



To LATCH or Not to LATCH. . .
. . . why is there still a question?

KIM 2011-D. Donaldson, SRN

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Or,

The Excruciatingly Complex
Saga of Our Journey
To Make Child Restraint
Installation Simple

A Serio-Comedy
in Three Acts

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Act 1:
Setting the stage
for LATCH



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Mid '90s: The ISO Committee Works on a Solution



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By the late '90s the U.S. creates its version: LATCH



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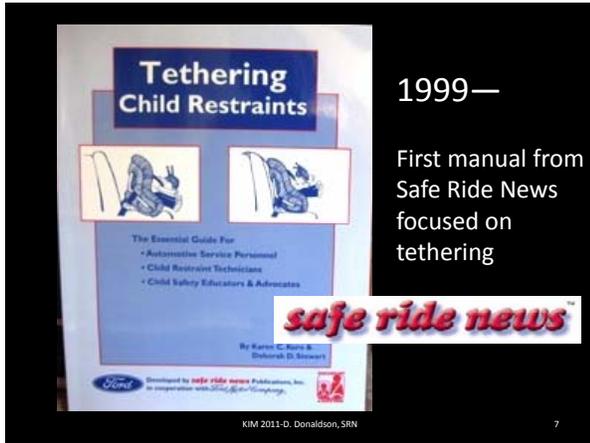
5

A Sure Sign of Past Optimism: "Lockability Sunsetting"

The standard was written for this to occur in LATCH positions as of September 2012.

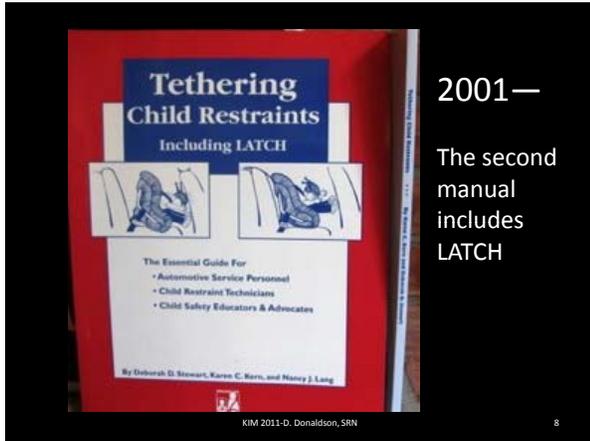
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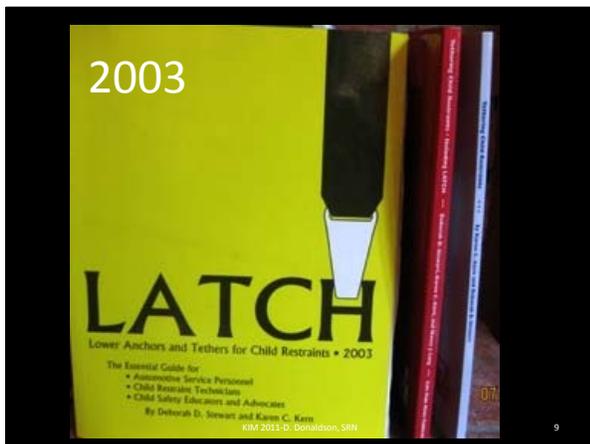
1999—

First manual from Safe Ride News focused on tethering

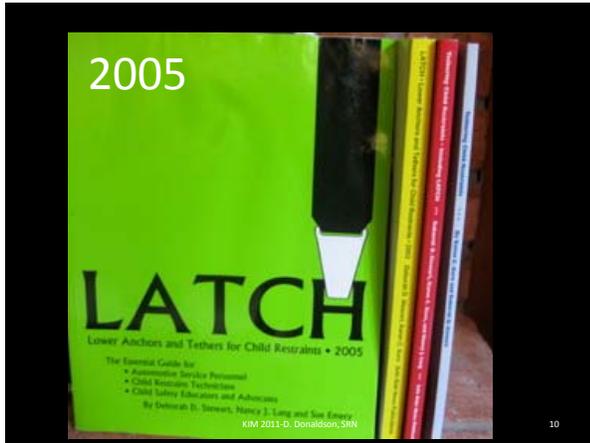


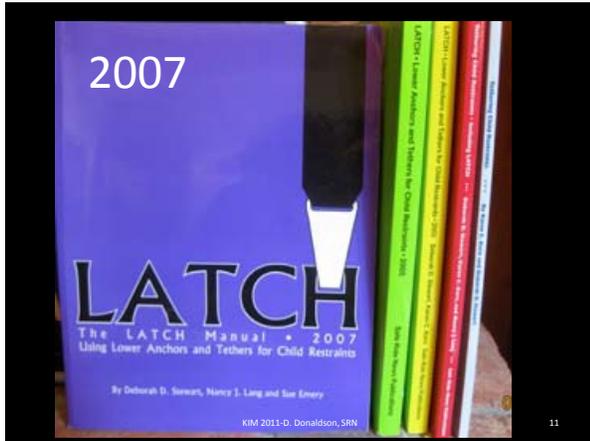
2001—

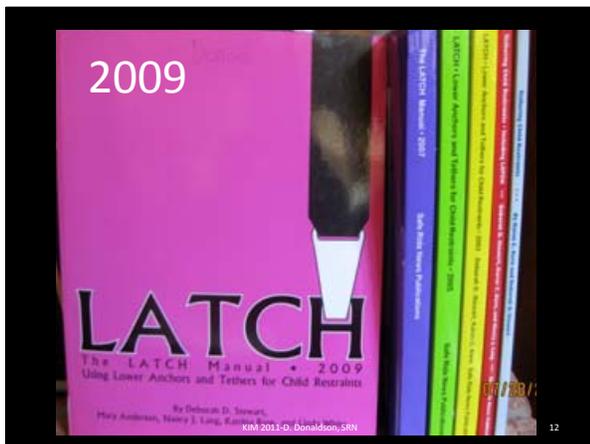
The second manual includes LATCH

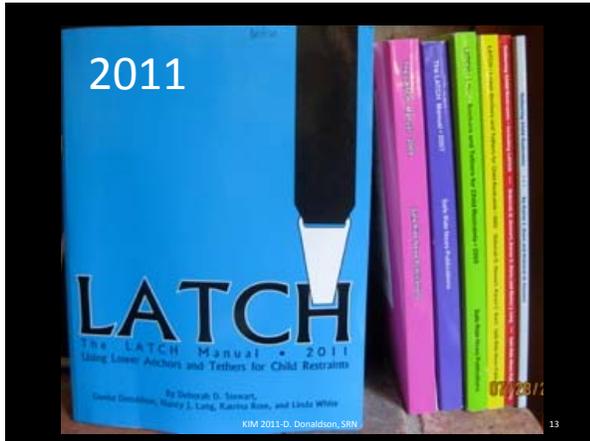


2003









Act 2: The scene today

Stick to the CURRENT Script!

Best Practice:
Refer to owner's manuals and ALWAYS use the most current LATCH Manual version!

Why Most Current LM is Essential

- SRN prepares the questions/edits . . .
- Manufacturers provide the input/give final OK.

Mazda
U.S. 800-222-5500 www.mazdausa.com
Canada 800-263-4680 www.mazds.ca

- Installation of CRs in center position with non-standard spacing: Use of lower bars from standard LATCH positions for center installation with a LATCH CR is allowed in some models if CR instructions explicitly allow it. See specific model settings below.
- Maximum weight limit for LATCH system anchors: Mazda does not specify a maximum weight. See the CR Manufacturer listing in Appendix A for the CR you are installing.
- Maximum weight limit for lower anchors: Mazda does not specify a maximum weight. See the CR Manufacturer listing in Appendix A for the CR you are installing.
- Maximum weight limit for tether anchors used with a seat belt: Mazda does not specify a maximum weight. See the CR Manufacturer listing in Appendix A for the CR you are installing.
- Securing Shell-Featuring Bucklers using LATCH: Use of lower and tether anchors with a SIB is NOT recommended.
- Seat belt used as a Tether Anchor: A seat belt from the row behind can NOT be used as a TA.
- Shoulder Belt Entanglement: Mazda has no recommendation at this time regarding reducing the risk of shoulder belt entanglement.
- Shoulder Belt Entanglement: If no interference exists between the lower anchors and seat belt, buckle the back/shoulder seat belt behind a forward-facing LATCH-installed CR and buckle the adjacent seat belt.
- when not in use. To prevent breaking the seat belts and buckles attach the CR to the lower anchors first and after hooking the seat belts connect the tether strap to the tether anchor.
- Advanced air bag (AAB) suppression system: Mazda's AAB technology CAN be negatively affected by pressure/force up from under the lower part of the front seat for all models. See owner's Manual. Sensors are located on the passenger-side front seat.
- Tether anchor tabs: U.S. tether anchor points: Most MY99-09 models have weld nuts at anchor points for installing seats. TA4. Canadian tether anchor points: All vehicles sold in Canada beginning in MY09 have weld nuts at anchor points and come with a separate TA kit in the glove box. Canadian and U.S. part numbers for TA kits are the same, as noted below. Prices for the tether anchor kits range from \$11.00 to \$38.00. A tether anchor kit includes bolts and spacers and one anchor plate hardware. Bolt lengths differ depending on vehicle model and year. The kit provides parts for installation for only one seating position in either the center or outboard position. Extra bolts and spacers are included in the kit because the center and outboard positions may require different length bolts and/or spacers.

Why Most Current LM is Essential

- SRN prepares the questions/edits . . .
Manufacturers provide the input/gives final OK.
- **Manufacturers review ALL info, not just new MYs . . .
Also, always check for updates online.**

✓ www.saferidenews.com

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Why Most Current LM is Essential

- SRN prepares the questions/edits . . .
Manufacturers provide the input/gives final OK.
- **Manufacturers review ALL info, not just new MYs . . .
Always check for updates online**
- **It's foolish to ignore manufacturer advice . . .
But it's worthwhile to ask questions.**

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"To LATCH or NOT" Scenarios

- 1.LATCH in the center rear
- 2.LATCH in multiple positions
- 3.LATCH with HWH CRs
- 4.Tethering in general
- 5.LATCH with belt positioning boosters



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1. LATCH in the Center Rear

“Parting is such sweet sorrow . . .”
And sometimes getting a CR in the center is no picnic, either!



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The Car Seat Lady

Color	# of anchors	Explanation
1	2	Center only
2	4	All 4 exactly 11 inches apart
3	4	Center >11in
4	4	Driver & Center
5	4	Center & Passenger
6	5	Driver & Center share an anchor - install driver/passenger or center/passenger, never driver/center with Lower Anchors
7	5	Center & Passenger share an anchor - install driver/passenger or driver/center, never center/passenger with Lower Anchors
8	6	If spacing permits, can install 3 car seats using Lower Anchors
9	6	Driver/Center overlap - so can install using the Lower Anchors just in center, or center & passenger, or driver & passenger
10	6	Insufficient room between either pair of Lower Anchors to allow 2 car seats side by side - therefore if using Lower Anchors can install just in center, or 2 on driver & passenger

<http://thecarseatlady.wordpress.com>

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Non-Standard LATCH in the Center

Only install this way if:

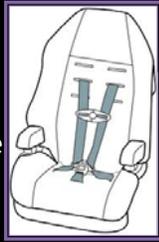
- Both CR and vehicle manufacturers allow it.
- Spacing is within range allowed by CR manufacturer (upper limit may be 14 -20 inches).



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Use of Non-Standard LATCH: CR Manufacturer Policies as of 2011

- 11 allow; 21 do not
- Combi, Graco, and Sunshine Kids now say "OK"
- Many that do not allow have rigid LATCH
- Must also remember to follow the width allowed



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CR Manufacturer Policies in App. A, 2011 LATCH Manual

YES!

NO!

Can CR be Installed in the Center with Non-Standard Lower Anchors:

Yes—Center use with lower anchors allowed with bars spaced 11 inches or wider if vehicle manufacturer permits:

Manufacturer	Spacing allowed (inches)
Britax	11-20
Combi*	Yes space not specified
Dorel	Yes space not specified
Fisher-Price (Safe Voyage)	11-20
Graco*	Yes space not specified
Orbit	11-20
Recaro	11-20
SafeGuard	11-20
Snugg Seat	11-20
Sunshine Kids*	11-14
Triple Play Products	11-18

* Change from 2009 LATCH Manual

No—Center installation with lower anchors allowed only in standard LATCH positions specified by VM:

Baby Trend	Mercedes-Benz (Rigid)
Bergeron	Meritor Manufacturing†
Chico	mi-Moda
Clek (BPR, Rigid)	Peg Perego
Cyber (MFB, Rigid)	Porsche (Rigid)
Evenflo	Sammons Preston (2007 date)
E-Z, CPN Products	Snugg Seat
Juni (Rigid)	Team USA America*
Max-Embrace	Teutonia
Max-Curve	Xportation
Max	

Allowed Widths

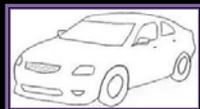
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Use of Non-Standard LATCH: Vehicle Manufacturer Policies as of 2011

- No changes from 2009 LM
- OK —all Ford brands (Ford, Lincoln, Mercury) since MY 2009
- OK — *select models only* of Chrysler brands (Chrysler, Dodge, Jeep and Ram), Mazda, and pre-2009 MY Ford.

(See LM, Appendix B)



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Decision: Center Use with Non-Standard Width Lower Anchors

	CR Instructions	Vehicle Instructions	Use LAs in Center Position?
1.	No* or not stated	No* or not stated	NO
2.	No* or not stated	Allow** if CR instructions permit	NO
3.	Allow* if vehicle instructions permit	No* or not stated	NO
4.	Allow* if vehicle instructions permit*	Allow** if CR instructions permit	YES

*No=may be stated as "not recommended" or "not advised."
 **Allow=permission (other permissive words may be used, such as "permit" or "recommend").

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To LATCH or NOT To LATCH?



Chicco Key Fit in 2007 Toyota Corolla

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To LATCH or NOT To LATCH?



What if it had been in a 2005 Mazda 6?

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Center installation using non-standard lower anchors

How about a Combi Cocorro in 2005 Mazda 6?

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To LATCH or NOT To LATCH?



Center installation using non-standard lower anchors

How about a SK Radian XTSL in 2005 Mazda 6?

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2. Multiple LATCH Positions

- Fewer vehicles have more than required two LATCH positions.
- Fewer minivans available.
 - 15 available 4 years ago, 7 for MY 2011
- Often, LATCH positions decrease rather than increase when models are redesigned.
- Some “unintended consequences” of LATCH positions alleviated in 2011 LM.

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To LATCH or NOT To LATCH?

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To LATCH or NOT To LATCH?

2011 LATCH Manual:
Honda and others
clarify some
directions in Appendix
B notes field.

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2. LATCH with HWH CRs

“Frailty, thy name is . . . LATCH anchor hardware?”

Paying attention to anchor weight limits

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Lower Anchor Weight Limits (when used with tether)

Vehicle manufacture limits, as of 2011:

- 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)

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To LATCH or NOT to LATCH?

Britax Marathon;
upper weight limit
65 pounds

First
Question?



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To LATCH or NOT to LATCH?

Britax Marathon;
upper weight limit
65 pounds

First Question?

How much
does child
weigh? 45 lbs.



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To LATCH or NOT to LATCH?

Britax Marathon;
upper weight limit
65 pounds, child
weighs 45 lbs.

Next Question?



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To LATCH or NOT to LATCH?

Britax Marathon;
upper weight limit
65 pounds, child
weighs 45 lbs.

Next Question?

What's the vehicle
manufacturer?
Honda



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To LATCH or NOT to LATCH?

Britax Marathon;
upper weight limit
65 pounds, child
weighs 45 lbs., in a
Honda Odyssey
van.

What to do?



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To LATCH or NOT to LATCH?

Britax Marathon;
upper weight limit
65 pounds, child
weighs 45 lbs., —
BUT WHAT IF THIS
WERE A TOYOTA?



Now what?

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When the Manufacturer Doesn't Specify

- If ever in doubt, use the seat belt
- Try to use the tether, if possible
- Decision Table in 2011 LM, page 108
- CPS Standardized Curriculum now states to assume 40 lbs.

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4. Tethering

Tethers make a difference!

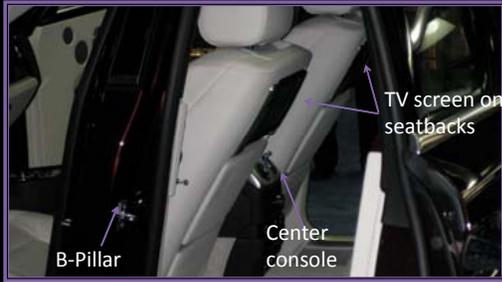
- Especially important for taller children.
- Required with CRs for special needs.
- New AAP Policy Statement encourages longer harness use.



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Space for Excursion is Limited!



B-pillar, center console, video screens, etc., can hurt!

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Tether Anchors

- Availability:
 - 51 models exist that have more than 3 anchors
 - Only 25 are MY 2011
- Weight maximums w/ LAs
 - Honda, Acura, Ferrari, Mercedes – 40 lbs.
 - 6 state no limit
 - Majority (30) 48 lbs or “Follow CR weight limits”

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Tethers with Seat Belts

- Vehicle max tends to be **higher** with **seat belts** rather than LAs.
- Vehicle max tends to be **lower** when anchor is **retrofit** versus factory-installed.
- Most CR manufacturers recommend tether use at all CR weights.

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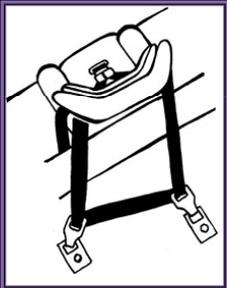
45

Tether Function "Alternatives"

- A. Alternative techniques
- B. New CR designs
- C. New CR technology

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A. Alternative Techniques

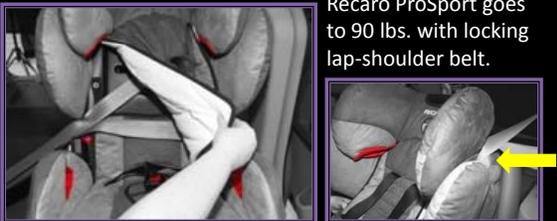


- Dual tethers on CRs for special needs.
- Tethering to seat belt in row behind.
- Heavy-duty TA – last resort.

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B. New CR Designs

Belt paths that route shoulder belt to function like a tether.



Recaro ProSport goes to 90 lbs. with locking lap-shoulder belt.

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C. New CR Technology



Some CRs have features that help limit head excursion in ways other than tethering.



SKJG steel alloy frame

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O Tether Anchor,
Tether Anchor . . .

Where is that darn
Tether Anchor?!



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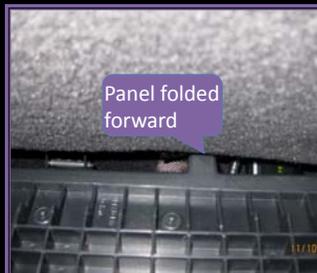
50

To Tether or NOT To Tether?

Ford Expedition, third-row bench seat . . .



Panel with LATCH logo



Panel folded forward

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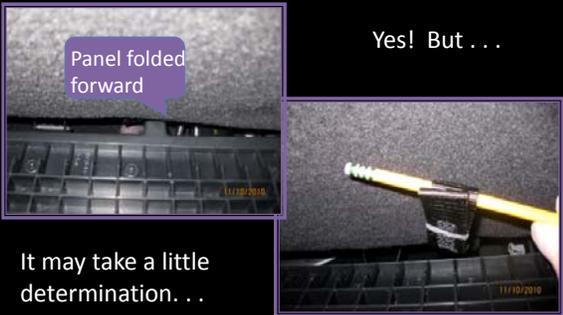
51

To Tether or NOT To Tether?

Panel folded forward

Yes! But . . .

It may take a little determination. . .



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To Tether or NOT To Tether?

. . . It helps to know what you are looking for!



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To Tether or NOT To Tether?



In the Chevy Venture and Pontiac Montana minivans, it seems as though tether must be twisted to be attached.

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To Tether or NOT To Tether?

YES! Installation technique involves folding seat forward,



then tether can be added without a twist.

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LATCH with Boosters

- Some rigid
- Some flexible – tight or loose?



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LATCH with Boosters



vehicle situation and advice must also be considered!

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Act 3: "All's well that ends well!"



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Tether Use Rate: Under 50%!

- Insurance Institute for Highway Safety
Status Report, 9/8/10
- Observations of 1500+ vehicles with FF CRs:
 - Pre-2001 vehicles: 19%
 - Newer models: 47%
 - 9 of 10 were tight

"Observed use of tethers in forward-facing child restraint systems," J.S. Jermakian et al, www.iihs.org

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LATCH in NHTSA Priority Plan 2011-2013

- "Other Significant Projects"
- May initiate rulemaking to address LATCH-related issues by the end of 2011.
- Issues : LATCH installation in the center rear, TA locations, weight limit differences between CRs and TAs, and anchorage labeling
- Booster project proposes labels to say that LATCH not be used for children over 65 lbs.

Document available at www.regulations.gov . Enter docket number NHTSA-2009-0108. (It is also a "Quick Click" on the NHTSA homepage.)

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Regulations.gov is now easier to navigate

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All the World Rides in Stages*
(*with apologies to The Bard!)

All the world rides in stages
And we are merely teachers
We check their cars
Matched with Gas
And walk through all the features.

When educating families
their children to restrain,
It's not just talk
We will let walk
Of learn, practice, and Explain.

LATCH holds the key to future ease
Despite some growing pains.
We'll persevere
Because it's clear
It's worth it for the gains.

Change may be slow and feel as though
It drags in perpetuity,
But stay upbeat,
And at the least
It may be job security!

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safe ride news™

- E-mail questions/comments to:
info@saferideneews.com
- Call us at 800-403-1424
- Find recent articles, LATCH updates, order forms, and much more at:
www.saferideneews.com

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

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