

## **More than Forty Years of Progress for Child Passenger Protection**

A Chronicle of Child Passenger Safety Advances in the USA, 1965-2009

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(updated 2/09)

*Note: some dates are approximate and unverified.*

- 1965: Physicians for Automotive Safety formed, pickets NY Auto Show, protests lack of occupant protection.
- 1971: Physicians for Automotive Safety publishes first pamphlet on child passenger protection, "Don't Risk Your Child's Life" (updated frequently to present).
- 1968: First child restraints designed for crash protection developed by Ford (Tot-Guard) and General Motors (Love Seat for toddlers). Followed soon thereafter by the GM Infant Love Seat (first rear-facing only restraint) and the Bobby Mac convertible seat (used both rear-facing and forward facing).
- 1971: Action for Child Transportation Safety founded for parent-citizen advocates to promote child passenger safety (CPS) education and stricter standards for children's car seats (also called "safety seats" or, most correctly, "child restraint systems" or CRS). (Closed 1982)
- 1971: National Highway Traffic Safety Administration (NHTSA) adopts first federal standard for child seating systems, FMVSS 213; requirements do not include dynamic (crash) tests, but did require use of a safety belt to hold the car seat into the vehicle, and a harness to hold the child in the car seat. Did not cover rear-facing infant restraints or car beds.
- 1972: *Consumer Reports* publishes article showing that most car seats that passed FMVSS 213 could not withstand crash tests.
- 1970s: Several established child safety seat manufacturers develop products that passed an informally agreed upon crash-test procedure at 30 mph. Product mix on the market makes shopping for a protective child restraint confusing. Very few parents actually use restraints for their children.
- 1977: First standard for school buses becomes effective; includes body strength, roll-over protection, seat spacing, padded flexible seatbacks, and higher backs (passenger "compartmentalization"), but not seat belts.
- 1978: Physicians for Automotive Safety produces first parent education film about child passenger safety, "Don't Risk Your Child's Life". (Updated six times to 2004.)

- 1978: First child passenger safety law passed in Tennessee, requiring parents to put their infants and young children in CRS that meet the current federal standard (FMVSS 213). Became effective in 1979. Legislative effort begins in other states.
- 1978: First national child passenger safety conference held, Nashville, TN.
- 1979: A study is published showing that adults are not capable of restraining children in their laps even in low speed crashes: D.Mohan and L.Schneider: "An Evaluation of Adult Clasp Strength for Restraining Lap Held Infants", *Human Factors*, 21:6, 635-645, 1979.
- 1979: Second national CPS meeting in Washington, D.C.
- 1981: More stringent version of FMVSS 213-80, Child Restraint Systems, becomes effective on 1/1/81; includes rear-facing infant restraints, car beds, and forward-facing restraints for children under 50 lb.; required frontal crash test at 30 mph, buckle release force (so children could not release the harness), special labeling and instruction criteria.
- 1981: American Academy of Pediatrics starts its "First Ride... A Safe Ride" program to promote parent education by physicians and legislation to require child restraint use. "Safe Ride News" is founded by the AAP as a technical newsletter for pediatricians and the community of people interested in child occupant protection.
- 1981: Study published on non-crash injuries to children (Agran P. Motor vehicle occupant injuries in non-crash events. *Pediatrics*. 1981;67:838-840.
- Early 1980s: Studies showed that CRS use in certain states is higher after CPS laws are introduced. More states pass child passenger safety laws.
- Early 1980s: Concern on the part of certain vehicle manufacturers over problems of air bags with out-of-position children (leaning against the dashboard). Air bag installation had become a highly political issue.
- Early 1980s: First Lifesavers Conference held, Detroit, MI
- 1982-3: National Child Passenger Safety Assn. (NCPSA) founded (closed c.1988). Local child passenger safety associations also are formed in a number of communities and some states as well, most notably, the Los Angeles Area Child Passenger Safety Assn., which later became SafetyBeltSafe U.S.A.
- 1983: Observational survey by Physicians for Automotive Safety, published in *Pediatrics*, indicates a high level of misuse of child restraints, focusing on installation problems such as failure to use tether straps and incorrect belt routing through the frame of the CR. Study of crashes by National Transportation Safety Board find many and multiple misuses that contributed to casualties.
- 1984: Decision of NHTSA pushes states to adopt safety belt laws that will cover adults and children over the age covered by the child passenger safety laws. Same decision requires installation of air bags if sufficiently strict laws are not adopted by a majority of states by 1990.

- 1984: Child Restraint Task Force of the Society of Automotive Engineers begins work on design criteria to make child restraints and vehicle seats and belts fit together.
- 1984: The first Presidential Proclamation (under Ronald Regan) issued on child passenger protection, titled "National Child Passenger Safety Awareness Day, 1984" by Senate Joint Resolution #2890. This annual week was celebrated in February until 2008, when it was rescheduled in September.
- 1985: Final state passes child passenger safety law. All states plus District of Columbia and Puerto Rico have requirements, but many have limitations, such as applying only to parents or guardians or allowing lap belt use as an alternative for very young children. All are primary laws (allowing police to stop a vehicle for the violation).
- 1985: FMVSS 213 amended to require a misuse test of seats that rely on tether straps, to make them function adequately without tethers. This basically eliminates tethers from future CR designs.
- 1985: NHTSA survey finds misuse of CRS at 65%.
- 1985: Interest develops concerning CRS for infants and children with special needs who cannot fit properly into retail models. Research and development of crashworthy special devices begins, centered at James Whitcomb Riley Hospital for Children, Indianapolis, IN.
- 1985: Study on non-crash falls, ejections: Agran P, Dunkle D, Winn D. Childhood injuries due to noncrash falls and ejections. *Journal of the American Medical Association*. 1985; 253:2530-2533.
- 1986: NHTSA study shows that correctly used CRS are 71% effective at reducing fatalities and 67% effective at reducing serious injuries. If the restraints were partially misused, effectiveness would be reduced by 44%.
- 1987: Survey of CRS use in 19 cities across the country shows 80% usage (correct and incorrect) of restraints for children under age 5. While not representative of usage in many areas, considerable advances had been made in past 10 years.
- 1987: First study of fetal trauma in crashes: (Agran P, Dunkle, D, Winn D. Fetal trauma in motor vehicle collisions. *Annals of Emergency Medicine*. 1987;16:12,1355-1358)
- Late 1980s: Efforts increase to get state police and local law enforcement agencies to enforce child restraint laws and to upgrade CRS laws.
- 1989: National SAFE KIDS Campaign formed.
- 1989: Shoulder belts become required equipment in the rear seats of new passenger vehicles starting in the 1990 model year, improving protection for children who have outgrown child restraints.
- 1989: Evidence of CRS misuse grows; car seat inspection clinics in Virginia and California find high levels (87-93%) of errors.

- 1989: Bills first introduced in Congress to require children under age 2 to use CRS on commercial aircraft flights, following Iowa City crash in which many people survived but 2 infants were flung from parents' grasp and killed. (Legislation has not been passed.)
- 1990: FAA proposal requires airlines to permit the use of approved CRS during take-off and landing. NHTSA adopts a minimal test as part of FMVSS 213.
- 1990: Task Force of the Society of Automotive Engineers issues recommended practice (J1819) covering various aspects of child restraint, vehicle seat, and safety belt design to promote compatibility.
- 1990: SafetyBeltSafe U.S.A. formed as national non-profit advocacy organization for child and family safety in motor vehicles.
- 1991: More frequent injuries to young children from poorly fitting lap belts (lap belt syndrome) are reported as more children use restraints. Leads to more states eliminating the lap belt exemption from their child restraint laws.
- 1991: SAE Task Force issued warning on risk of serious injury from passenger air bags to infant riding in rear-facing restraints.
- 1991: Almost all states have passed safety belt use laws. Many do not cover rear seat occupants and can be enforced only if the driver is stopped for another violation.
- 1991: Increased interest in prohibiting passengers in the cargo areas of pickup trucks. AAP issues policy statement. In a few states and localities legislation is introduced in succeeding years.
- 1992: Chrysler introduces the optional built-in CRS for toddlers and belt-positioning-booster in its mini-vans. Other manufacturers do the same in the next few years.
- 1993: Passenger air bags begin to be installed in increasing numbers of vehicles. April: First child killed by passenger air bag; a 6 years old riding unbelted.
- 1993: CDC issues a the first public health warning on interaction between air bags and rear-facing child restraints (MMWR, Vol 42/No 4, April 16, 1993)
- 1993-4: NHTSA steps up activity to encourage educational activities to improve correct child restraint use and makes some changes in FMVSS 213 to allow improvements in products.
- 1994: September: Death of Dana Hutchinson, age 3, in her safety seat, due to lack of a special buckle to make front seat belt system hold CRS in place. Unprecedented publicity draws national attention to problems of child restraint-motor vehicle compatibility; safety belts designed primarily to provide restraint to adult passengers may not anchor child restraints properly.
- 1995: January: NHTSA calls for establishment of a Blue Ribbon Panel on Child Restraint and Vehicle Compatibility. First time a multi-faceted group (motor vehicle and child restraint manufacturers and practitioners/advocates) had been convened to resolve problems of compatibility between these products.

- 1995: July: First death of infant from being struck by passenger air bag while riding in the front seat in a rear-facing restraint. (First infant known to have been injured by air bag, November, 1994.)
- 1995: June: Blue Ribbon Panel presents findings, calls for regulatory changes to permit the installation of a universal anchorage system for child restraints, tentatively called ISOFIX, that does not rely on safety belts. Also calls for improved instructions for products (child restraints and vehicles) and better education of users of child restraints.
- 1995: November: National Transportation Safety Board issues call for major campaign by NHTSA, auto manufacturers, CRS manufacturers, major national organizations and media regarding air bag hazards to children.
- 1996: January: NHTSA and National Safety Council rally support for major campaign to alert vehicle users about hazard of passenger air bags to infants and children and to upgrade safety belt laws and enforcement.
- 1996: August: Toll of infants and children killed from contact with a passenger air bag reaches 21. NHTSA offers amendments to air bag requirements, including additional warning labels and cut-off switch options for vehicles without "smart" air bags that would not deploy if a child were in the seat.
- 1997: NHTSA's national training program to certify Child Passenger Safety Technicians and Instructors is implemented.
- 1997: Partners for Child Passenger Safety (project of State Farm Insurance and Children's Hospital of Philadelphia) founded. It created the largest post-market surveillance system for the safety of children in motor vehicles, providing the real-world, scientific foundation to set priorities and provide the context for rulemaking, legislation, and educational efforts. Collects data for 10 years (until 2007)
- 1998: Dana's Bill passed, for \$30 million in funding to states for technical training, inspection stations and CR distribution over 4 years.
- 1999: First edition of *Tethering Child Restraints* (Safe Ride News Publications), followed by biennial editions with names that changed: 2001 (*Tethering Child Restraints: Including LATCH*); 2003 (*LATCH: Lower Anchors and Tethers for Child Restraints*); 2005, 2007 (*The LATCH Manual*), 2009.
- 1999: September: The tether part of the universal child restraints anchorage standard (LATCH) began with the requirement that all forward-facing CRs must pass a reduced head excursion test, for which almost all employ a tether strap.
- 1999: September: Phase-in of the tether anchor requirement of the universal child restraints anchorage standard (LATCH) began, with 80% of all model-year 2000 passenger cars (not SUVs, pickup trucks, or vans) being required to have tether anchors.
- 2000: Washington state passed the first booster seat laws for children over 40 pounds and California followed suit. (Both laws took effect in 2002.)

- 2000: CPP Protection Act (part of TREAD Act) for improved CR standard, enhanced booster education, and the NHTSA ease-of-use CR rating system.
- 2000: September: Phase-in of the tether anchor requirement of the universal child restraints anchorage standard (LATCH) continues, with 100% of all model-year 2001 passenger vehicles (including SUVs, pickup trucks, or vans) being required to have tether anchors. Exemptions for convertibles, small school buses, and vehicles over 8500 lb.
- 2000: September: Lower LATCH anchor phase-in for vehicles (model year 2001) begins with 20% of passenger vehicles of all types up to 8500 lb, as well as small school buses under 10,000 lb.
- 2001: September: Lower LATCH anchor phase-in for vehicles (model year 2002) continues with 50% of passenger vehicles of all types up to 8500 lb, as well as small school buses under 10,000 lb.
- 2002: Anton's Law: Federal law requiring development of booster seat testing requirements, lap-shoulder belt standard in center rear (spearheaded by Autumn Skeen).
- 2002: Number of certified Technicians and Instructors tops 22,000.
- 2002: September: final implementation of the LATCH requirement for lower anchors installation (ISOFIX anchors and attachments) in 100% of passenger vehicles (model year 2003).
- 2002: September: requirement for lower LATCH attachments on new child restraints, except car beds, vests/harnesses, and booster seats.
- 2002: Peterson Automotive Museum (L.A.) exhibit of the history of child passenger safety held in conjunction with SafetyBeltSafe U.S.A.
- 2004: Seventh edition of the premier child passenger safety video: Don't Risk Your Child's Life (Shelness Productions).
- 2005: National SAFE KIDS Campaign becomes Safe Kids Worldwide.
- 2005: KIM Conference: first annual national gathering of the independent Kidz in Motion Conference.
- 2006: LATCH Working Group convenes to look into compatibility issues between vehicles and CRs in use of the LATCH system.
- 2006: *Safe Ride News*: 25<sup>th</sup> anniversary of the national CPS newsletter.
- 2008: LATCH promotion effort by NHTSA and the Ad Council begins.
- 2008: National CPS Awareness Week moved from February to September annually.
- 2008: Significant revision of the school bus seating standard, FMVSS 222 issued, requiring small buses (under 10,000 lb) to have lap-shoulder belts and any seats with lap-shoulder

belts (in small or large school buses) to pass dynamic tests. Higher-back seats are required for all new buses.

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