camióneta, camióneta de carga, camióneta extendida, camión tipo “pick up”</td>
</tr>
<tr>
<td>Post-crash phase</td>
<td>Etapa/fase después del choque</td>
</tr>
<tr>
<td>Pre-crash phase</td>
<td>Fase antes del choque</td>
</tr>
<tr>
<td>Pre-crash speed</td>
<td>Velocidad antes del choque</td>
</tr>
<tr>
<td>Pretensioner</td>
<td>Carrete retractable</td>
</tr>
<tr>
<td>Product life</td>
<td>Vida útil del producto</td>
</tr>
<tr>
<td>Prone</td>
<td>Acostado boca abajo</td>
</tr>
<tr>
<td>Ratchet</td>
<td>Mecanismo de engranaje, trinquete</td>
</tr>
<tr>
<td>Rear bench seats</td>
<td>Asientos traseros tipo banco</td>
</tr>
<tr>
<td>Rear-end crash</td>
<td>Choque trasero</td>
</tr>
<tr>
<td>Rear facing CR</td>
<td>Asiento de seguridad que se instala mirando hacia atrás</td>
</tr>
<tr>
<td>Rear seat position</td>
<td>Posición en el asiento trasero</td>
</tr>
<tr>
<td>Rear window</td>
<td>Ventana trasera</td>
</tr>
<tr>
<td>Rear-end collisions</td>
<td>Choques traseros</td>
</tr>
<tr>
<td>Rear-end impacts</td>
<td>Impactos traseros</td>
</tr>
<tr>
<td>Recalls</td>
<td>Productos con avisos de retiro del mercado a causa de defectos</td>
</tr>
<tr>
<td>Recline adjustment mechanism</td>
<td>Ajustador de reclinación</td>
</tr>
<tr>
<td>Recline angle</td>
<td>Ángulo de reclinación</td>
</tr>
<tr>
<td>Recline indicator</td>
<td>Indicador de reclinación</td>
</tr>
<tr>
<td>Reclined position</td>
<td>Posición reclinada</td>
</tr>
<tr>
<td>Registration card</td>
<td>Tarjeta de inscripción, registro</td>
</tr>
<tr>
<td>Regular locking clip</td>
<td>Sujetador regular de metal</td>
</tr>
<tr>
<td>Retainer</td>
<td>Retenedor</td>
</tr>
<tr>
<td>Retainer clip</td>
<td>Broche retenedor del arnés</td>
</tr>
<tr>
<td>Retainer snug</td>
<td>Arnés bien ajustado</td>
</tr>
<tr>
<td>Rescue workers</td>
<td>Personal de rescate</td>
</tr>
<tr>
<td>Research</td>
<td>Investigación, análisis</td>
</tr>
<tr>
<td>Restrainted</td>
<td>Asegurado al sistema de seguridad</td>
</tr>
<tr>
<td>Restraint base</td>
<td>Base del asiento de seguridad</td>
</tr>
<tr>
<td>Restraining force</td>
<td>Fuerza limitadora</td>
</tr>
<tr>
<td>Restraining straps</td>
<td>Correas del sistema de seguridad</td>
</tr>
<tr>
<td>Restraint systems</td>
<td>Sistemas de seguridad</td>
</tr>
<tr>
<td>Retractor</td>
<td>Retractor</td>
</tr>
<tr>
<td>Retrofit lap belts</td>
<td>Cinturones de seguridad que se han añadido después</td>
</tr>
<tr>
<td>“Ride down”</td>
<td>Disminución de las fuerzas del choque, disminuir/amortiguar el impacto del choque</td>
</tr>
<tr>
<td>Rigid attachments</td>
<td>Conexiones rígidas, conectadores rígidos</td>
</tr>
<tr>
<td>English</td>
<td>Spanish</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>Rigid Latch System Seat</td>
<td>Asiento de seguridad con sistema de anclaje rígido</td>
</tr>
<tr>
<td>Role</td>
<td>Papel, función</td>
</tr>
<tr>
<td>Role play exercises</td>
<td>Ejercicios de ensayo improvisados</td>
</tr>
<tr>
<td>Rollover</td>
<td>Vuelco, volcarse</td>
</tr>
<tr>
<td>Rotation</td>
<td>Vueltas</td>
</tr>
<tr>
<td>Routing</td>
<td>Ruta</td>
</tr>
<tr>
<td>Rubber mat</td>
<td>Tapete o alfombra de goma, hule, caucho</td>
</tr>
<tr>
<td>Safety</td>
<td>Seguridad</td>
</tr>
<tr>
<td>Safety belt</td>
<td>Cinturón de seguridad</td>
</tr>
<tr>
<td>Safety issues</td>
<td>Problemas de seguridad</td>
</tr>
<tr>
<td>Safety rationale</td>
<td>Fundamento de seguridad</td>
</tr>
<tr>
<td>Safety seat harness</td>
<td>Arnés del asiento de seguridad</td>
</tr>
<tr>
<td>Safety standards</td>
<td>Normas de seguridad</td>
</tr>
<tr>
<td>School bus seats</td>
<td>Asientos del autobús escolar</td>
</tr>
<tr>
<td>School buses</td>
<td>Autobuses escolares</td>
</tr>
<tr>
<td>Scribes</td>
<td>Escribientes, redactores</td>
</tr>
<tr>
<td>Seat</td>
<td>Asiento</td>
</tr>
<tr>
<td>Seat back</td>
<td>Respaldo/espaldar del asiento</td>
</tr>
<tr>
<td>Seat belt</td>
<td>Cinturón de seguridad</td>
</tr>
<tr>
<td>Seat belt configuration</td>
<td>Tipo de cinturón de seguridad</td>
</tr>
<tr>
<td>Seat belt features</td>
<td>Atributos distintivos del cinturón de seguridad</td>
</tr>
<tr>
<td>Seat belt pretensioner</td>
<td>Carrete retractable del cinturón de seguridad</td>
</tr>
<tr>
<td>Seat belt system</td>
<td>Sistema de cinturones de seguridad</td>
</tr>
<tr>
<td>Seat bight</td>
<td>Recodo del asiento</td>
</tr>
<tr>
<td>Seat cushion contour</td>
<td>Contorno del asiento</td>
</tr>
<tr>
<td>Seat frame</td>
<td>Estructura, marco del asiento</td>
</tr>
<tr>
<td>Seat’s padding</td>
<td>Relleno del asiento</td>
</tr>
<tr>
<td>Seat slope</td>
<td>Inclinación del asiento</td>
</tr>
<tr>
<td>Seat weight sensor</td>
<td>Sensor de peso dentro del asiento</td>
</tr>
<tr>
<td>Second hand child seat</td>
<td>Asiento de seguridad de segunda mano</td>
</tr>
<tr>
<td>Self-certify</td>
<td>Auto-certificar</td>
</tr>
<tr>
<td>Self-study module</td>
<td>Módulo de estudio independiente</td>
</tr>
<tr>
<td>Service Station</td>
<td>Estación de servicio</td>
</tr>
<tr>
<td>Sewn – on latch plate</td>
<td>Placa de cierre cosida</td>
</tr>
<tr>
<td>Shell</td>
<td>Armazón</td>
</tr>
<tr>
<td>Shield booster seat</td>
<td>Asiento elevado “booster” con escudo protector</td>
</tr>
</tbody>
</table>

Adapted from: NHTSA / DOT HS 808 892, October 2005
<table>
<thead>
<tr>
<th>English</th>
<th>Spanish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoulder belt positioners Shoulder belts</td>
<td>Ajustadores para el cinturón de hombro Cinturones de hombro</td>
</tr>
<tr>
<td>Shoulder restraint</td>
<td>Cinturón de hombro</td>
</tr>
<tr>
<td>Side-facing jump seat</td>
<td>Asiento plegable lateral que mira hacia el interior del vehículo</td>
</tr>
<tr>
<td>Side-facing seat</td>
<td>Asiento plegable que miran hacia el lado</td>
</tr>
<tr>
<td>Side impact air bag (SIAB)</td>
<td>Bolsa de aire contra impacto lateral</td>
</tr>
<tr>
<td>Side impact crash</td>
<td>Choque lateral, con impacto por el lado</td>
</tr>
<tr>
<td>Side impact protection system (SIPS)</td>
<td>Sistema de seguridad contra impacto lateral</td>
</tr>
<tr>
<td>Side window</td>
<td>Ventana lateral</td>
</tr>
<tr>
<td>Skid</td>
<td>Patinazo</td>
</tr>
<tr>
<td>Slack in the seat belt</td>
<td>Cinturón de seguridad fijo</td>
</tr>
<tr>
<td>Sled testing</td>
<td>Prueba de trineo, mecanismo que se utiliza en pruebas de choques</td>
</tr>
<tr>
<td>Sliding latch plate</td>
<td>Placa de cierre deslizable o corroída</td>
</tr>
<tr>
<td>Slight indentation</td>
<td>Hundimiento leve</td>
</tr>
<tr>
<td>Snugly</td>
<td>Bien ajustado</td>
</tr>
<tr>
<td>Special needs CRS</td>
<td>Sistema de seguridad para niños con necesidades especiales</td>
</tr>
<tr>
<td>Spinal cord</td>
<td>Médula espinal, espina dorsal</td>
</tr>
<tr>
<td>Spine</td>
<td>Columna vertebral</td>
</tr>
<tr>
<td>Spins</td>
<td>Dar vueltas, girar</td>
</tr>
<tr>
<td>Splitter plate</td>
<td>Placa de separación</td>
</tr>
<tr>
<td>Standardization</td>
<td>Uniformación, normalización, estandarización</td>
</tr>
<tr>
<td>Stancardized bench seat</td>
<td>Asiento estándar tipo banco</td>
</tr>
<tr>
<td>Standardized Child Passenger Safety Training Program</td>
<td>Programa Nacional Uniforme de Adiestramiento en Sistemas de Seguridad del Niño Pasajero</td>
</tr>
<tr>
<td>Standardized CR anchorage</td>
<td>Anclaje uniforme para el asiento de seguridad</td>
</tr>
<tr>
<td>Steering wheel</td>
<td>Volante, timón</td>
</tr>
<tr>
<td>Sun visor</td>
<td>Parasol, visera</td>
</tr>
<tr>
<td>Supine</td>
<td>Inclinado</td>
</tr>
<tr>
<td>Supplemental Inflammable Restraint (SIR)</td>
<td>Sistema de Seguridad Inflamable Suplementario</td>
</tr>
<tr>
<td>Supplemental Restraint System (SRS)</td>
<td>Sistema de Seguridad Suplementario</td>
</tr>
<tr>
<td>Swerves</td>
<td>Desviarse bruscamente de lado a lado</td>
</tr>
<tr>
<td>Switchable</td>
<td>Intercambiable</td>
</tr>
<tr>
<td>Switchable latch plates</td>
<td>Placas de cierre intercambiable</td>
</tr>
<tr>
<td>Switchable retractor</td>
<td>Retractor intercambiable</td>
</tr>
<tr>
<td>T-Shield</td>
<td>Escudo en forma de T</td>
</tr>
</tbody>
</table>

Adapted from NHTSA / DOT HS 809 892, October 2005
<table>
<thead>
<tr>
<th>English</th>
<th>Spanish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Criteria</td>
<td>Criterio de prueba</td>
</tr>
<tr>
<td>Tether</td>
<td>Correa de sujeción del sistema de anclaje LATCH</td>
</tr>
<tr>
<td>Tether anchor</td>
<td>Punto de conexión para la correa anclaje</td>
</tr>
<tr>
<td>Tether anchor strap</td>
<td>Correa del anclaje</td>
</tr>
<tr>
<td>Tether hook</td>
<td>Ganchos para la correa del sistema de LATCH</td>
</tr>
<tr>
<td>Tether strap kit</td>
<td>Conjunto de correas de sujeción para el sistema de anclaje LATCH</td>
</tr>
<tr>
<td>The retractor locks</td>
<td>El retractor se cierra, se agarra</td>
</tr>
<tr>
<td>Thread it through</td>
<td>Pasar a través</td>
</tr>
<tr>
<td>Three-point restraint</td>
<td>Cinturón de seguridad de tres puntos</td>
</tr>
<tr>
<td>To record</td>
<td>Anclar, documentar</td>
</tr>
<tr>
<td>Toddler</td>
<td>Niño pequeño</td>
</tr>
<tr>
<td>Top tether</td>
<td>Correa de sujeción en la parte superior del sistema de anclaje</td>
</tr>
<tr>
<td>Tough choices</td>
<td>Decisiones difíciles</td>
</tr>
<tr>
<td>Traffic crashes</td>
<td>Cheques automovilísticos</td>
</tr>
<tr>
<td>Traffic Injury Control</td>
<td>Programas de Control de Lesiones de Programs Tráfico</td>
</tr>
<tr>
<td>Trapped</td>
<td>Atrapado</td>
</tr>
<tr>
<td>Trey Shield</td>
<td>Protector tipo bandeja/charola</td>
</tr>
<tr>
<td>&quot;TREAD Act&quot;, Transportation Recall Enhancement, Accountability and Documentation Act</td>
<td>Acta de Documentación, Responsabilidad y Realice de Productos de Transportacion con Aviso de Retiro del Mercado</td>
</tr>
<tr>
<td>Two-point seat belt</td>
<td>Cinturón de seguridad de dos puntos</td>
</tr>
<tr>
<td>Unintentional damage/injuries</td>
<td>Lesiones no - intencionales</td>
</tr>
<tr>
<td>Unrestrained occupants</td>
<td>Pasajeros que no utilizan el cinturon de seguridad</td>
</tr>
<tr>
<td>Unsurvivable crashes</td>
<td>Cheques sin sobrevivientes</td>
</tr>
<tr>
<td>Up-to-date information</td>
<td>Información al día, actualizada</td>
</tr>
<tr>
<td>Upper tether anchorage</td>
<td>Anclaje de la parte superior</td>
</tr>
<tr>
<td>Upper thighs</td>
<td>Parte de arriba de los muslos</td>
</tr>
<tr>
<td>Upright forward-facing position</td>
<td>Posición vertical orientada hacia el frente</td>
</tr>
<tr>
<td>Upright position</td>
<td>Posición vertical, posición erguida</td>
</tr>
<tr>
<td>Upward</td>
<td>Hacia arriba</td>
</tr>
<tr>
<td>Vaults</td>
<td>Volteretas</td>
</tr>
<tr>
<td>Vehicle anchoring system</td>
<td>Sistema de anclaje del vehículo</td>
</tr>
<tr>
<td>Vehicle compatibility</td>
<td>Compatibilidad del vehículo</td>
</tr>
<tr>
<td>Vehicle design</td>
<td>Diseño del vehículo</td>
</tr>
<tr>
<td>Vehicle features</td>
<td>Características o accesorios distintivos del vehículo</td>
</tr>
<tr>
<td>Vehicle occupant protection system</td>
<td>Sistema de seguridad para los ocupantes del vehículo</td>
</tr>
<tr>
<td>Vehicle owner’s manual</td>
<td>Manual del vehículo para el propietario</td>
</tr>
</tbody>
</table>

Adapted from NHTSA / DOT HS 808 892, October 2005
<table>
<thead>
<tr>
<th>English</th>
<th>Spanish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle restraint systems</td>
<td>Sistemas de seguridad en los vehículos</td>
</tr>
<tr>
<td>Vehicle seat bght</td>
<td>Recodo del asiento del vehículo</td>
</tr>
<tr>
<td>Vehicle systems ID</td>
<td>Sistemas de identificación en los vehículos</td>
</tr>
<tr>
<td>Vouchers</td>
<td>Comprobantes</td>
</tr>
<tr>
<td>Waiver of liability of claim</td>
<td>Declaración de renuncia al derecho de reclamo</td>
</tr>
<tr>
<td>Warning labels</td>
<td>Etiquetas de advertencia, etiquetas con avisos</td>
</tr>
<tr>
<td>Warning lights</td>
<td>Luces de advertencia de emergencia</td>
</tr>
<tr>
<td>Warning systems</td>
<td>Sistemas de advertencia</td>
</tr>
<tr>
<td>Web site address</td>
<td>Dirección del sitio web</td>
</tr>
<tr>
<td>Webbing</td>
<td>Tejido del cinturón de seguridad</td>
</tr>
<tr>
<td>Weight of the object struck</td>
<td>Peso del objeto golpeado</td>
</tr>
<tr>
<td>Weight of the occupant</td>
<td>Peso del ocupante</td>
</tr>
<tr>
<td>Whiplash</td>
<td>Lesión de latigazo en el cuello</td>
</tr>
<tr>
<td>Windshield</td>
<td>Parabrisas</td>
</tr>
<tr>
<td>Español</td>
<td>English</td>
</tr>
<tr>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>4 Pasos para niños</td>
<td>4 Steps for Kids</td>
</tr>
<tr>
<td>Abrocharse el cinturón</td>
<td>Buckle up</td>
</tr>
<tr>
<td>Academia Nacional de las Ciencias</td>
<td>National Academy of Sciences, (NAS)</td>
</tr>
<tr>
<td>Accesorios adicionales</td>
<td>After market products</td>
</tr>
<tr>
<td>Accesorios o rasgos distintivos, características accesorios adicionales</td>
<td>Features</td>
</tr>
<tr>
<td>Acostado boca abajo</td>
<td>Prone</td>
</tr>
<tr>
<td>Acta de Documentacion, Responsabilidad y Realce de Productos de Transportacion con Aviso de Retiro del Mercado</td>
<td>“TREAD Act”, Transportation Recall Enhancement, Accountability and Documentation Act</td>
</tr>
<tr>
<td>Administración Federal de Aviación</td>
<td>Federal Aviation Administration (FAA)</td>
</tr>
<tr>
<td>Administración Nacional de Seguridad del Tráfico en las Carreteras</td>
<td>National Highway Traffic Safety Administration (NHTSA)</td>
</tr>
<tr>
<td>Ajustador de reclinación</td>
<td>Recline adjustment mechanism</td>
</tr>
<tr>
<td>Ajustadores para el cinturón de hombro</td>
<td>Shoulder belt positioners</td>
</tr>
<tr>
<td>Ajustar, apretar</td>
<td>Cinching</td>
</tr>
<tr>
<td>Al nivel de la axila</td>
<td>Armpit level</td>
</tr>
<tr>
<td>Alcance Comunitario Community</td>
<td>Outreach</td>
</tr>
<tr>
<td>Analizar minuciosamente y desmontar (desarmar) los asientos de seguridad para niños</td>
<td>Dissecting Child Restraint Systems (CRS)</td>
</tr>
<tr>
<td>Ancla</td>
<td>Anchor</td>
</tr>
<tr>
<td>Anclaje de la parte superior</td>
<td>Upper tether anchorage</td>
</tr>
<tr>
<td>Anclaje uniforme para el asiento de seguridad</td>
<td>Standardized CR anchorage</td>
</tr>
<tr>
<td>Anclaje de la parte inferior</td>
<td>Lower anchors</td>
</tr>
<tr>
<td>Angulo de reclinacion</td>
<td>Recline angle</td>
</tr>
<tr>
<td>Anotar, documentar</td>
<td>To record</td>
</tr>
<tr>
<td>Aplicación de la ley</td>
<td>Enforcement</td>
</tr>
<tr>
<td>Apoyo para el brazo</td>
<td>Armrest</td>
</tr>
<tr>
<td>Armazón</td>
<td>Shell</td>
</tr>
<tr>
<td>Arnés</td>
<td>Harness</td>
</tr>
<tr>
<td>Arnés ajustado</td>
<td>Harness snug</td>
</tr>
<tr>
<td>Arnés bien ajustado</td>
<td>Retainer snug</td>
</tr>
<tr>
<td>Arnés de 5 puntos</td>
<td>5 - Point harness</td>
</tr>
<tr>
<td>Arnés del asiento de seguridad</td>
<td>Safety seat harness</td>
</tr>
<tr>
<td>Arnés interno</td>
<td>Internal harness</td>
</tr>
<tr>
<td>Asegurado al sistema de seguridad</td>
<td>Restrained</td>
</tr>
<tr>
<td>Asiento</td>
<td>Seat</td>
</tr>
<tr>
<td>Español</td>
<td>English</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Asiento de seguridad con sistema de anclaje flexible</td>
<td>Flexible latch system seat:</td>
</tr>
<tr>
<td>Asiento de seguridad con sistema de anclaje rígido</td>
<td>Rigid Latch System Seat</td>
</tr>
<tr>
<td>Asiento de seguridad convencional para niños</td>
<td>Conventional Child Restraint</td>
</tr>
<tr>
<td>Asiento de seguridad de segunda mano</td>
<td>Second hand child seat</td>
</tr>
<tr>
<td>Asiento de seguridad integrado al asiento del vehiculo</td>
<td>Integrated child restraint</td>
</tr>
<tr>
<td>Asiento de seguridad que se instala mirando hacia atrás</td>
<td>Rear facing CR</td>
</tr>
<tr>
<td>Asiento de seguridad que se instala mirando hacia el frente</td>
<td>Forward-facing child restraint</td>
</tr>
<tr>
<td>Asiento de seguridad que solamente se instala mirando hacia el frente</td>
<td>Forward-facing only child restraint</td>
</tr>
<tr>
<td>Asiento de seguridad tipo cama para infantes</td>
<td>Car bed</td>
</tr>
<tr>
<td>Asiento del vehículo tipo banco</td>
<td>Bench seat</td>
</tr>
<tr>
<td>Asiento del vehículo tipo deportivo</td>
<td>Bucket seat</td>
</tr>
<tr>
<td>Asiento delantero</td>
<td>Front seat</td>
</tr>
<tr>
<td>Asiento delantero del pasajero</td>
<td>Front passenger seat</td>
</tr>
<tr>
<td>Asiento elevado “booster” con ajuste para el cinturón de seguridad</td>
<td>Belt-positioning “booster” seat, (BPR)</td>
</tr>
<tr>
<td>Asiento elevado “booster” con escudo protector</td>
<td>Shield booster seat</td>
</tr>
<tr>
<td>Asiento elevado “booster” con espalda, respaldo</td>
<td>High back booster seat</td>
</tr>
<tr>
<td>Asiento elevado “booster” sin espalda, respaldo</td>
<td>Backless booster</td>
</tr>
<tr>
<td>Asiento elevado “booster”, asiento que eleva al niño</td>
<td>Booster seat</td>
</tr>
<tr>
<td>Asiento estándar tipo banco</td>
<td>Standardized bench seat</td>
</tr>
<tr>
<td>Asiento integrado</td>
<td>Integrated seat</td>
</tr>
<tr>
<td>Asiento lateral para el pasajero en la parte trasera del vehículo</td>
<td>Outboard passenger seat</td>
</tr>
<tr>
<td>Asiento plegable</td>
<td>Jump seat</td>
</tr>
<tr>
<td>Asiento plegable lateral que mira hacia el interior del vehículo</td>
<td>Side-facing jump seat</td>
</tr>
<tr>
<td>Asiento plegable que miran hacia el lado</td>
<td>Side-facing seat</td>
</tr>
<tr>
<td>Asientos de seguridad convertibles</td>
<td>Convertible restraints</td>
</tr>
<tr>
<td>Asientos de seguridad para niños, sistemas de seguridad para niños</td>
<td>Child restraints, (CR)</td>
</tr>
<tr>
<td>Asientos del autobús escolar</td>
<td>School bus seats</td>
</tr>
<tr>
<td>Asientos traseros tipo banco</td>
<td>Rear bench seats</td>
</tr>
<tr>
<td>Asociación de Fabricantes de Productos para Niños</td>
<td>Juvenile Products Manufacturers Association (JPMA)</td>
</tr>
<tr>
<td>Asuntos sobre la compatibilidad</td>
<td>Compatibility issues</td>
</tr>
<tr>
<td>Asuntos sobre la seguridad de los aviones</td>
<td>Aircraft safety issues</td>
</tr>
<tr>
<td>Atrapado</td>
<td>Trapped</td>
</tr>
<tr>
<td>Atributos distintivos del cinturón de seguridad</td>
<td>Seat belt features</td>
</tr>
<tr>
<td>Autobuses escolares</td>
<td>School buses</td>
</tr>
<tr>
<td>Auto-certificar</td>
<td>Self-certify</td>
</tr>
<tr>
<td>Avión</td>
<td>Aircraft</td>
</tr>
</tbody>
</table>

Adapted from NHTSA / DOT HS 809 892, October 2005
<table>
<thead>
<tr>
<th>Español</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barandas, rieles, barreras de seguridad</td>
<td>Guard rails</td>
</tr>
<tr>
<td>Barra de agarre</td>
<td>Locking bar</td>
</tr>
<tr>
<td>Base del asiento de seguridad</td>
<td>Restraint base</td>
</tr>
<tr>
<td>Base removible</td>
<td>Detachable base</td>
</tr>
<tr>
<td>Bien ajustado</td>
<td>Snugly</td>
</tr>
<tr>
<td>Boisa de aire con dos etapas de despliegue/inflado</td>
<td>Dual-stage air bag</td>
</tr>
<tr>
<td>Boisa de aire contra impacto lateral</td>
<td>Side impact air bag (SiAB)</td>
</tr>
<tr>
<td>Boisa de aire inflativa en forma de tubo</td>
<td>Inflatable tubular air bags</td>
</tr>
<tr>
<td>Boisa de aire moderna</td>
<td>Advanced air bag</td>
</tr>
<tr>
<td>Boisa de aire para el pasajero</td>
<td>Passenger air bag</td>
</tr>
<tr>
<td>Boises de aire delanteras</td>
<td>Front air bags</td>
</tr>
<tr>
<td>Boises de aire, bolsas de aire “inteligentes”, bolsas de aire modernas</td>
<td>Air bags, “smart” air bags</td>
</tr>
<tr>
<td>Broche referidor del arnés</td>
<td>Retainer clip</td>
</tr>
<tr>
<td>Cabecera. respaldo para la cabeza</td>
<td>Head restraint</td>
</tr>
<tr>
<td>Camioneta de carga ligera, carga liviana</td>
<td>Light pickup truck</td>
</tr>
<tr>
<td>Camioneta, camioneta de carga, camioneta extendida, camion tipo “pick up”</td>
<td>Pickup truck</td>
</tr>
<tr>
<td>Características o accesorios distintivos del vehículo</td>
<td>Vehicle features</td>
</tr>
<tr>
<td>Carrete retractable</td>
<td>Pretentioner</td>
</tr>
<tr>
<td>Carrete retractable del cinturón de seguridad</td>
<td>Seat belt pretensioner</td>
</tr>
<tr>
<td>Carretera, autopista</td>
<td>Highway</td>
</tr>
<tr>
<td>Cinta engomada extra fuerte</td>
<td>Heavy duty tape</td>
</tr>
<tr>
<td>Cinturón de hombro</td>
<td>Shoulder restraint</td>
</tr>
<tr>
<td>Cinturón de hombro automático</td>
<td>Motorized shoulder belt</td>
</tr>
<tr>
<td>Cinturón de regazo manual</td>
<td>Manual lap belt</td>
</tr>
<tr>
<td>Cinturón de regazo y hombrc</td>
<td>Lap/Shoulder belt (L/S belt)</td>
</tr>
<tr>
<td>Cinturón de seguridad</td>
<td>Safety belt</td>
</tr>
<tr>
<td>Cinturón de seguridad</td>
<td>Seat belt</td>
</tr>
<tr>
<td>Cinturón de seguridad con ajuste manual</td>
<td>Manual adjusting lap belt</td>
</tr>
<tr>
<td>Cinturón de seguridad con carrete retractable</td>
<td>Bolt pretensioner</td>
</tr>
<tr>
<td>Cinturón de seguridad de dos puntos</td>
<td>Two-point seat belt</td>
</tr>
<tr>
<td>Cinturón de seguridad de tres puntos</td>
<td>Three-point restraint:</td>
</tr>
<tr>
<td>Cinturón de seguridad flojo</td>
<td>Slack in the seat belt</td>
</tr>
<tr>
<td>Cinturón que usa un sólo pedazo de tejido continuo para el cinturon de hombro y regazo/afilada. Empieza en el punto de anclaje y el otro extremo termina en el retractor.</td>
<td>Continuous looo belt</td>
</tr>
<tr>
<td>Cinturones de hombro</td>
<td>Shoulder belts</td>
</tr>
<tr>
<td>Cinturones de regazo solamente</td>
<td>Lap only belts</td>
</tr>
</tbody>
</table>

Adapted from NHTSA / DOT HS 806 892, October 2005
<table>
<thead>
<tr>
<th>Español</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cinturones de regazo/falda</td>
<td>Lap belts</td>
</tr>
<tr>
<td>Cinturones de seguridad que se han añadido después</td>
<td>Retrofit lap belts</td>
</tr>
<tr>
<td>Clavícula</td>
<td>Collar bone</td>
</tr>
<tr>
<td>Colisión del cuerpo</td>
<td>Human collision</td>
</tr>
<tr>
<td>Colisión, choques</td>
<td>Collision/collisions</td>
</tr>
<tr>
<td>Columna vertebral</td>
<td>Spine</td>
</tr>
<tr>
<td>Columnas del volante plegables</td>
<td>Collapsible steering columns</td>
</tr>
<tr>
<td>Comisión de Seguridad para Productos de Consumo</td>
<td>Consumer Products Safety Commission</td>
</tr>
<tr>
<td>Compatibilidad del vehículo</td>
<td>Vehicle compatibility</td>
</tr>
<tr>
<td>Comprobantes</td>
<td>Vouchers</td>
</tr>
<tr>
<td>Condiciones ambientales</td>
<td>Environmental conditions</td>
</tr>
<tr>
<td>Conductor</td>
<td>Driver</td>
</tr>
<tr>
<td>Conectadores inferiores del asiento de seguridad</td>
<td>Child restraint lower attachments</td>
</tr>
<tr>
<td>Conexión inferior flexible de dos puntos</td>
<td>Flexible 2-point lower attachment</td>
</tr>
<tr>
<td>Conexiones para el sistema de anclaje LATCH</td>
<td>LATCH attachments</td>
</tr>
<tr>
<td>Conexiones rígidas, conectadores rígidos</td>
<td>Rigid attachments</td>
</tr>
<tr>
<td>Conjunto de correas de sujección para el sistema de anclaje LATCH</td>
<td>Tether strap kit</td>
</tr>
<tr>
<td>Consecuencias de las lesiones</td>
<td>Injury outcome</td>
</tr>
<tr>
<td>Consejo Nacional de Seguridad</td>
<td>National Safety Council (NSC)</td>
</tr>
<tr>
<td>Contenido del Módulo</td>
<td>Module Content</td>
</tr>
<tr>
<td>Contorno del asiento</td>
<td>Seat cushion contour</td>
</tr>
<tr>
<td>Control de defectos</td>
<td>Defect monitoring</td>
</tr>
<tr>
<td>Conversaciones interactiva</td>
<td>Interactive discussion</td>
</tr>
<tr>
<td>Correa de sujección del sistema de anclaje LATCH</td>
<td>Tether</td>
</tr>
<tr>
<td>Correa de sujección en la parte superior del sistema de anclaje</td>
<td>Top tether</td>
</tr>
<tr>
<td>Correa del anclaje</td>
<td>Anchor strap</td>
</tr>
<tr>
<td>Correa del anclaje</td>
<td>Tether anchor strap</td>
</tr>
<tr>
<td>Correas del arnés</td>
<td>Harness straps</td>
</tr>
<tr>
<td>Correas del arnés del asiento de seguridad para niños</td>
<td>Child restraint harness straps</td>
</tr>
<tr>
<td>Correas del sistema de seguridad</td>
<td>Restraining straps</td>
</tr>
<tr>
<td>Cortina inflable</td>
<td>Inflatable curtain (IC)</td>
</tr>
<tr>
<td>Criterio de prueba</td>
<td>Test Criteria</td>
</tr>
<tr>
<td>Criterios sobre lesión cerebral, criterios de traumatismo cerebral</td>
<td>Head Injury Criterion (HIC)</td>
</tr>
<tr>
<td>Cuando el precio está dentro de los medios del comprador, con el precio que usted puede pagar</td>
<td>Affordability</td>
</tr>
<tr>
<td>Chaleco “E-Z-On” (Fácil de Ponerse)</td>
<td>E-Z-On Vest</td>
</tr>
<tr>
<td>Choque</td>
<td>Crash</td>
</tr>
<tr>
<td>Español</td>
<td>English</td>
</tr>
<tr>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>Choque de vehículo motorizado</td>
<td>Motor vehicle crash (MVC)</td>
</tr>
<tr>
<td>Choque frontal</td>
<td>Frontal crash</td>
</tr>
<tr>
<td>Choque lateral</td>
<td>Lateral crash</td>
</tr>
<tr>
<td>Choque lateral. con impacto por el lado</td>
<td>Side impact crash</td>
</tr>
<tr>
<td>Choque trasero</td>
<td>Rear- end crash</td>
</tr>
<tr>
<td>Choques automovilísticos</td>
<td>Traffic crashes</td>
</tr>
<tr>
<td>Choques sin sobrevivientes</td>
<td>Unsurvivable crashes</td>
</tr>
<tr>
<td>Choques traseros</td>
<td>Rear-end collisions</td>
</tr>
<tr>
<td>Dar vueltas, girar</td>
<td>Spins</td>
</tr>
<tr>
<td>Datos sobre las lesiones</td>
<td>Injury facts</td>
</tr>
<tr>
<td>Decisiones difíciles</td>
<td>Tough choices</td>
</tr>
<tr>
<td>Declaración de renuncia al derecho de reclamo</td>
<td>Waiver of liability of claim</td>
</tr>
<tr>
<td>Defensores, Activistas</td>
<td>Advocates</td>
</tr>
<tr>
<td>Departamento de Transporte</td>
<td>Department of Transportation (DOT)</td>
</tr>
<tr>
<td>Departamento de Vehículos de Motor Deshílachar</td>
<td>Department of Motor Vehicles (DMV)</td>
</tr>
<tr>
<td>Fray Despliegue de la bolsa de aire, cuando la bolsa de aire se infla</td>
<td>Air bag deployment</td>
</tr>
<tr>
<td>Destrezas de abogacia</td>
<td>Advocacy skills</td>
</tr>
<tr>
<td>Desvársese bruscamente de lado a lado</td>
<td>Swerves</td>
</tr>
<tr>
<td>Dinámica de choques</td>
<td>Crash dynamics</td>
</tr>
<tr>
<td>Dirección del sitio web</td>
<td>Web site address</td>
</tr>
<tr>
<td>Discapacidad prolongada</td>
<td>Long-term disability</td>
</tr>
<tr>
<td>Diseño del vehículo</td>
<td>Vehicle design</td>
</tr>
<tr>
<td>Disminución de la velocidad, deceleración</td>
<td>Deceleration</td>
</tr>
<tr>
<td>Disminución de las fuerzas del choque, disminuir/amortiguar el impacto del choque</td>
<td>“Ride down”</td>
</tr>
<tr>
<td>Distribuidores, concesionarios</td>
<td>Dealerships</td>
</tr>
<tr>
<td>Donde se une el respaldo y el asiento</td>
<td>Bight</td>
</tr>
<tr>
<td>Ejercicios de ensayo improvisados</td>
<td>Role play exercises</td>
</tr>
<tr>
<td>Ejercicios prácticos</td>
<td>Hands-on exercises</td>
</tr>
<tr>
<td>El retractor se cierra, se agarra</td>
<td>The retractor locks</td>
</tr>
<tr>
<td>Error humano</td>
<td>Human error</td>
</tr>
<tr>
<td>Escrivientes, redactores</td>
<td>Scribes</td>
</tr>
<tr>
<td>Escudo en forma de T</td>
<td>T-Shield</td>
</tr>
<tr>
<td>Espaldar, apoyo para la espalda, respalco</td>
<td>Back support</td>
</tr>
<tr>
<td>Espina dorsal</td>
<td>C-Spine</td>
</tr>
<tr>
<td>Estación de servicio</td>
<td>Service station</td>
</tr>
<tr>
<td>Español</td>
<td>English</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>Estructura o, marco comprimible</td>
<td>Crushable frame</td>
</tr>
<tr>
<td>Estructura, marco</td>
<td>Frame</td>
</tr>
<tr>
<td>Estructura, marco del asiento</td>
<td>Seat frame</td>
</tr>
<tr>
<td>Etapa durante el choque</td>
<td>Crash phase</td>
</tr>
<tr>
<td>Etapa/fase después del choque</td>
<td>Post-crash phase</td>
</tr>
<tr>
<td>Etapas (fases) de un choque</td>
<td>Phases of a crash</td>
</tr>
<tr>
<td>Etiqueta</td>
<td>Label</td>
</tr>
<tr>
<td>Etiqueta del asiento de seguridad para niños</td>
<td>Child restraint label</td>
</tr>
<tr>
<td>Etiquetas de advertencia, etiquetas con avisos</td>
<td>Warning labels</td>
</tr>
<tr>
<td>Etiquetas del fabricante</td>
<td>Manufacturer's labels</td>
</tr>
<tr>
<td>Evento en donde se revisan los asientos de seguridad para niños</td>
<td>Check-up event</td>
</tr>
<tr>
<td>Evento en donde se revisan los asientos de seguridad para niños</td>
<td>Child restraint system (CRS) checkups event</td>
</tr>
<tr>
<td>Expulsión</td>
<td>Ejection</td>
</tr>
<tr>
<td>Expulsión de los ocupantes</td>
<td>Occupant ejections</td>
</tr>
<tr>
<td>Fabricante de vehículos</td>
<td>Automobile manufacturer</td>
</tr>
<tr>
<td>Fabricante, manufacturador</td>
<td>Manufacturer</td>
</tr>
<tr>
<td>Fase antes del choque</td>
<td>Pre-crash phase</td>
</tr>
<tr>
<td>Forma de común acuerdo</td>
<td>Agreement form</td>
</tr>
<tr>
<td>Formulario para la investigación de defectos</td>
<td>Defect investigation form</td>
</tr>
<tr>
<td>Frenar de emergencia</td>
<td>Emergency braking</td>
</tr>
<tr>
<td>Fuerza externa</td>
<td>Outside force</td>
</tr>
<tr>
<td>Fuerza limitadora</td>
<td>Restraining force</td>
</tr>
<tr>
<td>Fuerzas del choque</td>
<td>Crash forces</td>
</tr>
<tr>
<td>Función del gobierno federal</td>
<td>Federal Role</td>
</tr>
<tr>
<td>Fundamento de seguridad</td>
<td>Safety rationale</td>
</tr>
<tr>
<td>Ganchos para la correa del sistema de LATCH</td>
<td>Tether hook</td>
</tr>
<tr>
<td>Guias, pautas, principics</td>
<td>Guidelines</td>
</tr>
<tr>
<td>Hacia arriba</td>
<td>Upward</td>
</tr>
<tr>
<td>Hebilla</td>
<td>Buckle</td>
</tr>
<tr>
<td>Hoja de registro</td>
<td>Log sheet</td>
</tr>
<tr>
<td>Hundimiento leve</td>
<td>Slight indentation</td>
</tr>
<tr>
<td>Impactos traseros</td>
<td>Rear-end impacts</td>
</tr>
<tr>
<td>Inclinación del asiento</td>
<td>Seat slope</td>
</tr>
<tr>
<td>Inclinado</td>
<td>Supine</td>
</tr>
<tr>
<td>Incompatibilidad</td>
<td>Incompatibility</td>
</tr>
<tr>
<td>Incorporado</td>
<td>Built into</td>
</tr>
</tbody>
</table>

Adapted from NHTSA / DOT HS 809 892, October 2005
<table>
<thead>
<tr>
<th>Español</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicador de reclinacion</td>
<td>Recline indicator</td>
</tr>
<tr>
<td>Individuo semejante, compañero</td>
<td>Peer</td>
</tr>
<tr>
<td>Industria de asientos de seguridad para niños</td>
<td>Child restraint industry</td>
</tr>
<tr>
<td>Infantes, bebés</td>
<td>Infants</td>
</tr>
<tr>
<td>Información al día, actualizada</td>
<td>Up-to-date information</td>
</tr>
<tr>
<td>Instalación incorrecta en los vehículos</td>
<td>Improper installation in vehicles</td>
</tr>
<tr>
<td>Instrumento de evaluación</td>
<td>Assessment tool</td>
</tr>
<tr>
<td>Intercambiable</td>
<td>Switchable</td>
</tr>
<tr>
<td>Interior que provee protección adicional</td>
<td>Friendly interior</td>
</tr>
<tr>
<td>Interrogatorio interactivo, platica, diálogo</td>
<td>Interactive questioning</td>
</tr>
<tr>
<td>Interruptor para activar o desactivar</td>
<td>Onoff switch</td>
</tr>
<tr>
<td>Interruptores para activar y desactivar las bolsas de aire</td>
<td>Air bag on-off switches</td>
</tr>
<tr>
<td>Investigación, análisis</td>
<td>Research</td>
</tr>
<tr>
<td>Junta Directiva Nacional de Seguridad del Niño Pasajero</td>
<td>National Child Passanger Safety Board (NCPSB)</td>
</tr>
<tr>
<td>Lesión</td>
<td>Injury</td>
</tr>
<tr>
<td>Lesión cerebral</td>
<td>Brain injury</td>
</tr>
<tr>
<td>Lesión de Latigazo en el cuello</td>
<td>Whiplash</td>
</tr>
<tr>
<td>Lesión intencional</td>
<td>Intentional injuries,</td>
</tr>
<tr>
<td>Lesión sostenida durante la niñez</td>
<td>Childhood injury</td>
</tr>
<tr>
<td>Lesiones no - intencionales</td>
<td>Unintentional damage/injuries</td>
</tr>
<tr>
<td>Ley del Movimiento de Newton</td>
<td>Newton’s Law of Motion</td>
</tr>
<tr>
<td>Limitador de carga</td>
<td>Load limiter</td>
</tr>
<tr>
<td>Línea de Información Sobre la Seguridad del Auto</td>
<td>Auto Safety Hot Line</td>
</tr>
<tr>
<td>Lo más apretado posible</td>
<td>As tightly as possible</td>
</tr>
<tr>
<td>Luces de advertencia de emergencia</td>
<td>Warning lights</td>
</tr>
<tr>
<td>Maniquí</td>
<td>Dummy</td>
</tr>
<tr>
<td>Manta, frazada</td>
<td>Blanket</td>
</tr>
<tr>
<td>Manual del vehículo para el propietario</td>
<td>Vehicie owner’s manual</td>
</tr>
<tr>
<td>Manual para el uso del propietario del asiento de seguridad para niños</td>
<td>Child restraint manual</td>
</tr>
<tr>
<td>Materiales impresos, comunicados, folletos</td>
<td>Handouts</td>
</tr>
<tr>
<td>Mecanismo de engranaje, trinquelo</td>
<td>Ratchet</td>
</tr>
<tr>
<td>Mecanismos, aparatos</td>
<td>Devices</td>
</tr>
<tr>
<td>Médula espinal, espina dorsal</td>
<td>Spinal cord</td>
</tr>
<tr>
<td>Mini-autobús “minivan”</td>
<td>Minivan</td>
</tr>
<tr>
<td>Módulo de estudio independiente</td>
<td>Self-study module</td>
</tr>
<tr>
<td>Módulo de la bolsa de aire para el conductor</td>
<td>Driver’s air bag module</td>
</tr>
<tr>
<td>Español</td>
<td>English</td>
</tr>
<tr>
<td>--------</td>
<td>---------</td>
</tr>
<tr>
<td>Movimiento de la cabeza</td>
<td>Head excursion</td>
</tr>
<tr>
<td>Movimiento de la rodilla</td>
<td>Knee excursion</td>
</tr>
<tr>
<td>Niño pequeño</td>
<td>Toddler</td>
</tr>
<tr>
<td>Niños con necesidades especiales de salud</td>
<td>Children with special health needs</td>
</tr>
<tr>
<td>Normas de funcionamiento</td>
<td>Performance standards</td>
</tr>
<tr>
<td>Normas de seguridad</td>
<td>Safety standards</td>
</tr>
<tr>
<td>Normas Federales de Seguridad para Vehículos de Motor</td>
<td>Federal Motor Vehicle Safety Standards (FMVSS)</td>
</tr>
<tr>
<td>Panel o, tablero de instrumentos</td>
<td>Dashboard</td>
</tr>
<tr>
<td>Papel, funcion</td>
<td>Role</td>
</tr>
<tr>
<td>Parabrisas</td>
<td>Windshield</td>
</tr>
<tr>
<td>Parachoques, defensa amortiguador de choques</td>
<td>Bumper</td>
</tr>
<tr>
<td>Parasol, visera</td>
<td>Sun visor</td>
</tr>
<tr>
<td>Parte de arriba de los muslos</td>
<td>Upper thighs</td>
</tr>
<tr>
<td>Partes, piezas</td>
<td>Parts</td>
</tr>
<tr>
<td>Pasajeros que no utilizan el cinturón de seguridad</td>
<td>Unrestrained occupants</td>
</tr>
<tr>
<td>Pasar a través</td>
<td>Thread it through</td>
</tr>
<tr>
<td>Patinazo</td>
<td>Skid</td>
</tr>
<tr>
<td>Peatón</td>
<td>Pedestrian</td>
</tr>
<tr>
<td>Personal de rescate</td>
<td>Rescue workers</td>
</tr>
<tr>
<td>Personas que cuidan niños</td>
<td>Caregivers</td>
</tr>
<tr>
<td>Peso del objeto golpeado</td>
<td>Weight of the object struck</td>
</tr>
<tr>
<td>Peso del ocupante</td>
<td>Weight of the occupant</td>
</tr>
<tr>
<td>Piezas, partes, materiales</td>
<td>Hardware</td>
</tr>
<tr>
<td>Placa de cierre</td>
<td>Latch plate</td>
</tr>
<tr>
<td>Placa de cierre con agarre</td>
<td>Locking latch plate</td>
</tr>
<tr>
<td>Placa de cierre cosida</td>
<td>Sewn – on latch plate</td>
</tr>
<tr>
<td>Placa de cierre de agarre liviano</td>
<td>Lightweight locking latch plate</td>
</tr>
<tr>
<td>Placa de cierre deslizable</td>
<td>Free-sliding latch plate</td>
</tr>
<tr>
<td>Placa de cierre deslizable o corrediza</td>
<td>Sliding latch plate</td>
</tr>
<tr>
<td>Placa de separación</td>
<td>Splitter plate</td>
</tr>
<tr>
<td>Placas de cierre intercambiable</td>
<td>Switchable latch plates</td>
</tr>
<tr>
<td>Portador para bebés de uso doméstico</td>
<td>Household carrier</td>
</tr>
<tr>
<td>Posición central del asiento delantero</td>
<td>Center front seat position</td>
</tr>
<tr>
<td>Posición en el asiento trasero</td>
<td>Rear seat position</td>
</tr>
<tr>
<td>Posición lateral en la parte trasera del vehículo (al lado de la puerta)</td>
<td>Outboard position</td>
</tr>
<tr>
<td>Posición reclinada</td>
<td>Reclined position</td>
</tr>
<tr>
<td>Español</td>
<td>English</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>-------------------------------------------------------</td>
</tr>
<tr>
<td>Posición vertical orientada hacia el frente</td>
<td>Upright forward-facing position</td>
</tr>
<tr>
<td>Posición vertical, posición arguida</td>
<td>Upright position</td>
</tr>
<tr>
<td>Practicas modelo, criterio que se usa para hacer las cosas de una</td>
<td>Best practices</td>
</tr>
<tr>
<td>manera mejor</td>
<td></td>
</tr>
<tr>
<td>Prevención de lesiones</td>
<td>Injury prevention</td>
</tr>
<tr>
<td>Problemas de seguridad</td>
<td>Safety issues</td>
</tr>
<tr>
<td>Procedimiento utilizado en la manufacturación del tejido del cinturón</td>
<td>Energy management loops</td>
</tr>
<tr>
<td>para reforzar y controlar la energía</td>
<td></td>
</tr>
<tr>
<td>Procurar, promover la aprobación de una ley, cabildear</td>
<td>Lobby</td>
</tr>
<tr>
<td>Productos con avisos de retiro del mercado a causa de defectos</td>
<td>Recalls</td>
</tr>
<tr>
<td>Programa de Easter Seal “Los niños viajan seguros”</td>
<td>Easter Seal Program: “Kids are Riding Safe Program” (KARS)</td>
</tr>
<tr>
<td>Programa de subvención</td>
<td>Bounty program</td>
</tr>
<tr>
<td>Programa Nacional Uniforme de Adiestramiento en Sistemas de</td>
<td>Standardized Child Passenger Safety Training Program</td>
</tr>
<tr>
<td>Seguridad del Niño Pasajero</td>
<td></td>
</tr>
<tr>
<td>Programas de Control de Lesiones de Tráfico</td>
<td>Traffic Injury Control Programs</td>
</tr>
<tr>
<td>Programas de Protección al Ocupante</td>
<td>Occupant Protection Programs</td>
</tr>
<tr>
<td>Programas sobre la Seguridad del Niño Pasajero</td>
<td>Child Passenger Safety Programs</td>
</tr>
<tr>
<td>Protección activa</td>
<td>Active protection</td>
</tr>
<tr>
<td>Protección del ocupante</td>
<td>Occupant protection</td>
</tr>
<tr>
<td>Protección pasiva</td>
<td>Passive protection</td>
</tr>
<tr>
<td>Protector tipo bandeja/charola</td>
<td>Tray Shield</td>
</tr>
<tr>
<td>Prueba de trineo, mecanismo que se utiliza en pruebas de choques</td>
<td>Sled testing</td>
</tr>
<tr>
<td>Pruebas de cumplimiento</td>
<td>Compliance testing</td>
</tr>
<tr>
<td>Pruebas de choque del asiento de seguridad para niños</td>
<td>Child restraint crash tests</td>
</tr>
<tr>
<td>Pruebas de choque simulado</td>
<td>Crash testing</td>
</tr>
<tr>
<td>Punto de anclaje</td>
<td>Anchor point</td>
</tr>
<tr>
<td>Punto de conexión para la correa anclaje</td>
<td>Tether anchor</td>
</tr>
<tr>
<td>Rajaduras</td>
<td>Cracks</td>
</tr>
<tr>
<td>Ranuras para el arnés</td>
<td>Harness slots</td>
</tr>
<tr>
<td>Recién nacido</td>
<td>Newborn</td>
</tr>
<tr>
<td>Recodo del asiento</td>
<td>Seat bight</td>
</tr>
<tr>
<td>Recodo del asiento del vehículo</td>
<td>Vehicle seat bight</td>
</tr>
<tr>
<td>Relleno</td>
<td>Padding</td>
</tr>
<tr>
<td>Relleno adicional</td>
<td>Additional Padding</td>
</tr>
<tr>
<td>Relleno del asiento</td>
<td>Seat’s padding</td>
</tr>
<tr>
<td>Relleno resistente al fuego, relleno que retarda el fuego</td>
<td>Flame retardant padding</td>
</tr>
<tr>
<td>Requisitos de la etiqueta</td>
<td>Label requirements</td>
</tr>
</tbody>
</table>

Adapted from NHTSA / DOT HS 808 892, October 2005
<table>
<thead>
<tr>
<th>Español</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respaldo/espaldar del asiento</td>
<td>Seat back</td>
</tr>
<tr>
<td>Responsabilidad legal por daños y perjuicios, obligación legal</td>
<td>Liability</td>
</tr>
<tr>
<td>Resumen del curso</td>
<td>Course overview</td>
</tr>
<tr>
<td>Retenedor</td>
<td>Retainer</td>
</tr>
<tr>
<td>Retenedor Retenedor del arnés, broche retentivo del arnés</td>
<td>Harness retainer clip</td>
</tr>
<tr>
<td>Retractor</td>
<td>Retractor</td>
</tr>
<tr>
<td>Retractor de cierre de emergencia</td>
<td>Emergency locking retractor (ELR)</td>
</tr>
<tr>
<td>Retractor intercambiável</td>
<td>Switchable retractor</td>
</tr>
<tr>
<td>Retractor para controlar la energía</td>
<td>Energy management retractor</td>
</tr>
<tr>
<td>Retractor que se inmoviliza automáticamente</td>
<td>Automatic Locking Retractor (ALR)</td>
</tr>
<tr>
<td>Revisiones de los asientos de seguridad para niños</td>
<td>Child restraint system (CRS) checkups</td>
</tr>
<tr>
<td>Ruta</td>
<td>Routing</td>
</tr>
<tr>
<td>Ruta o trayectoria del cinturón de seguridad</td>
<td>Belt path</td>
</tr>
<tr>
<td>Seguridad</td>
<td>Safety</td>
</tr>
<tr>
<td>Seguridad del auto</td>
<td>Auto safety</td>
</tr>
<tr>
<td>Seguridad del niño</td>
<td>Child safety</td>
</tr>
<tr>
<td>Seguridad del Niño Pasajero</td>
<td>Child Passenger Safety (CPS)</td>
</tr>
<tr>
<td>Seguridad del Niño Pasajero</td>
<td>CPS</td>
</tr>
<tr>
<td>Seguridad en las carreteras</td>
<td>Highway safety</td>
</tr>
<tr>
<td>Sensor de choques</td>
<td>Crash sensor</td>
</tr>
<tr>
<td>Sensor de peso dentro del asiento</td>
<td>Seat weight sensor</td>
</tr>
<tr>
<td>Sensores de rayos infrarrojos de techo</td>
<td>Overhead infrared sensors</td>
</tr>
<tr>
<td>Sensores de ultrasonido del techo</td>
<td>Overhead ultrasound sensors</td>
</tr>
<tr>
<td>Ser expulsado del vehículo</td>
<td>Being thrown out of the car</td>
</tr>
<tr>
<td>Servicios de Emergencias Médicas</td>
<td>Emergency Medical Service (EMS)</td>
</tr>
<tr>
<td>Sistema de anclaje</td>
<td>Anchorage system</td>
</tr>
<tr>
<td>Sistema de anclaje del vehículo</td>
<td>Vehicle anchoring system</td>
</tr>
<tr>
<td>Sistema de anclaje inferior superior LATCH</td>
<td>LATCH, Lower Anchors and Tethers for Children</td>
</tr>
<tr>
<td>Sistema de anclaje LATCH-H</td>
<td>LATCH-I System</td>
</tr>
<tr>
<td>Sistema de anclaje para el asiento de seguridad</td>
<td>Child Restraint (CR) anchorage</td>
</tr>
<tr>
<td>Sistema de arnés</td>
<td>Harness system</td>
</tr>
<tr>
<td>Sistema de cinturones de seguridad</td>
<td>Seat belt system</td>
</tr>
<tr>
<td>Sistema de combustible</td>
<td>Fuel system</td>
</tr>
<tr>
<td>Sistema de información de análisis fatales</td>
<td>Fatal Analysis Reporting System (FARS)</td>
</tr>
<tr>
<td>Sistema de seguridad automático</td>
<td>Automatic restraint system</td>
</tr>
</tbody>
</table>

Adapted from NHTSA / DOT HS 809 892, October 2005
<table>
<thead>
<tr>
<th>Español</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sistema de seguridad contra impacto lateral</td>
<td>Side impact protection system (SIPS)</td>
</tr>
<tr>
<td>Sistema de Seguridad Inflamable Suplementario</td>
<td>Supplemental Inflammable Restraint (SIR)</td>
</tr>
<tr>
<td>Sistema de seguridad para el ocupante</td>
<td>Occupant Protection System (OPS)</td>
</tr>
<tr>
<td>Sistema de seguridad para los ocupantes del vehículo</td>
<td>Vehicle occupant protection system</td>
</tr>
<tr>
<td>Sistema de seguridad para niños con necesidades especiales</td>
<td>Special needs CRS</td>
</tr>
<tr>
<td>Sistema de Seguridad Suplementario</td>
<td>Supplemental Restraint System (SRS)</td>
</tr>
<tr>
<td>Sistemas de advertencia</td>
<td>Warning systems</td>
</tr>
<tr>
<td>Sistemas de identificación en los vehículos</td>
<td>Vehicle systems ID</td>
</tr>
<tr>
<td>Sistemas de seguridad</td>
<td>Restraint systems</td>
</tr>
<tr>
<td>Sistemas de seguridad en los vehículos</td>
<td>Vehicle restraint systems</td>
</tr>
<tr>
<td>Sistemas o asientos de seguridad para niños, sistemas de protección para niños</td>
<td>Child restraint systems (CRS)</td>
</tr>
<tr>
<td>Situaciones, asuntos, problemas</td>
<td>Issues</td>
</tr>
<tr>
<td>Soporte para el ancla</td>
<td>Anchor bracket</td>
</tr>
<tr>
<td>Soporte para la rodilla</td>
<td>Knee bolster</td>
</tr>
<tr>
<td>Sujetador (broche) para acortar el tejido del cinturón de seguridad</td>
<td>Belt shortening clip</td>
</tr>
<tr>
<td>Sujetador (broche) que se usa para fijar el cinturón de seguridad</td>
<td>Locking clip</td>
</tr>
<tr>
<td>Sujetador regular de clip metal</td>
<td>Regular locking</td>
</tr>
<tr>
<td>Sujetadores (broches) incorporados</td>
<td>Built-in locking clips</td>
</tr>
<tr>
<td>Sujetadores (broches) incorporados sin cierre</td>
<td>Built-in lock-off locking clips</td>
</tr>
<tr>
<td>Tapete o alfombra de goma, hule, caucho</td>
<td>Rubber mat</td>
</tr>
<tr>
<td>Tarjeta de inscripción, registro</td>
<td>Registration card</td>
</tr>
<tr>
<td>Técnico en la Seguridad del Niño Pasajero</td>
<td>Child Passenger Safety Technician</td>
</tr>
<tr>
<td>Tejido del cinturón de seguridad</td>
<td>Webbing</td>
</tr>
<tr>
<td>Tipo de cinturón de seguridad</td>
<td>Seat belt configuration</td>
</tr>
<tr>
<td>Transferencia aguda</td>
<td>Acute exposure</td>
</tr>
<tr>
<td>Uniformación, normalización, estandarización</td>
<td>Standardization</td>
</tr>
<tr>
<td>Uso incorrecto</td>
<td>Misuse</td>
</tr>
<tr>
<td>Variables del ambiente físico</td>
<td>Physical environment variables</td>
</tr>
<tr>
<td>Variables humanas</td>
<td>Host variables</td>
</tr>
<tr>
<td>Varilla para ajustar el arnés</td>
<td>Harness Adjuster Bar</td>
</tr>
<tr>
<td>Vehículo de la policía, patrulla de seguridad</td>
<td>Law enforcement vehicle (LE vehicle)</td>
</tr>
<tr>
<td>Vehículos de pasajeros</td>
<td>Passenger vehicles</td>
</tr>
<tr>
<td>Velocidad antes del choque</td>
<td>Pre-crash speed</td>
</tr>
<tr>
<td>Español</td>
<td>English</td>
</tr>
<tr>
<td>-----------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Ventana lateral</td>
<td>Side window</td>
</tr>
<tr>
<td>Ventana trasera</td>
<td>Rear window</td>
</tr>
<tr>
<td>Vía respiratoria</td>
<td>Airway</td>
</tr>
<tr>
<td>Vida útil del producto</td>
<td>Product life</td>
</tr>
<tr>
<td>Volante, timón</td>
<td>Steering wheel</td>
</tr>
<tr>
<td>Volteretas</td>
<td>Vaults</td>
</tr>
<tr>
<td>Vuelco, volcarse</td>
<td>Rollover</td>
</tr>
<tr>
<td>Vueltas</td>
<td>Rotation</td>
</tr>
<tr>
<td>Zonas de carga</td>
<td>Cargo areas</td>
</tr>
</tbody>
</table>