Vacation Travel Risks & What Parents Need to Know

Aircraft Travel

Presented to: Lifesavers Conference 2018

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Current Regulations

Commercial Aircraft (A/C):

• During takeoff, landing, and movement on the surface, each person on board an airplane must occupy an approved seat or berth with a separate seat belt

• Exception: A child who has not reached his 2nd birthday may be held on an adult’s lap

• Additionally, a child may occupy an approved child restraint system (CRS)
  – 14CFR §§ 121.311 and 135.128
Current Regulations (cont.)

General Aviation:

• Regulations similar to those of commercial aviation

• Often, seats equipped with both shoulder harnesses and lap belts
  – § 91.107
Purposes of Restraint Systems

1. Prevention of occupant ejection from his/her seat during turbulence
   - Computer Simulation of A/C Cabin in Turbulence

2. Restraint of occupant during a rapid deceleration/crash
CRS Definition

• Hard-backed child safety seat that is typically approved by the government for use in both motor vehicles and A/C
• Must be labeled appropriately
• Not all CRS are approved for use in A/C
  – Read user’s manual and warnings!!!
CRS Definition

- FAA considers anyone who has not reached 18th birthday to be a “child” for purposes of regs regarding CRS
- Child can use CRS that accommodates height/weight on any U.S. air carrier until 18th birthday
CRS Approval

- Regulations designate National Highway Safety and Traffic Administration (NHTSA) as sole agency responsible for certifying CRS designed for use in automobiles and A/C (49 CFR Part 571.213).
- NHTSA certified seats must meet the requirements of Federal Motor Vehicle Safety Standard 213 (FMVSS 213).
- For use on A/C, CRS must meet both the basic requirements and the additional aviation requirements found in FMVSS-213.
CRS Requirements

• CRS must be properly secured in a forward-facing seat/berth
• CRS must bear appropriate labels
• Child occupying a CRS must be accompanied by a caregiver
• Child must be properly secured in CRS
• Child must not exceed weight limitations of CRS
Acceptable CRS Labels

• “This child restraint system conforms to all applicable Federal motor vehicle safety standards”; and

• “This Restraint Is Certified for Use in Motor Vehicles and Aircraft” (in red lettering)
Additional/Acceptable CRS Labels

• **Label or Markings:**
  – Showing approval by a foreign government
  – Showing that the seat was manufactured under the standards of the United Nations
  – Showing that the device was approved by the FAA in accordance with:
    • § 21.8(d) (or § 21.305(d) (2010 ed.))
    • Technical Standard Order C-100b, or a later version
# Foreign Labels

<table>
<thead>
<tr>
<th>Australian/New Zealand Approved Labelling</th>
<th>EU Approved Labelling:</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Australian/New Zealand Label" /></td>
<td>Approved for use in motor vehicles according to the UN standard “ECE R 44-03” or later</td>
</tr>
<tr>
<td><img src="image2" alt="AS/NZS 1754 Label" /></td>
<td>‘Qualification Procedure for Child Restraint Systems for Use in Aircraft’ (TÜV Doc.: TÜV/958-01/2001)</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>FAA Approved Labelling</th>
<th>Canadian Approved Labelling</th>
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</thead>
<tbody>
<tr>
<td>Approved for use in motor vehicles and aircraft according to US FMVSS No. 213</td>
<td>Standard CMVSS 213/213.1</td>
</tr>
<tr>
<td><img src="image3" alt="FAA Label" /></td>
<td><img src="image4" alt="Canadian Label" /></td>
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Alternative CRS

• Also approved: class of restraint systems not approved by NHTSA, but meets FAA requirements exclusively for use on board A/C.

• Referred to as “Aviation Child Safety Devices” (ACSD)

• FAA regulations regarding the use of CRS on board A/C also apply to the use of ACSDs

• Approved for use in aircraft only
CRS Options

• Typical Approved AFT/FWD Facing CRS
  – Meet FMVSS-213 Standard

• ACSD
  – CARES
  – Approved under § 21.8(d) or § 21.305(d) (2010 ed.)
CARES

- Installing CARES
- https://www.youtube.com/watch?v=M8jBxNuXRkQ
Challenges to CRS Installation

CRS Design

- Difficult to tighten seatbelt due to interference
- Some require three-point harness to secure
- A/C seatbelts are two-point harness
- No internal harness

This booster seat is NOT CERTIFIED for aircraft use. Aircraft seats are not equipped with 3-point lap-and-shoulder belts which are required for use with this booster seat.
Challenges to CRS Installation (cont.)

• **A/C Seat Width**
  - Seat Dimensions Disclosure regulation (§ 121.311(k))
  - Requires air carriers to post on their websites the width of the narrowest and the widest seats in each class of service

• **Lack of Lower Anchor Points on A/C Seats**
Challenges to CRS Installation (cont.)

• A/C Seat Pitch
  – Most often impacts aft-facing CRS
  – Dimension not always available on air carrier website

• A/C Seat Installation Angle
  – CRS effective in seats installed up to 18 degrees from A/C centerline
  – “Oblique seats” (+18 degrees) often in Business or First Class sections
Prohibited Restraints

• Backless Booster-type
  – Does not offer adequate occupant protection
Prohibited Restraints (cont.)

- Vest-type (Baby B’Air, e.g.)
  - Does not meet/Not tested to FAA standards
Prohibited Restraints (cont.)

- Harness-type (RideSafer, e.g.)
  - Does not meet/Not tested to FAA standards
Prohibited Restraints (cont.)

• **Supplemental loop belt (“belly belt”)**
  – Permitted by some foreign Civil Aviation Authorities (CAA) but not FAA
  – Tests show substantial injuries to occupant
Prohibited Restraints (cont.)

• Permitted during cruise portion but not during takeoff, landing, when seatbelt sign is on
  – Air carrier may prohibit use consistent with safe operating practices
FAA Civil Aerospace Medical Institute (CAMI) Video

• Lap-Held Child Safety
  https://www.youtube.com/watch?v=lcqwdxeCcXmI
CAMI Video

- Lap Belt Only https://www.youtube.com/watch?v=sWcOu6m0EiY
Evacuations w/Infants & Children

- Remove Infant/Child from CRS
- Leave CRS Installed in Seat
- Carrying positions depend on age/size of child
  - Vertical: Protect head/neck w/one hand, placing other arm around buttocks and holding infant w/legs around adult’s waist
  - Horizontal: Cradle infant’s head/neck in arm and keep infant’s arms/legs/feet enfolded as much as possible
Evacuations w/Infants & Children (cont.)

- Board evacuation device by jumping rather than sitting/scooting
- Climb thru window exit while holding infant
  - Carry infant vertically
  - Don’t pass infant to another pax
- If child too large to carry, use method most comfortable and natural for caregiver yet that provides adequate protection and ensures fast egress from A/C
Foreign Air Carriers

• FAA regulations only apply to U.S.-certificated air carriers
• There are differences between FAA and other CAA regulations
• Several CAAs for other countries recognize FAA approval of CRS for use on A/C and/or FAA exemptions allowing the use of certain child restraints for use on air carriers regulated by that CAA
Foreign Air Carriers

• If travel includes a foreign air carrier, contact the foreign air carrier regarding its specific policies

• Comparison of international/domestic air carrier policies*:  


  *Highly recommend verifying information w/foreign air carrier
Passengers with Disabilities

- FAA did not contemplate needs of persons (adults nor infants/children) with disabilities when drafting regs regarding seat belt requirements
- Many passengers cannot literally comply with regs
- FAA can grant exemptions to regs for those passengers
- Must show equivalent level of safety and that grant is in public interest
Passengers with Disabilities (cont.)

• **FAA Resource Guide***:
  – *Use of Restraint Systems on Aircraft by People with Disabilities*

  *Included as a handout on conference website and in “Resources” tab in conference app

• **Department of Transportation (DOT) public website**
  https://www.transportation.gov/airconsumer/passengers-disabilities
FAA Guidance to Operators & Parents

- Development of policies & procedures
- Information to address specialized issues
- Use of CRS for children w/disabilities
- New types of approved CRS
- CRS fit/placement issues
- Evacuation procedures

Resource Links at end of this presentation
Why does FAA Permit Lap Children?
Diversion

• Requiring a seat for child under two would significantly increase price of family air travel for a small, targeted population

• Price affects consumer decisions

• Would cause some families to divert to driving, a much higher risk mode of transportation
Diversion (cont.)

- For every child under two saved by a regulation (1 every ten years), a minimum of 60 lives would be lost on the highways
- Diversion to highways would cause an increase in transportation deaths
Safety Analysis

• **Aviation is much safer than traveling on highways**
  – 5,000 aircraft in the air at any one time
  – 44,000 flights each day
  – 841 million passengers in 2017
  – 2.3 million passengers every day (1% is ~23,000 lap held infants every day)

• **Aviation is highly regulated industry operating in very controlled environment**
  – No U.S. commercial aviation fatalities since 2009
Safety Analysis (cont.)

• **Aviation accidents are rare**
  - From 1979 thru 2009 (last commercial aviation accident w/fatalities), if CRS required, would have prevented 3 deaths
    - Denver, 1987; Sioux City, 1989; Charlotte, 1994

• **Diversion to highways would increase transportation deaths**
  - In 2016, highway deaths totaled 37,461
  - In 2016, aviation* deaths totaled 412
    *Includes U.S. commercial, commuter, on-demand air-taxi, and general aviation
FAA Position

• Although FAA allows children under two years old to travel in the lap of an adult, we do not recommend this practice.

• Most governmental and safety organizations advise against this practice, including the NTSB, the American Academy of Pediatrics (AAP), and the Centers for Disease Control (CDC).
CRS Education & Outreach

- Designed/developed FAA website dedicated to pax info re: seatbelt use and child safety
- New brochures on CRS use

There are new parents every year, so the education and outreach continue
Continued Education & Outreach

- FAA helps parents make an informed decision about their child’s safety when they fly
- Outreach to:
  - Family/child magazine websites
  - Child safety advocates & retailers
  - Travel experts & magazine websites
  - Travel planning sites
  - Web resources
Conclusion

FAA continues to encourage parents of young children to use CRS appropriate to that child’s size and weight when traveling on aircraft

- Enable use of various types of CRS via regs
- Educate operators about effective use of CRS
- Educate parents to help make informed choices
- Reach out to many stakeholders to spread the word
Conclusion (cont.)

• Provide CRS options by encouraging innovation, research, and new designs for aviation CRS

A regulation that requires CRS on A/C would result in some diversion to highways, a less safe mode of travel. This would not be good transportation safety policy.
Thank you for the privilege of your time!

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Please use the Lifesaversers Conference Mobile App to evaluate this presentation.
Further Information about CRS

- FAA public website
  https://www.faa.gov/travelers/fly_children/

- NHTSA public website
  https://www.nhtsa.gov/equipment/car-seats-and booster-seats
FAA Guidance (Commercial Aviation)

• Advisory Circular (AC) 120-87C, Use of Child Restraint Systems on Aircraft
  https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_120-87C.pdf

• Information for Operators (InFO) 15013, Regulatory Requirements Regarding Accommodation of Child Restraint Systems
  https://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/info/all_infos/media/2015/InFO15013.pdf
FAA Guidance (Commercial Aviation) (cont.)

• **InFO 15011, Use of Child Restraint Systems (CRS) in Oblique Seats**
  
  [https://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/info/all_infos/media/2015/InFO15011.pdf](https://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/info/all_infos/media/2015/InFO15011.pdf)
FAA Guidance (General Aviation)

• FAA Publication: Seat Belts and Shoulder Harnesses
  http://www.faa.gov/pilots/safety/pilotsafetybrochures/media/seatbelts.pdf

• AC 91-62A, Use of Child Seats in Aircraft