

# LATCH: THE FIRST DECADE

Denise Donaldson, Editor, Safe Ride News; 3/2011

# Objectives

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- Look at LATCH Use (and Misuse)
- Review Challenges to Using LATCH  
(or “Why Seat Belts are Still Needed”)
- Review Challenges to Using Seat Belts
- Outlook: How Can CPSTs Participate in Improvement?

# “Lockability Sunsetting”

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- In 1996, FMVSS 208 required lockability feature in all passenger seat belts.
- In 1999, FMVSS 225 included clause to sunset this requirement.
- Takes effect September 1, 2012–10 years post LATCH requirement

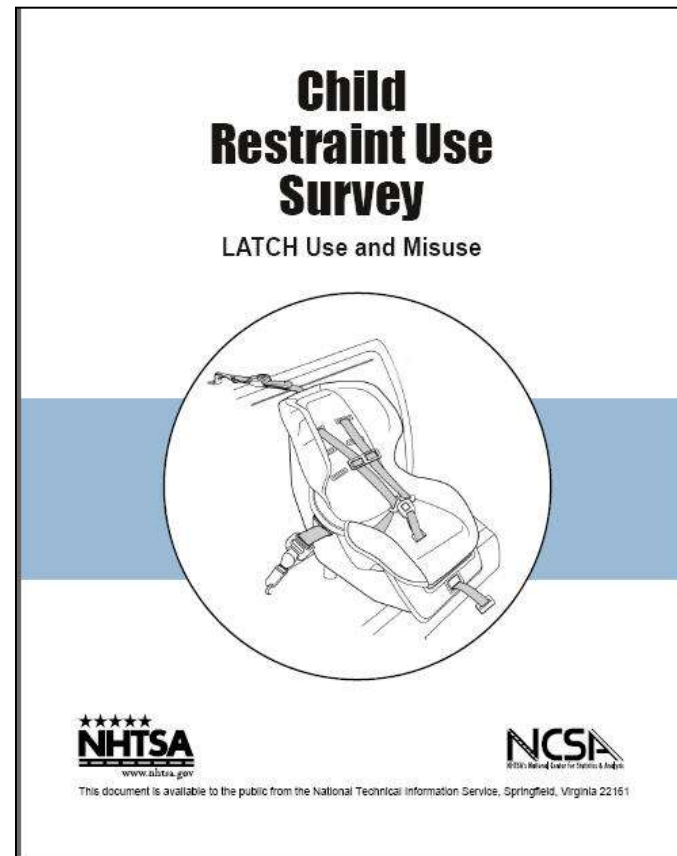


# LATCH Use and Misuse

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## 2006 NHTSA Report

- Data from 2005
- Continues to guide us



# NHTSA Report: Lower Anchors — Major Findings

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- 60% of CRs installed with LATCH
- 13% used LAs and seat belts
- 13% chose a non-LATCH position



Use of both  
belt and  
LATCH



Center use: belt,  
not LATCH

# NHTSA Report: Tethers — Major Findings

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- 55% of CRs installed with tether if both vehicle and CR had tether.

## Misuses:

- 18% – loose
- 12% – twisted
- 9% – improper routing (head restraint)
- 4% – attached to something else

# NHTSA Report: Parent/Caregiver Responses

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- Many people didn't know about LATCH, even when they had it.
- 75% of parents who had used both systems preferred LATCH.
- The other 25% said they preferred to use the seat belt.



# Are Tethers Being Used?

## 2010 data

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- Insurance Institute for Highway Safety
  - *Status Report, 9/8/10*
- **Observations of 1500+ vehicles with FF CRs:**
  - Overall: 43% used tethers
  - Newer models: 47%; Pre-2001 vehicles: 19%
  - 9 of 10 were tight
  - Less tether use with seat belts
- “Observed use of tethers in forward-facing child restraint systems,” J.S. Jermakian et al, *www.iihs.org*

# Why Use Seat Belt vs. LATCH?

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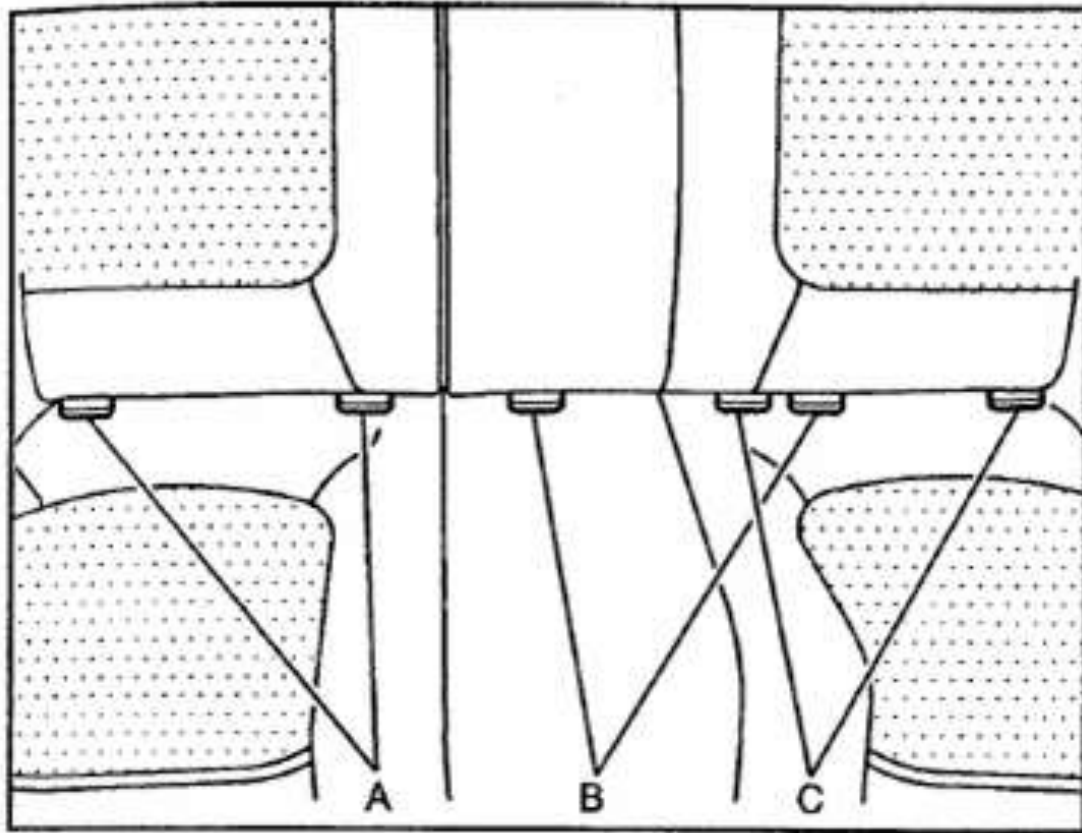
Main reasons:

- ❑ Multiple car seats installed in one vehicle row.
- ❑ CRs for children who weigh more than the vehicle or CR allows with LATCH
- ❑ Center or other non-LATCH position
- ❑ Some users are just more comfortable using seat belts (Decina, et al, 2006).



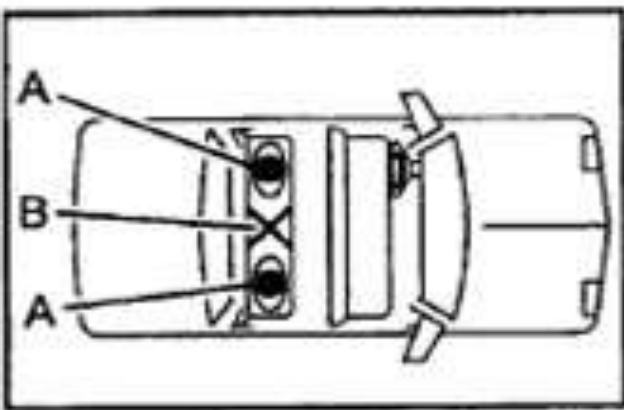
# LATCH and Multiple CRs:

## Cross-over Lower Anchors



Cannot secure 3 restraints using LATCH at the same time

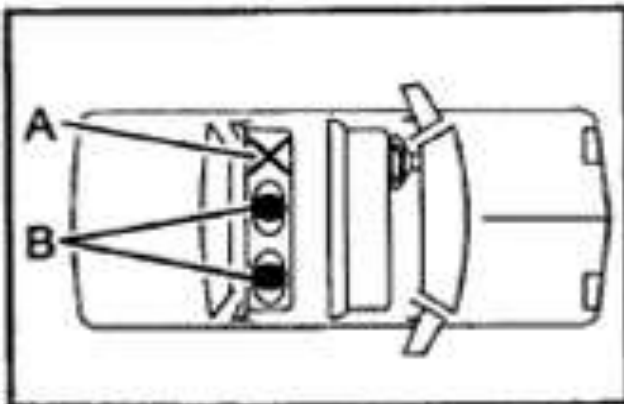
Cannot use B and C at the same time



Scenario #1:

A. Child restraint using LATCH

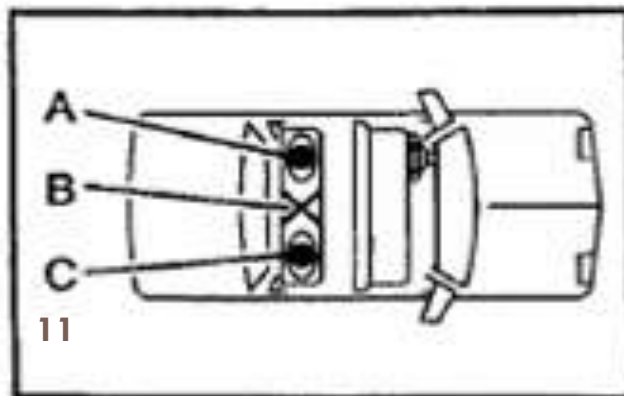
B. Child restraint or occupant using seat belt



Scenario #2:

A. Occupant prohibited

B. Child restraint using LATCH



Scenario #3:

A. Child restraint using LATCH

B. Child restraint or occupant using seat belt

C. Child restraint using seat belt or LATCH or occupant using seat belt

# Lower Anchor Weight Limits

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Vehicle manufacture LA limits, as of 2011  
(when used with tether):

- 22 allow use up to **48** lbs.
- 4 allow only up to **40** lbs.
- 6 brands make **no statement** (12 in '09)
- 12 brands follow **CR instructions** (6 in '09)
- 1 ( Subaru) to 60 lbs. (includes child+CR weight)

# Lower Attachment Limits

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- Car Seat Manufacturer Limits
  - ▣ Most defer to the vehicle manufacturer, if lower.
  - ▣ Hard to generalize, many exceptions.
  - ▣ Most to 48 lbs. or higher, if okay with vehicle manufacturer.
  - ▣ Only Britax\*, Combi, Orbit and Triple Play limit lower attachments to 40 lbs.
  - ▣ Sunshine Kids is exception (after 9/1/05).

\*Britax has exceptions, see manual or listing in Appendix A of *LATCH Manual*.

# Tether Weight Limits

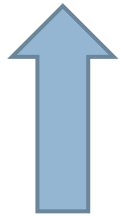
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- **Tether Anchor Weight Maximums w/ LAs**
  - Honda, Acura, Ferrari, Mercedes – 40 lbs.
  - 6 state no limit
  - Majority (30) 48 lbs or “Follow CR weight limits”
- **CR Tether Strap Recommendations**
  - Most CRMs recommend tether strap use for installation at all CR weights.

# Tethers Used w/ Seat Belts

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- Vehicle TA maximums tend to be **higher** with seat belts rather than lower anchorage



- Vehicle TA maximums tend to be **lower** when anchor is retrofit versus factory-installed.

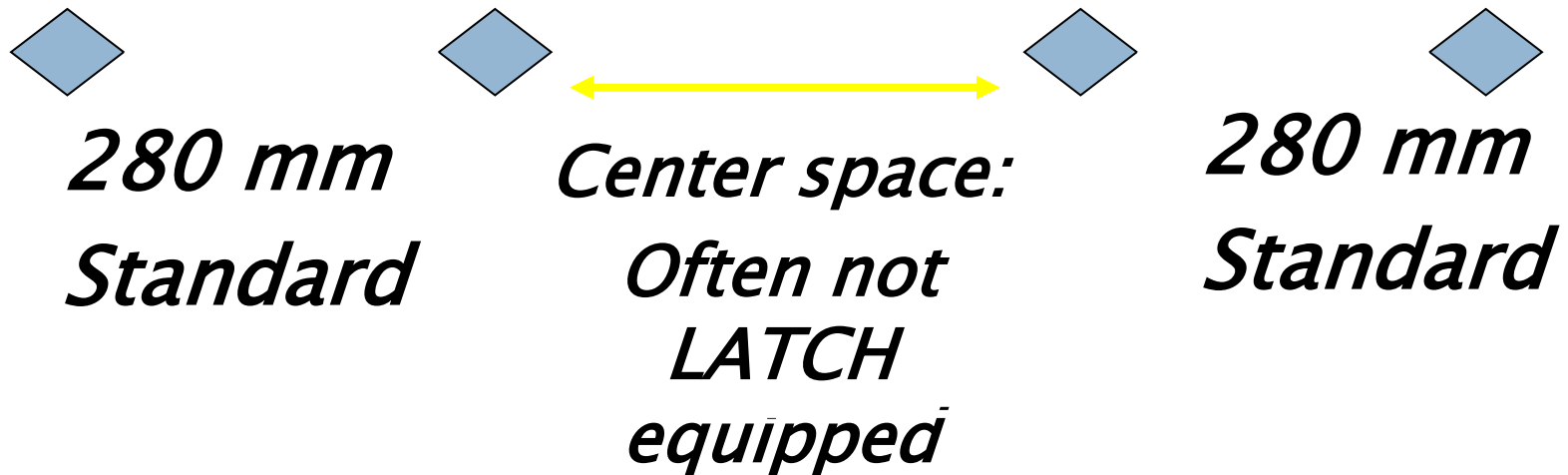


# When Can You Use LATCH in the Center Position?

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- Vehicle owner's manual
- Car seat instructions
- *LATCH Manual*

# Center Position Issues



Only about 15% of new vehicles are equipped with standard LATCH in a center position.

# Non-Standard LATCH Positions

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## Only use if:

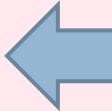
- Spacing 11 inches to 16-20 inches (280–400 mm), usually.
- Both CR and vehicle manufacturers allow use.
- LA use does not interfere with seat belt use in outboard positions.



# Use of Non-Standard Positions:

## Consult both CR and Vehicle Manuals

	CR Instructions	Vehicle Instructions	Can We Use LAs in Center Position?
1.	No	No	NO
2.	No	Allow* if CR instructions permit*	NO
3.	Allow* if vehicle instructions permit	No	NO
4.	Allow* if vehicle instructions permit*	Allow* if CR instructions permit*	<b>YES</b>



\* Allow = permission (other permissive words may be used, such as “permit” or “recommend”)

# Seat Belt Challenges

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- Modern Seat Belts – Not Designed for CRs
- Hinges, Bumps, and Bulges
- Potential Lockability Sunsetting
- New Technology: Inflatable Seat Belts

# Modern Seat Belt Designs

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Common seat belt design trends, seen at recent Seattle Auto Shows, include:



- Forward mounting; not emerging from bight
- Rigidly-mounted buckles; not on webbing
- Setting at an angle – 30-45 degrees
- Center shoulder belt mounting – from ceiling, wall, seat

# Forward-Mounting – It's Baaaack!

- Regaining popularity
- Some arrangements are asymmetrical, others forward at both anchor points.
- Seatback contours often create forward-mounting



# Common Buckle Designs

Buckles low, not on webbing. . .



... also, many are rigidly-mounted to a set angle.

# Hinges, Bumps and Bulges



Consumers want folding options, which creates hinges.

# Center Lap-Shoulder Belts

- Required since MY 2008.
- Many emerge from the ceiling.
- Others from a far wall.
- Best installations usually achieved when shoulder belt anchored to top of the vehicle seat itself.



# If Sunsetting Occurs. . .

- Seating positions with LATCH system will not be required to have locking feature. Locking clips or lock-offs would be needed.
- Seating positions without LATCH would still require locking feature.

Remember this?



# Will Sunsetting be Rescinded?

- Petition from SRN and SBS submitted 1/07
- NHTSA issued an NPRM to rescind clause in 2007
- Comment period ended in November 2008
- Decision has not yet been announced!

# New Seat Belt Technology

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- Inflatable Seat Belts
- Currently two CR manufacturers prohibit use of these belts : Britax and Combi
- Design uses dual retractor with sewn on latchplate – a type some manuals prohibit



# Outlook: How Can CPSTs Help?

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- Participate in Community Events
- Publicize Safety Messaging
- File Petitions for Improvements
- Respond to Calls for Public Comments on Notices of Proposed Rulemaking

# www.regulations.gov

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- Search for a regulation such as a proposed rule, final rule or Federal Register (FR) notice
- Submit a comment on a regulation or on another comment
- Submit an application, petition or adjudication document
- Sign up for e-mail alerts about a specific regulation
- Subscribe to RSS feeds by agency of newly posted FR notices

# Home Page Easy to Navigate

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The screenshot displays a navigation bar with four icons and their corresponding labels: a magnifying glass over a folder for 'search for a proposed rule', a play button on a document for 'submit a comment', a speech bubble for 'read comments', and a gavel for 'search for a final rule'. Below this bar is a search section with a 'Select Document Type:' dropdown menu, a 'Enter Keyword or ID:' text input field, and a blue 'Search' button. To the right of the search button are two links: 'Advanced Search' and 'Browse By Topic', both preceded by blue double arrow icons. Below the search input field are two checkboxes: 'Open for Comment/Submission' and 'View results by docket folder'.

search for a proposed rule

submit a comment

read comments

search for a final rule

Select Document Type:

Enter Keyword or ID:

Open for Comment/Submission

View results by docket folder

**Search**

» [Advanced Search](#)

» [Browse By Topic](#)

# RSS Feed Puts New Info Up Front

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A screenshot of an RSS feed interface. It features three main sections. The first section is titled 'Federal Register: National Highway Traffic Safety Administration' and contains three items, each with a plus icon and a link: 'Federal Interagency Committee on Emergency Medical Service (FICEMS) Teleconference Meeting', 'National Emergency Medical Services Advisory Council (NEMSAC); Notice of Federal Advisory Committee Meeting', and 'Goodyear Tire and Rubber Company, Receipt of Petition for Decision of Inconsequential Noncompliance'. The second section is titled 'Federal Register: Transportation Department' and contains three items: 'Commercial Space Transportation Grants Program', 'Goodyear Tire and Rubber Company, Receipt of Petition for Decision of Inconsequential Noncompliance', and 'Amendment of Class E Airspace; Newport, VT'. The third section is titled 'Top Stories' and contains three items: 'Japan races to cool crippled nuke plant' (ABC Online - all 28696 related), 'Obama Tells Gadhafi to Stop Attacks on Innocent Citizens' (Voice of America - all 10544 related), and 'Amid Protests, Saudi King Raises Benefits but Strengthens Security' (New York Times - all 663 related).

# Current NPRM Comment Period

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- NHTSA proposes a CRS-Vehicle Fit consumer information program.  
Docket # NHTSA-2010-00062
- VOLUNTARY for vehicle manufacturers.
- Would be part of the NCAP Program.
- Would be available at [www.safercar.gov](http://www.safercar.gov).
- Comments due April 26, 2011.

# Contact Us:

- Safe Ride News: 800-403-1424
  - E-mail questions/comments to:  
*info@saferidenews.com*
  - Find recent articles, LATCH updates, order forms, and much more at: *www.saferidenews.com*

Thank you for your comments! They help us evaluate our products in the future.