

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

[Docket NHTSA-2006-25344]

Consumer Information; Rating Program for Child Restraint Systems

AGENCY: National Highway Traffic Safety Administration (NHTSA), Department of Transportation (DOT).

ACTION: Notice, Final Decision.

SUMMARY: In response to Section 14(g) of the Transportation Recall Enhancement, Accountability, and Documentation Act, the National Highway Traffic Safety Administration established a yearly ease of use assessment program for add-on child restraints. Since the program was established, the most notable improvements have been made to child restraint harness designs, labels, and manuals. On November 23, 2007, the agency published a notice seeking comment on revisions to the program. This notice summarizes the comments received and provides the agency's decision on how we will proceed. The agency has decided to enhance the program by including new rating features (the design aspects that are being evaluated) and criteria (the questions that evaluate the feature), adjusting the scoring system, and using stars to display the ease of use rating. We anticipate that these program changes will result in a more robust rating program for consumers while continuing to encourage manufacturers to refine current

features and in some cases, install more features that help make child restraints easier to use.

FOR FURTHER INFORMATION CONTACT: For technical issues related to the Ease of Use rating program, you may call Nathaniel Beuse of the Office of Crash Avoidance Standards, at (202) 366–4931. For legal issues, call Deirdre Fujita of the Office of Chief Counsel, at (202) 366–2992. You may send mail to these officials at the National Highway Traffic Safety Administration, 1200 New Jersey Ave SE, Washington, DC, 20590.

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I. Introduction

In response to the Transportation Recall Enhancement, Accountability, and Documentation (TREAD)¹ Act, the National Highway Traffic Safety Administration

¹ Section 14 (g) of the TREAD Act, November 1, 2000, Pub. L. 106–414, 114 Stat. 1800

(NHTSA) issued a final rule² on November 5, 2002 that established a program that rates child restraint systems (CRS) on how easy they are to use.³ To date, the agency's Ease of Use (EOU) program has been very successful in encouraging child restraint manufacturers to improve child restraint designs, labels, and manuals such that now nearly all child restraints achieve the top rating. While child restraint manufacturers are to be commended for their overwhelming response to the program, today the ratings are such that it is difficult for consumers to discern ease of use differences between products.

On November 23, 2007, NHTSA published a request for comment on the agency's considered updates to the features and criteria used in the child restraint EOU ratings program, along with the method in which the ratings are displayed to consumers (72 FR 65804, Docket 2006-25344). In proposing these revisions, the agency considered recent consumer use surveys conducted by the agency and others on Lower Anchors and Tethers for Children (LATCH), public comments submitted as a result of NHTSA's February 8, 2007 public meeting on LATCH,⁴ a comprehensive study of the agency's EOU program, and feedback from current EOU raters.

Our request for comment highlighted several changes that we believed would encourage consumers to purchase and manufacturers to provide easier to use features, in particular for LATCH hardware and child restraint harnesses. These changes would also allow the agency to begin recognizing newer design features that have entered the market since the program's inception. We also sought to provide continued incentive for manufacturers to design child restraint features that are intuitive and easier to use. We

² 67 FR 67448, Docket NHTSA-2001-10053.

³ The EOU rating does not compare the crash performance of different child restraints. However, a child restraint is most effective if correctly installed in the vehicle as well as properly adjusted to the child. A child restraint that is easier to use should theoretically have a lower misuse rate.

⁴ 72 FR 3103, January 24, 2007. Full transcript can be found in Docket Number NHTSA-2007-26833-23.

sought comment on proposed changes to the numerical break points (e.g. ranges) used to assign different ratings to the restraints in order to make the top rating harder to achieve. In addition to making the top ratings harder to achieve, the agency also requested comment on changes to the way it presents EOU ratings to the public. Rather than using a 3-level letter grading system, the agency proposed that the upgraded EOU ratings would be presented to consumers using our familiar 5-level star rating system, such as used in our vehicle safety ratings program. In conjunction with the rating criteria and feature changes, this change would allow for more levels of differentiation among products, and a more user-friendly system for consumers to use in making their purchasing decisions.

In response to the notice, the agency received comments from research organizations, consumer groups, child restraint manufacturers and a trade organization representing a number of child seat manufacturers. While all of the commenters supported our efforts to update the EOU program, there were three main issues where the majority of commenters disagreed with the agency's proposal. These issues involved the proposal to use stars to display child restraint ratings, the proposed labeling features, and proposed features relating to harness and LATCH lower attachment designs. This notice summarizes the comments, provides the agency's analysis of those comments, and implements our proposal to enhance the EOU rating program.

II. Summary of Request for Comments

In our November 23, 2007, Federal Register notice, the agency proposed to continue rating each child restraint under every mode of correct use via three separate forms: rear-facing (RF), forward-facing (FF), and booster. We also discussed some

significant changes with regard to the categories, features, and criteria used for rating child restraints. In addition, we proposed an update to the break points used to assign ratings to the restraints in an effort to make the top rating harder to achieve. The agency also proposed to change the way it presents the child restraint EOU ratings to the public.

We pursued these changes because we first wanted to incorporate features that were not included in the original program. Secondly, we wanted to strengthen some existing features by reducing their criteria from three levels to two, reducing grade inflation resulting in an overall feature that is easier for the raters to evaluate. Thirdly, we wanted to combine related features into one in order to reduce redundancy. Lastly, we deleted some redundant features to also reduce the occurrence of grade inflation. The proposed changes are highlighted below.

A. Rating Categories and Their Associated Features

1. Assembly

The agency proposed to eliminate the “Assembly” rating category but distribute the features from this category among the “Evaluation of Instructions” and “Securing the Child” categories as they were still needed. The agency believed that most of the features in this category should be rated only under one mode (in the case of multi-mode child restraints) to reduce grade inflation. In addition, we believed that some features should have their rating criteria reduced from three levels to two.

2. Evaluation of Labels

Under this category, the agency proposed upgrading the rating forms to better assess child restraint labels for accuracy and completeness. The proposed rating forms

contained the following features (each mode the feature would apply to is included in the parentheses):

- a. Clear indication of child's size range. (RF, FF, Booster)
- b. Are all methods of installation for this mode of use clearly indicated? (RF, FF, Booster)
- c. Are the correct harness slots for this mode indicated? (RF, FF)
- d. Label warning against using a lap belt only. (Booster)
- e. Seat belt use and routing path clarity. (RF, FF, Booster)
- f. Shows how to prepare and use lower attachments. (RF, FF)
- g. Shows how to prepare and use tether. (FF)
- h. Durability of labels. (RF, FF, Booster)

- a. Clear indication of child's size range. (RF, FF, Booster)

The agency proposed to expand this feature to assess whether the child restraint labels contain additional sizing information beyond the required height and weight limits of Federal Motor Vehicle Safety Standard No. 213⁵, “*Child Restraint Systems*”. We believed that parents and caregivers would benefit from visual indicators that describe how an appropriately sized child should fit in the restraint and noted that a limited number of child restraints currently provide this information.

- b. Are all methods of installation for this mode of use clearly indicated? (RF, FF, Booster)

⁵ See 49CFR571.213

The agency suggested that it was going to clarify the criteria for the FF mode so that the tether is labeled with every configuration. We believed that the clarification would help reinforce the use of the tether with a FF child restraint.

c. Are the correct harness slots for this mode indicated? (RF, FF)

The agency proposed an update to this feature so that it included criteria to evaluate whether harness slots are labeled to indicate the modes of use to which they correspond. In addition, the agency proposed that the child restraint should indicate graphically how the harness should fit the child's shoulders. By doing this, multi-mode child restraints would be encouraged to label harness slots for both the rear-facing and forward-facing modes and all restraints would provide caregivers with a visual that allows them to assess the child's fit with respect to the harness.

d. Label warning against using a lap belt only.(Booster)

The agency proposed a new feature that would evaluate the presence of an illustrated warning advising against the use of a lap belt only if a booster is not supposed to be used with one. In making this proposal, the agency was not aware of any booster seats in the current market that were recommended for use with a lap belt only. The agency felt that the presence of an illustration could reinforce that these devices should only be used with a lap-shoulder belt.

e. Seat belt use and routing path clarity. (RF, FF, Booster)

We proposed to strengthen this feature by encouraging child restraints manufacturers to label belt and flexible lower anchor paths on both sides of the restraint.

We believed this was necessary to ensure that regardless of the user's point of installation, the belt and lower anchor path can easily be seen.

f. Shows how to prepare and use lower attachments. (RF, FF)

The agency proposed to combine two previous lower attachment-related features into one to make the resulting feature more objective and encourage more manufacturers to include better information. The proposed feature would evaluate whether the labels clearly depict all steps of lower attachment preparation and use.

g. Shows how to prepare and use tether. (FF)

The agency proposed to evaluate child restraints on whether proper tether use and preparation was sufficiently explained by clear illustrations and concise text on the child restraint labels. This update would help to encourage more widespread, correct use of the top tether.

h. Durability of labels. (RF, FF, Booster)

In order to improve the strength of this feature as well as the rating system in general, the agency proposed to modify this feature so that we will only assess the durability of the labels on multi-mode child restraints once, in their youngest mode. For example the durability of the labels on a convertible child restraint would only be evaluated once, in the rear facing mode of use.

3. Evaluation of Instructions

For this category, the most significant change proposed by the agency was to reduce the weighted value for the majority of the features. Most of the concepts rated under the "Evaluation of Labels" category are also reflected in the "Evaluation of Instructions" category so there was little need to rate them highly in both places. We also

believe that pertinent information about correct daily use should be communicated clearly on the child restraint labels as well as in the instruction manual. The proposed rating forms contained the following features. Each mode the feature applies to is included in the parentheses:

- a. Owner's manual easy to find? (RF, FF, Booster)
 - b. Evaluate the manual storage system access in this mode. (RF, FF, Booster)
 - c. Clear indication of child's size range. (RF, FF, Booster)
 - d. Are all methods of installation for this mode of use clearly indicated? (RF, FF, Booster)
 - e. Air bag/rear seat warning? (RF, FF, Booster)
 - f. Instructions for routing seat belt. (RF, FF, Booster)
 - g. Shows how to prepare & use lower attachments. (RF, FF)
 - h. Information in written instructions and on labels match? (RF, FF, Booster)
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- a. Owner's manual easy to find? (RF, FF, Booster)

This feature was previously located under the “Assembly” category. In proposing to delete that category, the agency felt that the feature was still needed but that it should be moved to the “Evaluation of Instructions” category. Also, the agency proposed that this feature would now be assessed only once, when the child restraint is being evaluated in its youngest mode of use, to reduce grade inflation.

- b. Evaluate the manual storage system access in this mode. (RF, FF, Booster)

Previously, this feature was assessed under the “Assembly” section, but similar to the feature above, the agency proposed to move it to this category. In addition, the

agency also modified the feature to evaluate whether the storage device is difficult to access in addition to whether it is difficult to find or use. We believe that the child restraint manual should be easily stored, and the user should be able to retrieve it while the child restraint is installed and the child is in the restraint.

c. Clear indication of child's size range. (RF, FF, Booster)

Similar to the updated label feature, the agency proposed that this criterion be expanded to include whether child restraint instructions contain additional sizing information beyond the height and weight limits of FMVSS No. 213.

d. Are all methods of installation for this mode of use clearly indicated? (RF, FF, Booster)

To reinforce the use of the tether with FF child restraints and if allowed by the manufacturer for boosters, the agency proposed clarifying the previous feature to encourage that the tether is labeled and pictured with every installation configuration.

e. Air bag/rear seat warning? (RF, FF, Booster)

The agency proposed to modify this feature so that instead of encouraging the identical warning for each type of child restraint, FF and booster seat instructions would be encouraged to contain warnings about the rear seat being the safest place for children only. With the exception of seats rated in the RF mode, the agency did not indicate a separate label was needed to do this. In this way, the instructions would be more consistent with child passenger safety recommendations. Child restraints evaluated under the RF forms would still need to convey this information in addition to the current FMVSS No. 213 airbag warning requirements for a separate, obvious, illustrated warning.

f. Instructions for routing seat belt. (RF, FF, Booster)

The agency proposed to enhance this feature by also evaluating whether manufacturers provided information on different seat belts styles, retractor types, and latch plate types and how each should be used with the child restraint in question. In this way, loose and incorrect installations due to seat belt misuse could be reduced.

g. Shows how to prepare & use lower attachments and tether. (RF, FF)

As in the “Evaluation of Labels” section, the agency proposed combining the “preparing” and “using” features for the lower attachments to reduce redundancy. Similarly, we proposed to remove the separate feature calling for a diagram depicting the correct orientation of the lower attachments. Additionally, it was proposed that FF child restraints be evaluated on whether or not they have complete tether directions.

h. Information in written instructions and on labels match? (RF, FF, Booster)

Because the agency still observed instances in which there was conflicting information between the written instructions and the labels, in addition to the existing criteria, the agency proposed new criteria that would evaluate whether or not all pictures on the labels are conveying the same information as in the written instructions. Also, for the purposes of recalls, the agency proposed that the presence of the child restraint model name be evaluated.

4. Securing the Child

The agency proposed the most changes in this category, which assesses child restraint features that help secure the child in the restraint. New features were proposed to be added to the rating and a number of previous features were combined to reduce grade inflation. We also proposed changes to many of the criteria used to evaluate the features.

The proposed rating forms contained the following features. Each mode the feature applies to is included in the parentheses:

- a. Is the restraint assembled & ready to use? (RF, FF, Booster)
- b. Does harness clip require threading? Is it labeled? (RF, FF)
- c. Evaluate the harness buckle style. (RF, FF)
- d. Access to and use of harness adjustment system. (RF, FF)
- e. Number and adjustability of harness slots in shell and pad. (RF, FF)
- f. Visibility & alignment of harness slots. (RF, FF)
- g. Ease of conversion to this mode from all other possible modes of use. (RF, FF, Booster)
- h. Ease of conversion from high back to no back. (Booster)
- i. Ease of adjusting the harness for child's growth. (RF, FF)
- j. Ease of reassembly after cleaning. (RF, FF, Booster)
- k. Ease of adjusting/removing shield. (RF, FF)

- a. Is the restraint assembled & ready to use? (RF, FF, Booster)

This feature was previously located under the “Assembly” category. Since the agency proposed to delete that category, we felt that “Securing the Child” was its next appropriate location. We also proposed to reduce its three levels of criteria to two and to only evaluate this feature once, in the child restraint’s youngest mode of use, in order to reduce grade inflation.

- b. Does harness clip require threading? Is it labeled? (RF, FF)

The agency proposed this new feature to evaluate the harness clip on a restraint. This feature would discourage harness clips that require threading by the user each time the child is buckled into the child restraint and encourage the presence of a graphic or simple text that would provide a reminder of where the harness clip should be positioned on the properly restrained child. We believe that this will increase correct harness clip usage.

c. Evaluate the harness buckle style. (RF, FF)

Some buckle designs, known as “dual entry,” allow the user to insert each side of the buckle independently while “single entry” styles require the user to hold the two shoulder portions of the buckle together and insert them at the same time. The agency believes that there are varying degrees of ease of use with these designs and proposed to modify this feature to evaluate how easy it is to use one type of harness buckle over another.

d. Access to and use of harness adjustment system. (RF, FF)

The agency believes that the ability to tighten the harness system should be accessible regardless of the installation mode. As such, in our proposal, the agency stated it would combine two previously separate features evaluating access to and use of the harness tightening system into one new feature. Additionally, the agency proposed that it would reduce the number of rating criteria for the upgraded feature from three levels to two.

e. Number and adjustability of harness slots in shell and pad. (RF, FF)

The agency proposed to reduce grade inflation surrounding related harness slot criteria by combining them into one. Previously, the agency evaluated whether the

number of harness slots in the child restraint shell and seat pad matched and then separately evaluated how many there were. The agency will now evaluate these concepts as one feature.

f. Visibility & alignment of harness slots. (RF, FF)

The agency proposed applying this feature only to child restraints with re-thread harness systems. Child restraints with “no-thread” harness systems would be rated an “n/a” for this feature since its primary purpose is to help facilitate rethreading.

g. Ease of conversion to this mode from all other possible modes of use. (RF, FF, Booster)

Because the relative complexity of converting a child restraint between its different modes was not fully reflected, the agency proposed a restructure of these features so that they better assess the entire process. In doing so, we recognized that many 3-in-1 and multi-mode child restraints would have difficulty achieving the top rating for this feature. However, we believed, given the relative difficulty of converting child restraints between modes, as well as the potential to introduce gross misuse and misplace critical pieces, that it was important to include such a feature.

h. Ease of conversion from high back to no back. (Booster)

The agency proposed to add this separate feature to assess the difficulty of converting high back boosters to backless boosters.

i. Ease of adjusting the harness for child's growth. (RF, FF)

The agency proposed to strengthen the criteria for this feature to continue encouraging harness adjustment systems that do not require rethreading, are easy to understand, and are simple to use.

- j. Ease of reassembly after cleaning. (RF, FF, Booster)

The agency proposed to clarify the existing criteria used to evaluate this feature. We will assess whether or not the harness requires rethreading, if loose critical parts are generated during disassembly, and whether the cover can be easily removed and replaced. We also proposed a similar feature for boosters, which had not been previously rated using a feature of this type.

- k. Ease of adjusting/removing shield. (RF, FF)

Other than clarifying that the instructions for using these devices should be located on the child restraint itself, the agency did not propose any changes to this feature.

5. Vehicle Installation Features

The agency proposed that the title of this section be reworded to better clarify its scope. We proposed changes to the features in this category primarily to reduce grade inflation. New features were also proposed to reflect improvements made in child restraint designs since the EOU program began, as well as to include more comprehensive LATCH lower attachment assessments. The proposed rating forms contained the following features. Each mode the feature applies to is included in the parentheses:

- a. Ease of routing vehicle belt or flexible lower attachments in this mode. (RF, FF)
- b. Can vehicle belt or LATCH attachments interfere with harness? (RF, FF)
- c. Evaluate the tether adjustment. (FF)
- d. Ease of attaching/removing infant carrier from its base. (RF)

- e. Ease of use of any belt positioning devices. (RF, FF, Booster)
- f. Does the belt positioning device allow slack? Can the belt slip? (Booster)
- g. Evaluate child restraint's angle feedback device and recline capabilities on the carrier and base. (RF)
- h. Do the lower attachments require twisting to remove from vehicle? RF, FF)
- i. Storage for the LATCH system when not in use? (RF, FF)
- j. Indication on the child restraint for where to put the carrier handle? (RF)

- a. Ease of routing vehicle belt or flexible lower attachments in this mode. (RF, FF)

Previously, the EOU program evaluated the ease of routing the seat belt and the flexible lower attachments separately, which was redundant since the two paths are normally one and the same. The agency proposed combining the two related features into one to reduce grade inflation and increase the robustness of the rating system.

- b. Can vehicle belt or LATCH attachments interfere with harness? (RF, FF)

The original EOU program assessed the potential for unwanted interaction between the harness system and the seatbelt or the flexible lower attachments during routing, which was redundant since the two paths are normally one in the same. The agency proposed combining that the two related features into one to reduce grade inflation and increase the robustness of the rating system.

- c. Evaluate the tether adjustment. (FF)

The agency proposed strengthening this feature by decreasing the number of criteria used to rate this feature from three to two. The agency hopes that by continuing

to encourage simple tether adjustment mechanisms, more parents will opt to use them and use them correctly.

d. Ease of attaching/removing infant carrier from its base. (RF)

The agency proposed upgrading this feature so that it better evaluates the ease of attaching and removing an infant carrier from its base. The agency firmly believes there should be no indication that the carrier can appear secured to the base if it is not. In order to discourage designs that allow for this, the agency proposed updating the criteria for this feature.

e. Ease of use of any belt positioning devices. (RF, FF, Booster)

NHTSA proposed strengthening this feature by updating the criteria used to rate them. The agency would also like to encourage manufacturers to locate instructions for use directly on the restraint itself.

f. Does the belt positioning device allow slack? Can the belt slip? (Booster)

The agency proposed additional criterion for this feature after examining different devices in the current market. It was proposed that in addition to the former criteria, these devices should somehow inhibit the shoulder portion of the seat belt from slipping out of the device in order to receive the highest rating.

g. Evaluate child restraint's angle feedback device and recline capabilities on the carrier and base. (RF)

The agency proposed additional criteria to evaluate the presence of a separate feedback device on the child restraint rather than the previously accepted “indicator lines” on labels. We also proposed to encourage devices with built-in recline devices through this feature.

- h. Do the lower attachments require twisting to remove from vehicle? (RF, FF)

After our review of the LATCH system, we believe that that while the ease of installing lower attachments in a vehicle may be similar regardless of type removing them from the vehicle anchorages is not. As a result, we proposed criteria that would encourage lower attachments that retract from the vehicle anchors or that may be removed from the vehicle anchors without having to twist them.

- i. Storage for the LATCH system when not in use? (RF, FF)

Largely in response to child passenger safety technicians (CPSTs) and consumer demand, the agency proposed this new feature that would evaluate seats on the presence of a storage system for the lower attachments and tether (FF only) when they are not being used.

- j. Indication on the child restraint for where to put the carrier handle? (RF)

The agency also proposed a new RF rating feature that would encourage CRS manufacturers to indicate directly on their products where to place the infant carrier handle during driving conditions.

B. Rating System

As stated above, NHTSA proposed several changes to the rating structure of the program as well as the way in which it conveys those ratings to consumers. The agency proposed to reassign many of the feature weightings and made changes to the numerical ranges used to assign both category and overall ratings. In particular, the agency proposed to assign some features the weighting of “1”, which was not the case under the original program. Based on our pilot test results, the changes proposed to the features and criteria will create greater distinction between child restraints.

NHTSA also proposed using its familiar five star rating system to convey child restraint EOU ratings to consumers, with five stars being the highest possible category and overall rating. Since the previous ratings were presented using three levels of evaluation (A, B, C), the agency proposed a redistribution of the category and overall weighted averages by the following five levels:

- “5 stars” = Result ≥ 2.60
- “4 stars” = $2.30 \leq$ Result < 2.60
- “3 stars” = $2.00 \leq$ Result < 2.30
- “2 stars” = $1.70 \leq$ Result < 2.00
- “1 star” = Result < 1.70

The agency believed that displaying EOU ratings in terms of stars rather than letters would be more beneficial for consumers and manufacturers alike. For consumers, the system would be more recognizable. For manufacturers, more potential for effective promotion of their products will likely exist if EOU ratings are displayed using stars.

III. Summary of Comments

The agency received ten comments in response to the notice. They were received from: Safeguard/IMMI (IMMI), Millennium Development Corporation (MDC), American Academy of Pediatrics (AAP), Advocates for Highway and Auto Safety (Advocates), Dorel Juvenile Group (DJG), Graco Children’s Products, Inc. (Graco), The Center for Injury Research and Prevention at the Children’s Hospital of Philadelphia (CHOP), Juvenile Products Manufacturers Association (JPMA), Safe Ride News Publications/SafetyBeltSafe USA (SRN/SBS-USA), and Safe Kids Worldwide (SKW).

All of the commenters supported NHTSA's efforts to upgrade its EOU rating program to provide consumers with more useful information and encourage the introduction of easier-to-use child restraint features. However, every commenter except AAP that spoke to the issue opposed the agency's proposal to use stars as the new method of conveying EOU ratings to consumers.⁶ These commenters felt that the stars would be misconstrued as representing a child restraint's crash protection rating rather than its ease of use. Most of the responses also cautioned that child restraint manufacturers would have a difficult time meeting all of the agency's upgraded labeling criteria, especially in light of upgraded FMVSS 213 labeling.⁷ Commenters voiced concerns that not enough space will be available on many child restraints to add labels that would include NHTSA's upgraded EOU requirements. A number of commenters also oppose a variety of features for cost reasons, stating that higher ratings required more expensive equipment that would raise the prices of many products, affecting the consumer's ability to purchase cost-efficient child restraints.

IV. Discussion and Agency Decision

Because many of the comments were relatively specific, the following discussion organizes commenters' concerns and the resulting agency decision by category and individual feature.

A. General Rating System Concerns

1. Multi-Mode & "Basic" Child Restraints

⁶ All commenters except for SNR/SBS-USA and CHOP addressed this issue.

⁷ See 49 CFR 571.213

MDC⁸ and JPMA⁹ indicated that the upgraded ratings prevent certain types of basic, low cost child restraints from achieving the highest possible rating. DJG¹⁰ specifically mentioned that it could be difficult for multi-mode child restraints to achieve high ratings in all modes of use. Under our proposal, we acknowledged that it would be more difficult for any child restraint to receive the highest rating; however, we firmly believe that they are still achievable for most products. Similarly, in cases where it is difficult for a multi-mode restraint to achieve the highest rating, the agency believes that the upgraded score better reflects the inherent difficulty in using that style of restraint, especially when switching between modes.

2. Timing of Upgraded Program

JPMA, DJG, and Graco¹¹ raised concerns about the timing of the upgraded program and the effects it could have on products that did not receive high ratings. As such, DJG expressed interest in a system in which a product could be evaluated prior to its sale in order to allow the manufacturer to make improvements. We agree that there should be some opportunity for CRS manufacturers to receive feedback on their products prior to sale. In light of this, the agency has made arrangements with our current rating contractor¹² to provide this service.

JPMA and Graco indicated concern over the agency's proposal to begin rating products without allowing the manufacturers time to respond to the criteria, citing consumer and retailer confusion about the drop in ratings. The agency understands these

⁸ NHTSA-2006-25344-0020.1

⁹ NHTSA-2006-25344-0024.1

¹⁰ NHTSA-2006-25344-0025.1

¹¹ NHTSA-2006-25344-0027

¹² To inquire about this service, please contact Alpha Technology Associate, Inc. 6315 Backlick Road, Suite 300 Springfield VA 22150-2632. Phone: (703)866-4158. Fax: (703)866-4159.

concerns but believes it is in the best interest of the consumer to provide the most updated ratings we have available in a timely fashion. As a result and consistent with SKW, SRN/SBS-USA, CHOP, and AAP, NHTSA does not believe that we need to delay implementation of these program enhancements.

3. Clarification of Terms

JPMA asked that NHTSA clarify a number of terms used throughout the rating forms, including “illustrated,” “illustration,” “better,” and “clearly.” NHTSA agrees, and provides the following clarifications in this final notice. “Illustrated” or “illustration” in terms of these ratings means that a clear graphic, diagram, or photograph exists to convey the idea in question. “Better,” generally refers to instances in which the agency clarified language from the previous program. “Clearly” implies that it is highly unlikely for the user to misinterpret any part of the graphic or text.

JPMA also asked that the forms contain more objective criteria and specify requirements in more defined terms. However, no specific examples of where this was needed were cited in their submission. In our proposal, the agency outlined a number of ways we have worked to reduce subjectivity in the EOU ratings. NHTSA has experienced excellent repeatability within the EOU ratings program since its inception¹³. The original EOU ratings program was also externally reviewed by a third party who had similar repeatability findings.¹⁴ Our initial pilot testing, published with our proposal, indicated that the upgraded system is as repeatable as the previous one.

B. Rating Categories and Their Associated Features

¹³ The Original Final Rule (See 67 FR 67448, Docket 2001-10053) detailed that any variations between ratings from team to team were never enough to affect the overall rating. The agency’s experience agrees with this, and in fact has never even seen variations that affect the category ratings.

¹⁴ NHTSA-2006-25344-0017.1

1. Assembly

SKW¹⁵, Advocates¹⁶ and JPMA indicated their support for the removal of the Assembly section and NHTSA's decision to disseminate the features among the remaining categories.

2. Evaluation of Labels

AAP indicated support for the agency's approach to encouraging improved child restraint labels, citing the benefits of "pictorial instructions and labeling specific parts of the restraint according to their correct use."¹⁷ SKW, MDC, and JPMA expressed general concerns about whether child restraints on the current market have the physical space available to fit more labeling. These commenters also raised concerns about the upgraded labeling features leading to "information overload" for consumers. JPMA remarked that this seems to be in contrast with agency efforts to "simplify the information on the product." The agency agrees that poorly written, text-heavy labeling has the potential to overwhelm and confuse the consumer. However, we reviewed current child restraints on the market and believe that the upgraded labeling features we have proposed can be incorporated into existing and future product designs. The agency also does not believe that we are encouraging an extensive amount of new labeling on child restraints and has already seen a number of child restraints on the market that will receive high ratings. The majority of upgrades to the labeling criteria focus on improving the clarity of information that is already encouraged by the program.

JPMA and SKW also suggested that NHTSA consider developing and rating standardized, universal illustrative icons for use across CRS models. Graco similarly

¹⁵ NHTSA-2006-25344-0026

¹⁶ NHTSA-2006-25344-0022.1

¹⁷ NHTSA-2006-25344-0021.1

suggested that the agency work with CRS manufacturers and safety advocates to develop standard “pictograms” for industry to use in their labeling and instructions. The agency agrees that standard icons would be beneficial to the public. Similarly, a number of manufacturers have already developed improved graphics for conveying these ideas. However, there is no industry or consensus amongst the child passenger safety community as to what these standard icons should be or what icon would relay clear and concise information to consumers. Given our desire to implement the other program enhancements immediately, we do not believe that such criteria can be added to the EOU program at this time. We do believe that standardized icons are a worthwhile endeavor and will certainly work with CRS manufacturers and child passenger safety advocates to develop and consumer test such icons.

SKW specifically mentioned that the agency consider color-coding as an option for labels; in this, they feel that using one color code per mode on a child restraint can help reduce misuse. For example, labels and features that pertain to rear-facing use can be one color while labels and features that pertain to forward-facing use can be another. The agency agrees that this practice has the potential for increasing the clarity of labeling information. However, this type of practice would require additional cooperative effort with the child restraint manufacturers and other interested parties to develop agreement on uniformity and messaging. As such, we cannot incorporate this feature in the EOU ratings at this time. We will instead work with manufacturers and other interested parties to develop this concept further.

a. Clear indication of child's size range. (RF, FF, Booster)

JPMA indicated that there was no need for manufacturers to include so-called “best practice” information on CRS labels, stating that “CRS manufacturers may not agree with this recommendation.” Advocates and SKW supported the inclusion of this information in the rating system.

The agency would like to take this opportunity to clarify its intentions. Under the upgraded EOU program, the agency is encouraging that CRS labels and manuals include additional sizing information beyond height and weight that can help parents visually determine whether their child properly fits in the restraint. In our proposal, the agency did suggest commonly used indicators such as “child’s head must be no more than 1 inch from top of CRS” and “top of his or her ears must be below the top of the restraint” or pictograms that indicate this type of information. However, this was not intended to be an all-inclusive list. The agency believes every manufacturer can develop visual cues that can help caregivers assess whether their child is appropriately sized for the restraint in question. As a result, the agency is maintaining this feature as it was proposed in the notice.

b. Are all methods of installation for this mode of use clearly indicated? (RF, FF, Booster)

No specific comments indicating concern over our proposal were received. As a result, our proposed feature is being adopted as the final feature.

c. Are the correct harness slots for this mode indicated? (RF, FF)

SKW suggested color coding for different modes of use and that many manufacturers were already using systems that don’t require removal to adjust. The agency agrees that color coding has potential but in order to be effective, we believe that all CRS

manufacturers would all have to use the same color scheme. Similarly, SKW indicated that color is a significant factor in what type of seat a consumer buys. Given that the agency has no data on which to choose a color and the lack of data to indicate whether or not such a criteria in this feature would make sense, the agency is not adopting this suggestion at this time.

d. Label warning against using a lap belt only. (Booster)

SKW indicated that the agency should focus more on what consumers should do to as opposed to what they should not. We would like to clarify that the rating system also has a separate feature that encourages the proper use. In effect, the agency is merely seeking to reinforce a manufacturer's own instructions against using a lap belt with belt-positioning boosters. There is also a separate feature that encourages a picture of its proper use with a lap and shoulder belt. As a result, our proposed feature is being adopted as the final feature.

e. Seat belt use and routing path clarity. (RF, FF, Booster)

Advocates and AAP indicated their support for the agency's proposal to encourage belt path labels on both sides of the child restraint, while JPMA expressed concern about available labeling space. The agency believes that this feature is important to include because it can provide the user with critical routing information despite his or her point of installation. In addition, we believe that labels of this type can be integrated onto most child restraints and should not create problems with respect to space as some child restraint manufacturers are already doing this. In light of this, the EOU forms will contain this feature and its criteria as proposed.

f. Shows how to prepare and use lower attachments. (RF, FF)

g. Shows how to prepare and use tether. (FF)

CHOP,¹⁸ AAP, SRN/SBS-USA, SKW, and Advocates indicated their support for NHTSA's improved lower attachment and tether labeling criteria as part of our effort to increase both awareness and proper use. SKW indicated that color coding of the tether could encourage more use. The agency is not aware of any data that suggest one way or the other whether or not color coding of the tether would be an effective way to encourage consumers to use the top tether more, especially absent similar coding in the vehicle. As such, we are adopting the proposed feature as the final feature.

h. Durability of labels. (RF, FF, Booster)

SKW and SRN/SBS-USA did not disagree with the agency's proposal but suggested that we should also improve our evaluation of the label criteria by also evaluating whether a label will "stand up to normal usage" and under different climate conditions. No suggestions were provided to the agency as to why the current evaluation is deficient or exactly what improvements could be made or how to otherwise evaluate them. As a result, our proposed feature is being adopted as the final feature.

3. Evaluation of Instructions

JPMA, SKW, and MDC indicated their concern that the agency is trying to reduce the consumer's responsibility to read a child restraint's accompanying instructions by relying too heavily on the information presented on CRS labels. The agency would like to stress that this is most certainly not our intention. While we feel that our proposed labeling upgrades may reduce the need for consumers to consult the manual for some daily restraint use, they do not serve to replace the need to read the accompanying manual. We also agree with SKW that CRS manufacturers need to better prioritize the information in

¹⁸NHTSA-2006-25344-0023

the written instructions; however, we do not believe that it is a feature that can be rated easily under the proposed program. This issue requires further discussion with the CRS manufacturers to see how the readability of written instructions can be improved.

a. Owner's manual easy to find? (RF, FF, Booster)

JPMA and SKW supported the inclusion of this feature as a part of NHTSA's EOU program. They also mentioned that this feature should be of primary concern where the instruction manual is concerned and that the following feature pertaining to its storage system should be secondary. The agency agrees, and the proposed rating system structured these two features accordingly; this feature has a higher weighting factor than the following one does. As a result, the enhanced program will contain this feature as proposed.

b. Evaluate the manual storage system access in this mode. (RF, FF, Booster)

MDC and JPMA indicated concern with the agency's inclusion of an upgraded manual storage system feature in the EOU rating. Each stated that particular styles of child restraints that would be difficult to redesign to achieve the highest rating. While the agency recognizes that certain styles of CRS have limited locations available for these devices, we have seen systems across restraint styles that can still receive the highest rating. We encourage manufacturers to develop innovative solutions to the challenge and note that consumers, in our experience, have indicated this is a feature they desire. The upgraded EOU program will contain this feature and its criteria as proposed.

c. Clear indication of child's size range. (RF, FF, Booster)

No specific comments indicating concern over our proposal were received. As a result, our proposed feature is being adopted as the final feature.

- d. Are all methods of installation for this mode of use clearly indicated? (RF, FF, Booster)

No specific comments indicating concern over our proposal were received. As a result, our proposed feature is being adopted as the final feature.

- e. Air bag/rear seat warning? (RF, FF, Booster)

No specific comments indicating concern over our proposal were received, though SKW asked for clarification on whether the two concepts could be combined into one idea to reduce labeling. The agency would like to clarify that this feature only applies to the instruction manual; therefore, the labeling space considerations expressed by SKW are not an issue. As a result, our proposed feature is being adopted as the final feature.

- f. Instructions for routing seat belt. (RF, FF, Booster)

The agency would like to clarify that this feature only applies to the instruction manual; therefore the labeling space considerations mentioned by SKW are not a concern. AAP supported the agency's addition of criteria requiring child restraint manuals to include information about various types of seat belts, latch plates, and seat belt retractor systems. However, AAP cautioned that the agency should pay close attention to the clarity of language as the amount of information pertaining to these devices may be extensive. Advocates suggested NHTSA evaluate this information along with belt lock-off devices and their instructions for use. JPMA opposed the inclusion of this information as part of an EOU rating and stated that the information provided by child seat manufacturers on these items should be "generic in nature, sending the caregiver to the vehicle owner manual for specifics."

The agency agrees that there is a definite need for consumers to consult their vehicle owner's manuals when searching for specifics on their vehicle's seat belts. The agency is not seeking to transfer the responsibility for defining vehicle equipment instructions to child restraint manufacturers. We do believe, however, that child restraint manufacturers have a responsibility to define seat belt, latch plate, and retractor types that may be used correctly with their products and which may not. As a result, NHTSA will be maintaining this feature as it was proposed. Similarly, in light of the AAP and SKW concerns, the agency would like to work with the manufacturers and others so that the clarity, content, and type of information can be consistent from child restraint to child restraint. Finally, as the agency has a separate feature for rating belt lock-offs, there is no need to include the evaluation of these devices within this feature as well.

g. Shows how to prepare & use lower attachments and tether. (RF, FF)

CHOP, AAP, SRN/SBS-USA, and Advocates indicated support for NHTSA's improved lower attachment and tether requirements as part of our efforts to increase both awareness and proper use. SRN/SBS-USA also suggested that NHTSA encourage an educational message about the benefits of tethers within the instruction manuals to reinforce their importance. The agency recognizes that this may be helpful but the agency is working with CRS manufacturers, child safety advocates, and vehicle manufacturers in the development of a new message and icon (that will be released shortly) to help promote the LATCH system which will partly address the tether-use issue. We also believe that CRS manufacturers will use this new messaging in their manual design as well as their own intuitive ideas to explore additional ways to promote

tether use with their products. As such, we will be adopting this feature into the rating system as originally proposed.

h. Information in written instructions and on labels match? (RF, FF, Booster)

No specific comments were received. As a result, our proposed feature is being adopted as the final feature.

4. Securing the Child

The AAP and SKW indicated their support for the agency's proposal to include a variety of new features in this category, including the new harness clip criteria, new harness buckle criteria, and "no-thread" harness systems.

a. Is the restraint assembled & ready to use? (RF, FF, Booster)

Advocates and SKW indicated their support for the agency in its decision to retain this feature as a part of its EOU ratings program.

b. Does harness clip require threading? Is it labeled? (RF, FF)

JPMA indicated concern over the agency's proposal to encourage that harness clips are labeled with instructions for their correct use because of space concerns about the devices. AAP and SKW supported the agency's addition of this feature to the program because of its potential safety benefits. The agency agrees with AAP and SKW. We believe that these potential safety benefits are worth encouraging. In addition, we have seen a variety of low-cost, space-conscious solutions that may be used to achieve the highest rating. As a result, the upgraded forms will contain this feature and its criteria as proposed.

c. Evaluate the harness buckle style. (RF, FF)

MDC and SKW indicated concern over the agency's decision to include a feature to evaluate harness buckle style. MDC noted that the single-entry, or "puzzle buckle," has a safety advantage over other styles as they cannot be buckled without inserting all required pieces. SKW indicated that buckle style should be up to the consumer. The agency agrees with both of these commenters. The intent of this feature is merely to capture the distinction that dual entry buckles, which allow for a section of the harness to be buckled without the other, are relatively easier to use than "puzzle buckles." Consumers have indicated to us the desire for the rating system to capture that difference. Similarly, as we indicated in our proposal, there are some "puzzle buckle" designs that will also score well. Finally, no evidence was provided by MDC to support the real-world advantage of "puzzle buckles." As a result, the enhanced EOU forms will contain this feature and its criteria as they were proposed.

d. Access to and use of harness adjustment system. (RF, FF)

No specific comments indicating concern over our proposal was received. SKW did indicate that perhaps AAP, JPMA, SRN/SBS-USA, and others should get together to discuss and coordinate on a consolidated consumer guide which discussed different harness designs. If such a group is formed, we would like to participate. Our proposed feature is being adopted as the final feature.

e. Number and adjustability of harness slots in shell and pad. (RF, FF)

No specific comments indicating concern over our proposal were received. As a result, our proposed feature is being adopted as the final feature.

f. Visibility & alignment of harness slots. (RF, FF)

JPMA indicated concern that the agency was rating harness slot visibility in the presence of additional padding such as infant inserts and head pillows¹⁹. The agency notes that as optional accessories not required for proper use, these items are not required to come attached to the child restraint in order to achieve the highest rating for the assembly-related EOU feature. The manufacturer has the option of leaving these items separate from the CRS in an effort to improve their rating for this feature; this is similar to how most child restraint manufacturers package other optional accessories such as cup holders.

JPMA indicated that the harness slot visibility encouraged by this feature could have the unintended effect of creating overly wide harness slots in the child restraint market. We would like to clarify that the upgraded feature is merely just a combination of the two previous features. As such, there is no substantial change to this feature. The agency does not anticipate that the upgraded criteria will encourage harness slots of any different size than the current EOU program seeks to encourage.

JPMA also proposed that the agency only require that “any foam between the pad and the molded seat should be in line; however, the sewn pad...should be judged acceptable provided the opening in the pad allows easy access to the slots in the foam and the seat back.” The agency believes that requiring all three components (shell, foam, and pad) to be aligned is ideal from an EOU perspective. As such, the agency has decided that the upgraded forms will contain the feature and criteria as it was previously proposed.

g. Ease of conversion to this mode from all other possible modes of use. (RF, FF, Booster)

¹⁹ The agency would like to clarify that the alignment portion of this feature is assessed independently of additional accessories such as body pillows and infant head inserts.

No specific comments indicating concern over our proposal were received. SKW questioned whether we were encouraging another label. While FMVSS No. 213 does not require a label of this type, the agency has seen manufacturers electing to include information of this type on their products and would like to encourage others to do so. As long as the information is clear and concise, the agency has no opinion on whether it is included as part of another related label and we are finalizing this proposed feature.

h. Ease of conversion from high back to no back. (Booster)

No specific comments were received. As a result, our proposed feature is being adopted as the final feature.

i. Ease of adjusting the harness for child's growth. (RF, FF)

Extensive comments were received on the agency's proposal to upgrade the criteria for this feature. AAP indicated support for the agency's proposal to encourage no-thread harness systems. SKW, JPMA and MDC indicated concern over the upgraded feature for a variety of reasons. While JPMA acknowledged that a "no thread" harness offers ease of use benefits for consumers, they also indicated their belief that "simple, easy to rethread harness design is still a very viable design." However, they, along with SKW, cautioned the agency that the higher costs associated with these systems may have the unintended effect of limiting options for consumers who must include cost as a factor in their child restraint purchasing decisions. The agency does not disagree with these statements about rethreadable harnesses. The agency expects that the majority of harnessed child restraints in the near future will continue to utilize a rethreadable harness system design because of a variety of factors, including cost.

However, the agency also believes that the no-thread systems can be an important device in helping decrease child restraint misuse. Rethreading a harness system can be a complicated task, introducing a variety of gross misuses (such as misplaced or misrouted hardware and straps) that would otherwise be avoided if replaced with a no-thread system. In addition, revising the previous harness adjustment criteria for this feature has the added benefit of further improving the robustness of the system. Previously, raters were asked to rate rethreadable harness designs as either a “B” or a “C” by distinguishing whether the slots were “large” or “small.” Under the proposed criteria, raters no longer have to distinguish between relative slot sizes since all rethreadable systems will be assigned a “C” for that feature. In light of these reasons, the upgraded rating forms will contain this feature and its criteria as we proposed.

j. Ease of reassembly after cleaning. (RF, FF, Booster)

No specific comments indicating concern over our proposal were received. As a result, our proposed feature is being adopted as the final feature.

k. Ease of adjusting/removing shield. (RF, FF)

No specific comments indicating concern over our proposal were received. As a result, our proposed feature is being adopted as the final feature.

5. Vehicle Installation Features

a. Ease of routing vehicle belt or flexible lower attachments in this mode. (RF, FF)

No specific comments were received. As a result, our proposed feature is being adopted as the final feature.

b. Can vehicle belt or LATCH attachments interfere with harness? (RF, FF)

No specific comments indicating concern over our proposal were received. However, SKW did question whether this was more of a convenience issue rather than a safety issue. We believe that a seatbelt or a lower attachment strap routed through a harness can pose a safety issue if that misrouting prevents a secure fit from being achieved. Seatbelt or flexible lower attachment straps tangled with a harness can prevent a secure fit to the vehicle and child. As such, our proposed feature is being adopted as the final feature.

c. Evaluate the tether adjustment. (FF)

No specific comments indicating concern over our proposal were received. However, SKW indicated this feature should also highlight those products that encourage their use. We agree and think that our messaging efforts along with some of the upgraded features we have discussed will help to encourage their use. In addition, this concept is already reflected in some more appropriate features, such as the increased encouragement of tether labeling on the child restraint and in the manual. As a result, the agency will not be incorporating this concept into this specific feature and will adopt this feature as proposed.

d. Ease of attaching/removing infant carrier from its base. (RF)

No specific comments indicating concern over our proposal were received. As a result, our proposed feature is being adopted as the final feature.

e. Ease of use of any belt positioning devices. (RF, FF, Booster)

Comments made by Advocates, JPMA, and MDC suggested a need for the agency to further clarify this feature. We have never evaluated, nor do we intend to evaluate, the ease of using a locking clip through EOU as these devices are not specific to the design of the child restraint in question. The agency recognizes the need for these devices in the

marketplace and does not want to discourage manufacturers from providing them to consumers.

For ease of discussion, the agency has used the term “belt positioning” to generically represent any belt positioning device found on (integral to) a child restraint. These often vary by the type of restraint. For RF and FF modes, this feature has traditionally rated belt lock-off devices that may be found on the restraint. For booster modes, this feature evaluates the shoulder belt positioning guide.

AAP and SKW indicated support for NHTSA’s decision to upgrade the belt positioning feature. MDC and JPMA, on the other hand, indicated concern over NHTSA’s proposal to upgrade this feature. JPMA stated that rating the “ease of use” of these devices is in itself “vague and subjective” which makes it “difficult for CRS manufacturers to use in evaluating their products.” Both MDC and JPMA indicated their belief that including the feature in an EOU rating would discourage manufacturers from installing the devices. Under both the original and upgraded rating programs, only those child restraints with these devices are subject to rating under this feature; those that do not have the devices are not rated under this feature. This is consistent with NHTSA’s practice for rating other relatively uncommon devices like overhead shields. Given that a similar belt-positioning feature existed on the previous forms, the agency does not feel its inclusion in the upgraded system will prevent manufacturers from installing these devices. The agency also maintains its position that providing instructions for using these devices directly on the child restraint is ideal from a usability standpoint. Therefore, the EOU forms will contain this feature and its criteria as proposed in the previous Notice.

f. Does the belt positioning device allow slack? Can the belt slip? (Booster)

No specific comments were received. As a result, our proposed feature is being adopted as the final feature.

g. Evaluate child restraint's angle feedback device and recline capabilities on the carrier and base. (RF)

In response to JPMA, the agency would like to clarify that “three levels of recline” is an equivalent term to “three adjustment levels.” The agency would also like clarify the requirement for separate feedback devices as it pertains to infant seats. The feature does not require that one device is installed on the base and another is installed on the carrier. The CRS manufacturer has the option of installing the device on either the base or the carrier; the agency believes however, that if the carrier may be installed alone, that device should be located on the carrier.²⁰

AAP and SKW indicated support for the agency’s upgraded feature encouraging separate recline feedback devices on child restraints that may be used rear-facing. AAP further added that the agency should encourage CRS manufacturers to include information to assist caregivers in their proper use and importance. AAP also suggested that the agency consider encouraging manufacturers to provide additional guidance in the instructions if the written restraint’s built-in device cannot achieve the proper recline angle. JPMA indicated concern over the inclusion of a feature encouraging a separate feedback device on RF child restraints, citing their additional cost as a drawback as well as their limitations in use.²¹

The agency believes that the ability of these devices to provide feedback to the user makes them preferred from an ease of use standpoint. The agency also believes that

²¹ JPMA noted that the “indicator line” style of recline feedback can be used regardless of the surface a vehicle is parked on, while feedback devices must be used on level ground.

“indicator lines” printed on child restraint labels have an increased tendency to go unnoticed and perhaps unused when compared to separate feedback devices. The agency is aware that some child restraints with multiple recline levels may still have difficulty achieving the proper recline angle in certain vehicles; however we agree with AAP that this information is useful for consumers. Though we have not included a feature to evaluate this under the upgraded rating system, it has been the agency’s experience that the vast majority of manufacturers already include information of this type in their instruction manuals. The agency hopes that by encouraging appropriate child restraints to come with built-in recline mechanisms and feedback devices, we can also help reduce the need for consumers to install child restraints with accessories such as pool noodles or rolled towels. As a result, the upgraded forms will contain this feature and its criteria as proposed.

h. Do the lower attachments require twisting to remove from vehicle? (RF, FF)

AAP and SKW indicated support for NHTSA’s efforts to rate lower attachments. AAP also mentioned a preference that agency require “push-on” connectors. SKW indicated their belief that the criteria might be too restrictive and prohibit future designs. JPMA opposes the agency’s proposal to rate lower attachment style under the EOU rating program and recommend that we instead increase education efforts about the system. They commented that the removal of lower attachments from the vehicle is an “interface issue between the CRS and the vehicle” and that vehicle characteristics play a part in the operation as well. NHTSA agrees that the ease of attaching and removing lower attachments from vehicle anchors is partly dependent on the vehicle and, as JPMA suggests, some interface between the two. We do not believe that our criteria are too

restrictive and feel they are sufficiently broad enough to capture current designs as well as allow for future designs. Similarly, the agency will continually update the criteria, as needed, to capture new designs or new information as it becomes available in the marketplace.

It has been NHTSA's experience, as well as Transport Canada's,²² that there are EOU benefits specific to lower attachment type as well. CHOP indicated their support for any EOU feature that encourages the manufacturer to indicate lower anchor and tether orientation information on the attachments themselves. The agency agrees this would be useful and could be achieved by having common symbols. However, the agency could not develop objective criteria within the time period of the assessment to rate a feature of this type; as a result, the upgraded forms will assess this feature only to the extent that the agency proposed in the Notice.

i. Storage for the LATCH system when not in use? (RF, FF)

No specific comments were received. As a result, our proposed feature is being adopted as the final feature.

j. Indication on the child restraint for where to put the carrier handle? (RF)

No specific comments were received. As a result, our proposed feature is being adopted as the final feature.

C. Rating System

SKW, IMMI and SRN/SBS-USA supported the agency's decision to present EOU ratings on five levels of evaluation rather than three.²³ Advocates believed that creating five rating levels, regardless of whether stars or an alternative icon is used, is

²² NHTSA-2007-26833-0024

²³ NHTSA-2006-25344-0019.1

“counterproductive” as “the agency has already made a case for deleting the middle “B” category for certain...features to make the resulting ratings more separate and distinct.” The agency would like to clarify that its primary intent in removing most of the “B” feature ratings was to strengthen the importance of certain individual features by rating on their presence (“A”) or their absence (“C”). This has the added benefit of increasing the robustness of the ratings and, as the Advocates stated, can make the ratings more separate and distinct. However, we believe that the overall scores will likely be more varied than they have been in previous years simply because of the program’s revised and more comprehensive content. The agency does not feel that the decision to reduce some features’ criteria from three to two prohibits separating the ratings into five levels.

MDC proposed that the agency develop an alternative method of restraints that takes into account the higher costs associated with some features. The EOU ratings have no precedence for weighting results based on cost; as there is no direct correlation between price and rating we do not believe that lower cost seats are somehow prohibited from achieving top ratings. However, we will monitor the costs of child restraints and are interested in any information regarding whether the price of child restraints increase due to manufacturers’ placing more higher-cost features on the restraints to achieve a higher EOU rating and what that impact will be on consumers with lower economic means.

Advocates suggested that the agency “grade on the curve,” or essentially rank products against each other. We believe that the design of the EOU program and the rating of features provide a more meaningful way for consumers to compare child seats than a ranking system. A ranking system, as proposed by the Advocates, would imply a

level of certainty that the agency does not believe exists for the ease of use program. As such, the agency does not see a need to incorporate this concept into the rating scheme.

SRN/SBS-USA suggested that the agency provide more information on its website about the features each child restraint has. They noted that this information could be used for comparison purposes across similar seats as well as provide a way for NHTSA to highlight features that may convey benefits in a crash. While NHTSA's EOU rating system is somewhat based on the presence of certain features, we also often assess the labeling, instructions, and ease of actually using such features. Merely highlighting the presence or absence of a feature without assessing its Ease of Use, we believe, would not be a robust enough criteria for most features. Similarly, it is not clear to the agency what "crash" features above those already required by the FMVSS No. 213 standard would warrant inclusion in the program. We are aware of several manufacturers beginning to market products as side impact tested but the agency has not fully evaluated these products to determine if they would indeed result in safety benefits in the real world. As such, it would be premature to further encourage these types of "features" until they can be assessed as to their actual benefit. As such, we will not be incorporating this concept into the presentation of EOU ratings. However, we do note that we are upgrading the presentation of the information on the EOU website and will complete that work later this year.

SRN/SBS-USA suggested that the agency consider "failing" child restraints that do not have certain styles of features. In addition, they suggested that "extra points" be awarded for the presence of certain other features. The agency believes that the structure of the current rating system incorporates to some extent both of these concepts. While

we do not “fail” or award “extra points” to a restraint based on the presence or absence of feature, we do evaluate and weight the features based on objective criteria which do take into account the presence of a feature. As such, we do not believe that it is necessary to include additional “points” that would modify a child restraints score. It should also be noted that all of the features suggested by SRN/SBS-USA as items the agency should use for “failing” and awarding “extra points” are being incorporated into the upgraded rating system.

AAP and SKW indicated support for NHTSA’s intention to use stars as “they are highly recognizable and understandable.” IMMI, MDC, Advocates, DJG, Graco and JPMA indicated concern over the agency’s proposal to use a 5-star system to convey the child restraint ease of use ratings to consumers. These commenters indicated their belief that the use of stars to present EOU ratings could be misleading to consumers who may associate stars exclusively with NHTSA’s vehicle crashworthiness ratings. The five commenters indicated that consumers would mistakenly believe they were child restraint safety ratings rather than an evaluation of how easy the child seat was to use. JPMA submitted a variety of alternative icons they believed would better serve to convey these ratings to the public. Advocates suggested that the agency maintain its current letter grading system for presenting the upgraded EOU ratings to consumers. They noted that the agency could add “D” and “F” to the previous “A”, “B”, “C” letter grading scheme in its effort to divide the ratings into five levels. In addition, Advocates felt it would be beneficial to include an “F” criteria to rate the worst features. The agency cautions that this suggestion is somewhat arbitrary. The concepts contained in the features and their rating criteria are designed to encompass the entire spectrum of products in the market.

In many cases it is difficult to develop more than three levels of objective criteria for many criteria, given current product designs. Similarly, we do not believe there are enough levels to include “F” criteria throughout the forms.

In addition, none of the commenters provided any evidence that consumers would make these purported assumptions about the use of stars, and subsequent consumer research conducted by the agency supports our proposal. In order to determine whether star ratings could be used to successfully present EOU child restraint ratings to the public, the agency conducted mall intercepts of consumers in two U.S. cities.²⁴ The data collected from this study, while not statistically projectable to the entire U.S. market, allowed the agency to gain valuable insight to consumer perspective. The study found that an overwhelming majority of respondents preferred stars (48%) or found them equally as effective (30%) as presenting the ratings in letter form. Many indicated their preference for the system as being, among other things, “more familiar,” “visually easier to compare,” and “more user-friendly.” In addition, only two respondents out of the two hundred participants surveyed felt the agency’s use of stars for both vehicle crashworthiness ratings and child restraint ease of use ratings could be misconstrued. In light of this study, and lack of data to the contrary, the agency is going forward with its proposal to use a 5-star rating system to present EOU ratings to consumers.

Advocates also commented that the method used to calculate the ratings was “elaborate and overly complicated” and that the division of “star scores” is “arbitrary.” The agency would like to restate that no changes were made to the method used to calculate the weighted category or overall averages from the original EOU program, which was adopted from a similar program created by the Insurance Corporation of

²⁴ See Docket NHTSA-2006-25344

British Columbia (ICBC). In addition, the agency does not believe that the star rating divisions are arbitrary. Our reasoning for establishing both the category and overall star ratings was outlined extensively in the November 23, 2007 notice.²⁵ As such, we are implementing the star rating break points and calculation methodology as outlined in that document.

D. Vehicle Rating System

SKW, JPMA, and SRN/SBS-USA indicated support for NHTSA's efforts to develop a rating based on vehicle features that facilitate easier child restraint installation. The agency agrees and looks forward to working with JPMA, vehicle manufacturers, and others to develop this program.

E. Cost and Retail Concerns

SKW, MDC, JPMA, and Graco indicated their belief that there is a potential for features encouraged under the new rating system to add costs to child restraints. They also expressed concern about potentially low ratings under the upgraded system and how that would affect retail demands for only the highest rated child restraints. With decreasing demands for certain products, MDC, JPMA, and Graco also believe it will affect the ability for CRS manufacturers to offer some basic, cost-effective child restraints that offer the same dynamic protection as many of the higher-priced models. All indicated their belief that this could have negative consequences with respect to overall child passenger safety efforts if fewer consumers are able to afford restraints. In addition, they believed it is contrary to the agency's goal of protecting every child.

The agency is aware that some of the features included in the upgrade have the potential to add cost to child restraints. However, the agency believes there are a number

²⁵ NHTSA-2006-25344-0016

of no- and low-cost solutions (further labeling and instruction manual improvements) that can be used in an effort to fulfill some of the upgraded criteria and improve product ratings. The agency received similar concerns about decreasing product demands after proposing the original EOU program as well, and its experience has not indicated a reduction in the number of products available to consumers. In fact, nearly each year the number of products available for evaluation by the agency increases.

AAP commented that the move to a star-based rating system allows the manufacturer further opportunity to promote products over the former letter-based ratings system, and the agency concurs with this. Given the results of recent consumer intercepts, we believe that the decision to use stars to relate EOU ratings offers manufacturers renewed marketing potential for their products to both consumers and retailers, especially in more competitive market sectors.

F. Other

AAP suggested that the agency include criteria that would encourage manufacturers to design products that may “be used for long periods in several modes of use.” While the agency agrees that restraints designed to accommodate taller, older, and heavier children have obvious safety implications, we find it difficult to develop a case for including a feature of this type in an EOU rating.

AAP also urged the agency to increase its educational efforts surrounding the program, especially in light of the agency’s proposal to move to a 5-star rating system. They noted that “many families simply are not aware that the Ease of Use System exists, and so do not benefit from the information it provides.” NHTSA is planning to increase its educational efforts with respect to the EOU program and believes that our proposed

upgrades offer an opportunity to improve its popularity. We will continue working with organizations such as JPMA, AAP, and a variety of retailers in order to accomplish this. The agency's other efforts, such as our recent work to develop a LATCH educational message,²⁶ also serve as channels for increasing consumer awareness of a variety of child passenger safety issues.

SRN/SBS-USA suggested the agency also "rate highly any product which recommends for use of tether above 40 lbs." While it is conceivable that there would be benefits for a child to use a top-tether above 40 lbs, even if a child restraint's tether attachment were to suggest its use over 40 lbs, the user would have to also consult his or her vehicle owner's manual to ascertain whether the vehicle tether anchor is rated higher than 40 lbs. Therefore, giving a CRS credit for a feature that might not provide any use to the consumer in his or her vehicle could be considered misleading. Similarly, a working group of CRS and vehicle manufacturers are looking at this and other structural features related to LATCH. We believe that this issue would be better addressed in the context of that work as opposed to the EOU rating program. As a result, the agency does not believe this is an appropriate feature to include in the upgraded rating system at this time.

SRN/SBS-USA suggested that while boosters are not required to come LATCH-equipped, the agency include a feature in its EOU ratings to evaluate those that allow for the use of this equipment with these restraints. Lower attachments and tethers can help to retain a booster in the vehicle if the restraint is unoccupied; SRN/SBS-USA also noted that this can help stabilize the restraint in the vehicle when children are seating themselves. The agency does not believe that we have enough information about this

²⁶NHTSA-2007-28934-0001

issue to include it in the upgraded EOU rating system. We believe that the encouragement of LATCH hardware on boosters warrant further analysis and consideration. Until it is explored further, especially to determine if there are any unintended consequences from using the LATCH system in this manner, the agency will not be incorporating this feature into the EOU ratings.

Graco suggested that the agency take into account the improved usability of child restraints that voluntarily provide bi-lingual (English/Spanish) product labels. They also noted that the upgraded rating system may force them to remove Spanish-language labels in order to meet the new requirements. At this time the agency will not examine labeling content presented in other languages. Although Spanish is the most common second language seen on child restraints, the agency comes across labels in other languages as well. The agency would like to clarify that while the content will not be evaluated at this time, as long as the graphics, coloring, and overall feel of the Spanish-language labeling is a “mirror image” of the English labels found on the opposite side, the child restraint will receive credit for related features. For example, the upgraded ratings contain a feature that encourages the belt path to be labeled on both sides of the restraint. One side of the restraint may contain Spanish text and the other may contain English text. As long as the graphics and coloring for the label are visually analogous, the child restraint would receive the highest rating for that feature. It has been the agency’s experience that this is the approach CRS manufacturers normally take when labeling their products using two languages.

CHOP suggested that the agency seek to include a feature that encourages manufacturers to install dual adjusters on flexible lower attachment straps in order to

reduce opportunities for misuse from loose installations. The agency explored opportunities to include this concept as a feature in the proposed ratings, but found it difficult to develop enough objective criteria to distinguish between current products on the market. The agency expects that the improved labeling criteria and the emphasis on improved conversion instructions between modes of use can help to alleviate this problem in the absence of an additional feature. CHOP also commented on their preference for rigid LATCH systems, and urged the agency to reconsider requiring these systems. NHTSA has not changed its position with regards to requiring these systems. However, we note that a number of upgraded features were included to continue providing incentive for manufacturers who wish to incorporate these systems in their products.

V. Conclusion

NHTSA has decided to move forward with the upgraded Ease of Use child restraint rating program as presented in this notice of final decision. The agency believes that improvements made to the program will not only recognize easier to install features, specifically for the LATCH hardware, but they will also provide motivation for manufacturers to continue to design child restraints with features that are intuitive and easier to use. The agency believes this approach provides incentives to manufacturers while at the same time providing consumers with useful information. In addition, this upgrade allows us to recognize design features and products that have entered the market since the program was developed. Furthermore, our changes to the numerical ranges that determine the ratings will make the highest scores harder to achieve, which we believe, will spur product improvements and innovations that will enhance ease of use and

ultimately the safety of child passengers. In addition to making high ratings harder to achieve, the agency is also changing the way it conveys these ratings to the public. EOU ratings will now be presented to consumers using NHTSA's familiar star rating system, which contains five levels. The agency believes that the additional levels of differentiation will further aid consumers in their purchasing decisions and add to the robustness of the rating system.

We believe that this consumer information program must undergo the changes outlined in this document to continue encouraging child restraint manufacturers to develop and maintain features that make it easier for consumers to use and install child restraints. The agency believes that the presence of easier to use features on child restraints leads to an increase in their correct use, which thereby results in increased safety for child passengers. NHTSA believes that these changes should be implemented as soon as possible and as such, these program enhancements are proposed for inclusion in the 2008 ratings program.

Appendix A: Ease of Use Rating Forms

NHTSA Ease of Use Rating Form - 2008 <i>Infant Only Restraints, Convertible RF Mode, or 3-in-1 RF Mode</i>							
Date of Evaluation: _____				Evaluated by: _____			
Manufacturer: _____			▼	Make & Model: _____			
Model #: _____				Date of Manufacture: _____			
Base Model # if Different: _____				Date of Manufacture on Base (if different): _____			
Style: <input type="checkbox"/> Infant Only (RF) <input type="checkbox"/> Convertible (RF/FF) <input type="checkbox"/> 3-in-1 (RF, FF, & Booster) <input type="checkbox"/> Car Bed							
CRS has separate base: <input type="checkbox"/> Yes <input type="checkbox"/> No							
Harness Style: <input type="checkbox"/> 5-point <input type="checkbox"/> "V" or 3-pt. <input type="checkbox"/> OH Shield							
Seat Characteristics & Measurements							
Appropriate child size range for this mode according to manual:						Date on manual: _____	
RF Size Ranges	Weight				Height		
	Minimum		Maximum		Minimum		Maximum
	kg	lb	kg	lb	cm	in	cm

NHTSA Ease of Use Rating Form - 2008				
Infant Only Restraints, Convertible RF Mode, or 3-in-1 RF Mode				
Make & Model _____ 0 _____		Model # _____ 0 _____		
Evaluation of Labels				
	A	B	C	Notes
Clear indication of child's size range for this mode. Is there additional information on the CRS about how the child should fit in it?	Separate, clear, complete height and weight information directly next to the illustration. Additional size information included as a picture. <input type="checkbox"/>	Separate, clear, complete height and weight information directly next to the illustration. Additional size information included as short, simple text. <input type="checkbox"/>	Incomplete text as indicated, text independent of illustration, or no illustration, and/or no mention of additional sizing information. <input type="checkbox"/>	
All methods of installing the seat in this mode are clearly indicated, including with lower anchors, lap belt only, and lap/shoulder belt, with and without the base as necessary.	Illustrated clearly with CR in vehicle seat. No need to read text although illustrations should be labeled for each method of installation. <input type="checkbox"/>		Method missing, partially illustrated, or no illustrations at all. CRS may be shown without any vehicle seat at all. Must read text. <input type="checkbox"/>	
Does the CRS indicate the correct harness slot height for this mode? Is there additional information on the CRS about how the shoulder straps should fit for this mode?	Yes, there is a graphic or contrasting text indicating the correct harness slots to use for this mode. Additional harness adjustment information is conveyed using a picture. <input type="checkbox"/>	Yes, there is text indicating the correct harness slots to use for this mode but they may be the same color as the shell. Additional harness adjustment information is included but may be text only. <input type="checkbox"/>	No indication of correct slots to use for this mode (for applicable multi-mode CRS) and/or no mention of additional sizing information. <input type="checkbox"/>	
Vehicle belt & flexible lower anchor path labeling and routing.	Illustrated clearly with no need to read text in order to route seatbelts. Contrasting label is directly next to the corresponding belt path on both sides of CRS. <input type="checkbox"/>	Belt routing path label is only contrasting on one side but would otherwise fulfill "A" criteria. <input type="checkbox"/>	Belt routing label not next to corresponding path. Belt routing path is only labeled on one side. Routing requires reading text or is otherwise not obvious from illustration. May also be obscured by seat pad. <input type="checkbox"/>	
Shows how to prepare and use lower attachments.	Clear illustrations show how to route and attach lower anchors to vehicle for using the CRS in this mode. One or two words per idea are OK for clarification. <input type="checkbox"/>	Illustrations plus written instructions provided. Need to read text to perform entire operation. <input type="checkbox"/>	Text-heavy instructions only provided or no instructions at all provided. Partial instructions; some steps missing. <input type="checkbox"/>	
Durability of labels.	Sticky label(s) or other method of technology label not peeling. <input type="checkbox"/>		Sticky label(s) are already peeling when restraint removed from box. <input type="checkbox"/>	

NHTSA Ease of Use Rating Form - 2008				
Infant Only Restraints, Convertible RF Mode, or 3-in-1 RF Mode				
Make & Model _____ 0 _____		Model # _____ 0 _____		
Evaluation of Instructions				
	A	B	C	Notes
Is the owner's manual easy to find when the CRS is taken out of the box?	Attached to the child restraint in a clearly visible location. <input type="checkbox"/>		Attached to the child restraint in a hard-to-find location or not attached to the seat at all. <input type="checkbox"/>	
Evaluate the storage system for accessing the manual in this mode.	It is obvious and easy to use. The manual can be accessed when the CRS is installed in this mode of use. <input type="checkbox"/>	It is obvious and easy to use, but the manual cannot be accessed when the CRS is installed in this mode of use. <input type="checkbox"/>	The designated storage system isn't obvious or it is difficult to use regardless of mode of use. Can easily fall off carrier if removed. <input type="checkbox"/>	
Clear indication of child's size range. Is there additional information on the CRS about how the child should fit?	Separate, clear, complete height and weight information directly next to the illustration. Additional size information included alongside a picture. <input type="checkbox"/>	Separate, clear, complete height and weight information directly next to the illustration. Additional size information included as short, simple text. <input type="checkbox"/>	Incomplete text as indicated, text independent of illustration, or no illustration, and/or no mention of additional sizing information. <input type="checkbox"/>	
All methods of installing the seat in this mode are clearly indicated, including with lower anchors, lap belt only, and lap/shoulder belt, with and without the base as necessary.	Illustrated clearly with CR in vehicle seat. No need to read text although illustrations should be labeled for each method of installation. <input type="checkbox"/>		Method missing, partially illustrated, or no illustrations at all. CRS may be shown without a vehicle seat. <input type="checkbox"/>	
Warning to avoid placing a rear-facing child restraint in front of an active airbag .	Separate from unrelated warnings and illustrated; has its own page or other very clear demarcation. Also remarks that the safest place for all children is in the rear. <input type="checkbox"/>	Illustrated but buried within other unrelated warnings, for example, in a bulleted list. Must still contain a warning that the safest place for children is in the rear AND specifically mention the dangers of RF CRS and airbags. <input type="checkbox"/>	Buried among other text, incomplete warning, or no warning at all. <input type="checkbox"/>	
Instructions for routing both lap belt and lap/shoulder belt for this mode, including details about different vehicle seatbelts and how this CRS should be installed with each of them.	Illustrated clearly. No need to read text in order to route seatbelt; should be obvious from diagrams. Manual includes complete instructions for determining vehicle seatbelt type. <input type="checkbox"/>	Illustrated clearly. No need to read text in order to route seatbelt; should be obvious from diagrams. Instructions for determining vehicle seatbelt type are present but may be incomplete. <input type="checkbox"/>	Unclear instructions that require reading text. No mention of how to use vehicle seatbelts correctly. <input type="checkbox"/>	
Shows how to prepare and use lower attachments.	Clear illustrations show how to route and attach lower anchors to vehicle for using the CRS in this mode. One or two words per idea are OK for clarification. <input type="checkbox"/>	Illustrations plus written instructions provided. Need to read text to perform entire operation. <input type="checkbox"/>	Text-heavy instructions only provided or no instructions at all provided. Partial instructions; some step missing. <input type="checkbox"/>	
For this mode, information in written instructions and on labels match.	Yes. <input type="checkbox"/>		No. Please describe the conflict under notes. <input type="checkbox"/>	

NHTSA Ease of Use Rating Form - 2008				
Infant Only Restraints, Convertible RF Mode, or 3-in-1 RF Mode				
Make & Model _____ 0 _____		Model # _____ 0 _____		
Securing the Child				
	A	B	C	Notes
All functional parts (i.e., required for correct use as per instructions) including seat pad or cover attached and ready to use, harness slots and crotch strap in their lowest settings.	Yes. <input type="checkbox"/>		No, not ready to use regardless of how difficult the assembly may be. May direct user to manual or is otherwise difficult. Tools may be required. Please describe under notes. <input type="checkbox"/>	
Does the harness clip require threading to secure properly? Is it labeled to indicate its proper positioning on the child?	No, and harness clip is labeled. <input type="checkbox"/>	No, but harness clip is not labeled. <input type="checkbox"/>	Yes. <input type="checkbox"/>	
Evaluate the ease of inserting the shoulder portions of the harness buckle for this seat.	Each upper portion of the shoulder harness may be inserted separately. <input type="checkbox"/>	"Puzzle" buckle with an intermediate method of holding the shoulder portions together. <input type="checkbox"/>	"Puzzle" buckle with no intermediate method of holding the shoulder portions together. <input type="checkbox"/>	
Access to & use of harness adjustment system.	Can access harness system when installed, one hand to tighten (one pull system). Possible 2 hands to loosen (i.e., one to depress button and one to loosen the harness). <input type="checkbox"/>		Does not meet "A" criteria. Please describe under notes. <input type="checkbox"/>	
Evaluate the number and adjustability of the harness slots in the shell and the pad.	The number of slots in the pad & shell match, and there are at least 3 OR the system is adjustable to at least 3 heights. <input type="checkbox"/>		Does not meet "A" criteria. Please describe under notes. <input type="checkbox"/>	
Visibility & alignment of harness slots for systems that must be re-threaded.	Can see through all harness slots. All slots in pad are aligned with slots in shell. <input type="checkbox"/>	Cannot see through all harness slots because they are small or are misaligned with the shell. <input type="checkbox"/>	Cannot see all harness slots because there is something in way for this mode, e.g. an insert, a head hugger, or body pillow. <input type="checkbox"/>	<input type="checkbox"/> n/a, system does not require re-thread
Ease of adjusting the harness for child's growth.	No need to rethread system. No mandatory pieces exist that may become loose when adjusting system. <input type="checkbox"/>	No need to rethread system, but may be otherwise difficult to adjust. <input type="checkbox"/>	Harness must be rethread to adjust. Loose mandatory pieces may be present. Could misroute or incorrectly resecure harness. <input type="checkbox"/>	
Ease of conversion to RF from all other possible modes of use.	Simple operation with only a single or dual action. Illustrations and instructions on seat showing mode change. <input type="checkbox"/>	Simple operation but multiple actions are required. Illustrations may be missing from the label, requiring the user to read the manual. <input type="checkbox"/>	Operation is difficult, requiring many complicated steps that must be followed in the manual. <input type="checkbox"/>	<input type="checkbox"/> n/a, single mode CRS
Ease of re-assembly if pad/cover removed for cleaning.	No loose parts. Easy to remove and reattach the padding. No rethreading required. <input type="checkbox"/>	Harness system may need to be rethreaded to re-assemble, but no loose parts exist. <input type="checkbox"/>	Loose parts may exist, including the harness system. Harness system may need to be rethreaded to re-assemble. May even need hand tool(s). <input type="checkbox"/>	
Ease of adjusting/removing shield.	Clear illustration on CRS, simple action, shield marked. <input type="checkbox"/>	Need to read text, simple action, shield not marked. <input type="checkbox"/>	Other tool(s) required. <input type="checkbox"/>	<input type="checkbox"/> n/a, no shield <input type="checkbox"/> n/a, shield not adjustable

NHTSA Ease of Use Rating Form - 2008

Infant Only Restraints, Convertible RF Mode, or 3-in-1 RF Mode

Make & Model _____ 0 _____ Model # _____ 0 _____

Vehicle Installation Features

		A	B	C	Notes
Ease of routing vehicle belt or LATCH lower attachment straps (if flexible) for installation in this mode, with and without base if separate.		A 95th percentile male hand can route the seatbelt easily and comfortably. The padding does not need to be moved in order to route the belt. <input type="checkbox"/>		The belt path does not accommodate a 95th percentile male hand, or has to be routed under the CRS padding for one or more modes of RF installation. <input type="checkbox"/>	
Can vehicle belt or lower LATCH straps (if flexible) interfere with harness (including crotch strap) or be routed incorrectly with respect to other seat elements such as padding?		No contact or interference possible. <input type="checkbox"/>		Possible contact or misrouting. Please describe this potential under notes. <input type="checkbox"/>	
Ease of attaching/removing infant seat from base.		Simple to attach, difficult to mistakenly secure carrier to base. One step release mechanism easy to reach. <input type="checkbox"/>		Difficult to attach carrier securely to base. Easy to mistakenly secure carrier to base. Release mechanism may be difficult to reach. Carrier has the potential to appear correctly installed when it is not. <input type="checkbox"/>	<input type="checkbox"/> n/a, no separate base
Ease of use of any RF belt positioning feature on CRS such as a lock-off.		Simple to use with instruction on CRS. <input type="checkbox"/>	Simple to use but must refer to manual. <input type="checkbox"/>	Multiple steps, confusing to use even with manual. <input type="checkbox"/>	<input type="checkbox"/> n/a, no belt positioning feature
Evaluate the seat's angle feedback device and the recline capabilities of the base (if separate).	Convertible, 3-in-1	Obvious, separate recline device. Adjustable to at least three levels of recline for this mode. <input type="checkbox"/>	Indication on a label or text in the same color as the CRS shell used as the recline device. Adjustable to at least three levels of recline for this mode. <input type="checkbox"/>	No feedback device on CRS, or does not have three levels of recline for this mode. <input type="checkbox"/>	<input type="checkbox"/> n/a, has separate base
	Carrier with separate base	Obvious, separate recline device (may only be on the carrier since it is more critical). Base is adjustable so that it allows for at least three levels of recline for this mode. <input type="checkbox"/>	Base is adjustable so that it allows for at least three levels of recline for this mode. However, does not meet "A" criteria for separate recline device. <input type="checkbox"/>	Base does not have three levels of recline for this mode. <input type="checkbox"/>	<input type="checkbox"/> n/a, no separate base
Do the lower anchors require twisting to remove from the vehicle?		No, system fully retracts from vehicle anchors with release mechanism. <input type="checkbox"/>	No twisting required but secondary action required to remove lower anchor from seat bight. <input type="checkbox"/>	Yes, user must twist lower anchors to remove from vehicle. <input type="checkbox"/>	<input type="checkbox"/> n/a, no lower anchors
Evaluate the storage system for the lower anchors when not in use.		Simple, obvious, dedicated, labeled storage system. Or, lower anchors that completely retract when not in use. <input type="checkbox"/>	Storage system exists but may easily overlooked. <input type="checkbox"/>	No separate storage system exists, or user is directed to hook lower anchors together when not in use. <input type="checkbox"/>	<input type="checkbox"/> n/a, no lower anchors
Is there an indication on the carrier itself indicating where to put the handle when installed in vehicle?		Yes. <input type="checkbox"/>		No. <input type="checkbox"/>	<input type="checkbox"/> n/a, no separate carrier

NHTSA Ease of Use Rating Form - 2008

Forward Facing Only, Convertible FF Mode, Combination FF Mode, or 3-in-1 FF Mode

Date of Evaluation: _____ Evaluated by: _____

Manufacturer: Make & Model: _____

Model #: _____ Date of Manufacture: _____

Style: FF only Convertible (RF/FF) Combination (FF/Booster) 3-in-1 (RF, FF, & Booster) FF Vest Other: _____

Harness: 5-point OH Shield Other: _____

Seat Characteristics & Measurements

Appropriate child size range for this mode according to manual: _____ Date on manual: _____

FF Size Ranges	Weight				Height			
	Minimum		Maximum		Minimum		Maximum	
	kg	lb	kg	lb	cm	in	cm	in

NHTSA Ease of Use Rating Form - 2008

Forward Facing Only, Convertible FF Mode, Combination FF Mode, or 3-in-1 FF Mode

Make & Model _____ 0 _____ Seat # (on tag) _____ 0 _____

Evaluation of Labels

	A	B	C	Notes
Clear indication of child's size range for this mode. Is there additional information on the CRS about how the child should fit in it?	Separate, clear, complete height and weight information directly next to the illustration. Additional size information included as a picture. <input type="checkbox"/>	Separate, clear, complete height and weight information directly next to the illustration. Additional size information included as short, simple text. <input type="checkbox"/>	Incomplete text as indicated, text independent of illustration, or no illustration, and/or no mention of additional sizing information. <input type="checkbox"/>	
All methods of installing the seat in this mode are clearly indicated, including with lower anchors, lap belt only, and lap/shoulder belt.	Illustrated clearly with CRS in vehicle seat. Illustrations should be labeled for each method of installation, must include label on each mode that indicates tether should be used. <input type="checkbox"/>		Method missing, partially illustrated, or no illustrations at all. CRS may be shown without a vehicle seat. Illustrations may not be completely labeled for each method of installation, for example, may not be labeled indicating that tether should be in use for all FF installations. <input type="checkbox"/>	
Does the CRS indicate the correct harness slot height for this mode? Is there additional information on the CRS about how the shoulder straps should fit for this mode?	Yes, there is a graphic or contrasting text indicating the correct harness slots to use for this mode. Additional harness adjustment information is conveyed using a picture. <input type="checkbox"/>	Yes, there is text indicating the correct harness slots to use for this mode but they may be the same color as the shell. Additional harness adjustment information is included but may be text only. <input type="checkbox"/>	No indication of correct slots to use for this mode (for applicable multi-mode CRS) and/or no mention of additional sizing information. <input type="checkbox"/>	
Vehicle belt & flexible lower anchor path labeling and routing.	Illustrated clearly with no need to read text in order to route seatbelts. Label is directly next to the corresponding belt path on both sides of CRS. <input type="checkbox"/>	Belt routing path label is only contrasting on one side but would otherwise fulfill "A" criteria. <input type="checkbox"/>	Belt routing label not next to corresponding path. Belt routing path is only labeled on one side. Routing requires reading text or is otherwise not obvious from illustration. May also be obscured by seat pad. <input type="checkbox"/>	
Shows how to prepare and use lower attachments.	Clear illustrations show how to route and attach lower anchors to vehicle for using the CRS in this mode. One or two words per idea are OK for clarification. <input type="checkbox"/>	Illustrations plus written instructions provided. Need to read text. <input type="checkbox"/>	Text-heavy instructions only provided or no instructions at all provided. Partial instructions; some step missing. <input type="checkbox"/>	
Shows how to prepare and use the tether.	Clear illustrations show how to route and attach tether to vehicle for using the CRS in this mode. One or two words per idea are OK for clarification. <input type="checkbox"/>	Illustrations plus written instructions provided. However, need to read text in order to know to complete all steps. <input type="checkbox"/>	Text-heavy instructions only provided or no instructions at all provided. Partial instructions; some step missing. <input type="checkbox"/>	
Durability of labels.	Sticky label(s) or other method of technology label not peeling. <input type="checkbox"/>		Sticky label(s) are already peeling when restraint removed from box. <input type="checkbox"/> <input type="checkbox"/> n/a not youngest mode for this CRS	

NHTSA Ease of Use Rating Form - 2008

Forward Facing Only, Convertible FF Mode, Combination FF Mode, or 3-in-1 FF Mode

Make & Model _____ 0 _____ Seat # (on tag) _____ 0 _____

Evaluation of Instructions

	A	B	C	Notes
Is the owner's manual easy to find when the CRS is taken out of the box?	Attached to the child restraint in a clearly visible location. <input type="checkbox"/>		Attached to the child restraint in a hard-to-find location or not attached to the seat at all. <input type="checkbox"/> <input type="checkbox"/> n/a not youngest mode for this CRS	
Evaluate the storage system for accessing the manual in this mode.	It is easy to use and it is difficult for the manual to fall out. The manual can be accessed when the CRS is installed in this mode of use. <input type="checkbox"/>	It is easy to use, but the manual cannot be accessed when the CRS is installed in this mode of use. <input type="checkbox"/>	The designated storage system is difficult to use or cannot be accessed regardless of mode of use. <input type="checkbox"/>	
Clear indication of child's size range. Is there additional information in the instructions about how the child should fit?	Separate, clear, complete height and weight information directly next to the illustration. Additional size information included alongside a picture. <input type="checkbox"/>	Separate, clear, complete height and weight information directly next to the illustration. Additional size information included as short, simple text. <input type="checkbox"/>	Incomplete text as indicated, text independent of illustration, or no illustration, and/or no mention of additional sizing information. <input type="checkbox"/>	
All methods of installing the seat in this mode are clearly indicated, including with lower anchors, lap belt only, and lap/shoulder belt, with reference to using the tether with each one.	Illustrated clearly with CRS in vehicle seat. No need to read text although illustrations should be labeled for each method of installation. <input type="checkbox"/>		Method missing, partially illustrated, or no illustrations at all. CRS may be shown without a vehicle seat, or tether may not be labeled. <input type="checkbox"/>	
Indication that the safest place in a vehicle for children is the rear seat.	Separate from unrelated warnings and illustrated; has its own page or other very clear demarcation. <input type="checkbox"/>	Buried within other warnings, for example, in a bulleted list. <input type="checkbox"/>	Buried among other text or no warning at all. <input type="checkbox"/>	
Instructions for routing both lap belt and lap/shoulder belt for this mode, including details about different vehicle seatbelts and how this CRS should be installed with each of them.	Illustrated clearly. No need to read text in order to route seatbelt; should be obvious from diagrams. Manual includes complete instructions for determining vehicle seatbelt type. <input type="checkbox"/>	Illustrated clearly. No need to read text in order to route seatbelt; should be obvious from diagrams. Instructions for determining vehicle seatbelt type are present but may be incomplete. <input type="checkbox"/>	Unclear instructions that require reading text. No mention of how to use vehicle seatbelts correctly. <input type="checkbox"/>	
Shows how to prepare and use lower attachments & tether.	Clear illustrations show how to route and attach lower anchors and tether to vehicle for using the CRS in this mode. One or two words per idea are OK for clarification. <input type="checkbox"/>	Illustrations plus written instructions provided. Need to read text to perform entire operation. <input type="checkbox"/>	Text-heavy instructions only provided or no instructions at all provided. Partial instructions; some step missing. <input type="checkbox"/>	
For this mode, information in written instructions and on labels match.	Yes. <input type="checkbox"/>		No. Please describe the conflict under notes. <input type="checkbox"/>	

NHTSA Ease of Use Rating Form - 2008				
Forward Facing Only, Convertible FF Mode, Combination FF Mode, or 3-in-1 FF Mode				
Make & Model _____ 0 _____		Seat # (on tag) _____ 0 _____		
Securing the Child				
	A	B	C	Notes
All functional parts (i.e., required for correct use as per instructions) including seat pad or cover attached and ready to use, harness slots and crotch strap in their lowest settings. Tether must also come attached to CRS.	Yes. <input type="checkbox"/>		No, not ready to use regardless of how simple the assembly may be. May direct user to manual or is otherwise difficult. Tools may be required. Please describe under notes. <input type="checkbox"/> n/a not youngest mode for this CRS	
Does the harness clip require threading to secure properly? Is it labeled to indicate its proper positioning on the child?	No, and harness clip is labeled. <input type="checkbox"/>	No, but harness clip is not labeled. <input type="checkbox"/>	Yes. <input type="checkbox"/>	
Evaluate the ease of inserting the shoulder portions of the harness buckle for this seat.	Each upper portion of the shoulder harness may be inserted separately. <input type="checkbox"/>	"Puzzle" buckle with an intermediate method of holding the shoulder portions together. <input type="checkbox"/>	"Puzzle" buckle with no intermediate method of holding the shoulder portions together <input type="checkbox"/>	
Access to & use of harness adjustment system.	Can access harness system when installed, one hand to tighten (one pull system). Possible 2 hands to loosen (i.e., one to depress button and one to loosen the harness). <input type="checkbox"/>		Cannot reach the adjustment mechanism in this mode when correctly installed and/or other method of harness adjustment such as those that require two hands, re-threading, or removal of CRS from vehicle. <input type="checkbox"/>	
Evaluate the number and adjustability of the harness slots in the shell and the pad.	The number of slots in the pad & shell match, and there are at least 3 OR the system is adjustable to at least 3 heights. <input type="checkbox"/>		Does not meet "A" criteria. <input type="checkbox"/>	
Visibility & alignment of harness slots for systems that must be re-threaded.	Can see through all harness slots. All slots in pad are aligned with slots in shell. <input type="checkbox"/>	Cannot see through all harness slots because they are small or are misaligned with the shell. <input type="checkbox"/>	Cannot see all harness slots because there is something in way for this mode, e.g. an insert, a head hugger, or body pillow. <input type="checkbox"/> n/a, system does not require re-thread	
Ease of adjusting the harness for child's growth.	No need to rethread system. Simple, obvious operation of the harness adjustment system. No mandatory pieces exist that may become loose when adjusting system. <input type="checkbox"/>	No need to rethread system, but may be otherwise difficult to adjust. <input type="checkbox"/>	Harness must be rethread to adjust. Loose mandatory pieces may be present. Could misroute or incorrectly resecure harness, even for a no-thread system. <input type="checkbox"/>	
Ease of conversion to FF from all other possible modes of use.	Simple operation with only a single or dual action. Illustrations on seat showing mode change. <input type="checkbox"/>	Simple operation but multiple actions are required. Illustrations may be missing from the label, requiring the user to read text which must be present on CRS. <input type="checkbox"/>	Operation is difficult, requiring many complicated steps. The instructions may be confusing, or missing altogether. <input type="checkbox"/> n/a, single mode CRS	
Ease of re-assembly if pad/cover removed for cleaning.	No loose parts. Easy to remove and reattach the padding. No rethreading required. <input type="checkbox"/>	Harness system may need to be rethreaded to re-assemble, but it is a very simple system. No loose parts exist. <input type="checkbox"/>	Loose parts may exist, including the harness system. Harness system may need to be rethreaded to re-assemble. May even need hand tool(s). <input type="checkbox"/>	
Ease of adjusting/removing shield.	Clear illustration on CRS, simple action, shield marked. <input type="checkbox"/>	Need to read text, simple action, shield not marked. <input type="checkbox"/>	Other tool(s) required. <input type="checkbox"/> n/a, no shield <input type="checkbox"/> n/a, shield not adjustable	

NHTSA Ease of Use Rating Form - 2008

Forward Facing Only, Convertible FF Mode, Combination FF Mode, or 3-in-1 FF Mode

Make & Model _____ 0 _____ Seat # (on tag) _____ 0 _____

Vehicle Installation Features

	A	B	C	Notes
Ease of routing vehicle belt or LATCH lower attachment straps (if flexible) for installation in this mode.	A 95th percentile male hand can route the seatbelt easily and comfortably. The padding does NOT need to be moved in order to route the belt. <input type="checkbox"/>		The belt path does not accommodate a 95th percentile male hand, or has to be routed under (not past, which is OK) the CRS padding for FF installation. <input type="checkbox"/>	
Can vehicle belt or lower LATCH straps (if flexible) interfere with harness (including crotch strap) if routed correctly?	No contact or interference possible. <input type="checkbox"/>		Possible contact or misrouting. Please describe this potential under notes. <input type="checkbox"/>	
Ease of use of any FF belt positioning feature on CRS such as a lock-off.	Simple to use with instruction on CRS. <input type="checkbox"/>	Simple to use but must refer to manual. <input type="checkbox"/>	Multiple steps, confusing to use even with manual. <input type="checkbox"/>	<input type="checkbox"/> n/a, no belt positioning feature
Evaluate the tether on this CRS.	Only one hand required to tighten and release the tether. <input type="checkbox"/>		Does not meet "A" criteria. <input type="checkbox"/>	<input type="checkbox"/> no tether required
Do the lower anchors require twisting to remove from the vehicle?	No, system fully retracts from vehicle anchors with release mechanism. <input type="checkbox"/>	No twisting required but secondary action required to remove lower anchor from seat bight. <input type="checkbox"/>	Yes, user must twist lower anchors to remove from vehicle. <input type="checkbox"/>	
Evaluate the storage system for the lower anchors & tether when not in use.	Simple, obvious, dedicated, labeled storage system. Or, lower anchors or a tether that completely retracts when not in use. <input type="checkbox"/>	Storage system exists but may be easily overlooked. <input type="checkbox"/>	No separate storage mentioned or user is directed to hook lower anchors together or with tether when not in use. <input type="checkbox"/>	

NHTSA Ease of Use Rating Form - 2008

Booster, Combination Seat in BPB Mode, or 3-in-1 in BPB Mode

Date of Evaluation: _____ Evaluated by: _____

Manufacturer: Make & Model: _____

Model #: _____ Date of Manufacture: _____

Style: Low-Back High-Back High-Back/Low-Back Combination (FF/Booster) 3-in-1 (RF, FF, & Booster) Other _____

Seat Characteristics & Measurements

Child size range given in owner's manual: _____ Date on manual: _____

Booster Size Ranges	Weight				Height			
	Minimum		Maximum		Minimum		Maximum	
	kg	lb	kg	lb	cm	in	cm	in

NHTSA Ease of Use Rating Form - 2008

Booster, Combination Seat in BPB Mode, or 3-in-1 in BPB Mode

Make & Model _____ 0 _____

Model # _____ 0 _____

Evaluation of Labels

	A	B	C	Notes
Clear indication of child's size range for this mode. Is there additional information on the CRS about how the child should fit in it?	Separate, clear, complete height and weight information directly next to the illustration. Additional size information included as a picture. <input type="checkbox"/>	Separate, clear, complete height and weight information directly next to the illustration. Additional size information included as short, simple text. <input type="checkbox"/>	Incomplete text as indicated, text independent of illustration, or no illustration, and/or no mention of additional sizing information. <input type="checkbox"/>	
All method(s) of installing this CRS correctly are indicated (high back and/or low back).	Illustrated clearly with CR in vehicle seat. No need to read text although illustrations should be labeled for each method of installation. <input type="checkbox"/>		No illustrations at all or a method of installation is missing, or may be difficult to tell one method of installation from another. <input type="checkbox"/>	
Vehicle belt use & vehicle belt path labeling.	Illustrated clearly with no need to read text in order to route seatbelts. Label is directly next to the corresponding belt path or positioning device on both sides of CRS. <input type="checkbox"/>	Belt routing path label is only contrasting on one side but would otherwise fulfill "A" criteria. <input type="checkbox"/>	Belt routing label not next to corresponding path. Belt routing path or device is only labeled on one side. Routing requires reading text or is otherwise not obvious from illustration. May also be obscured by seat pad. <input type="checkbox"/>	
Label warning against using a lap belt only.	Illustration included warning user against using the CRS with the lap belt only for this mode. <input type="checkbox"/>	Text warning the user not to use the lap belt only in this mode. <input type="checkbox"/>	No written or illustrated warning. <input type="checkbox"/>	<input type="checkbox"/> n/a, may be used with lap belt
Durability of labels.	Sticky label(s) or other method of technology label not peeling. <input type="checkbox"/>		Sticky label(s) are already peeling when restraint removed from box. <input type="checkbox"/>	<input type="checkbox"/> n/a not youngest mode for this CRS

NHTSA Ease of Use Rating Form - 2008

Booster, Combination Seat in BPB Mode, or 3-in-1 in BPB Mode

Make & Model _____ 0 _____ Model # _____ 0 _____

Evaluation of Instructions

	A	B	C	Notes
Is the owner's manual easy to find when the CRS is taken out of the box?	Attached to the child restraint in a clearly visible location. Finding it in a very obvious storage system is acceptable. <input type="checkbox"/>		Attached to the child restraint in a hard-to-find location or not attached to the seat at all. This includes when it is found in an obscured storage system. <input type="checkbox"/> <input type="checkbox"/> n/a not youngest mode for this CRS	
Evaluate the storage system for accessing the manual in this mode.	It is obvious and easy to use. The manual can be accessed when the CRS is installed in this mode of use. <input type="checkbox"/>	It is obvious and easy to use, but the manual cannot be accessed when the CRS is installed in this mode of use. <input type="checkbox"/>	The designated storage system isn't obvious or it is difficult to use regardless of mode of use. <input type="checkbox"/>	
Clear indication of child's size range. Is there additional information somewhere in the manual about how the child should fit?	Separate, clear, complete height and weight information directly next to the illustration. Additional size information included alongside a picture. <input type="checkbox"/>	Separate, clear, complete height and weight information directly next to the illustration. Additional size information included as short, simple text. <input type="checkbox"/>	Incomplete text as indicated, text independent of illustration, or no illustration, and/or no mention of additional sizing information. <input type="checkbox"/>	
All methods of installing this seat with a lap/shoulder belt including low back and high back modes if they exist.	Illustrated clearly with CR in vehicle seat. No need to read text although illustrations should be labeled for each method of installation. <input type="checkbox"/>		No illustration, text only. May be illustrated, but not all modes shown. <input type="checkbox"/>	
Indication that the safest place in a vehicle for children is the rear seat.	Separate from unrelated warnings and illustrated; has its own page or other very clear demarcation. <input type="checkbox"/>	Buried within other warnings, for example, in a bulleted list. <input type="checkbox"/>	Buried among other text or no warning at all. <input type="checkbox"/>	
Instructions for routing lap/shoulder belt alongside a picture warning against using a lap belt only.	Illustrated clearly with CR on vehicle seat. No need to read text in order to route seatbelt. Diagram warning against using a lap belt only is included in this section of the manual unless seat may be used correctly with one. <input type="checkbox"/>	Illustrated, outlined, but may not be pictured on a vehicle seat. Text warning not to use with a lap belt (only if it is a misuse) included in this section of the manual. <input type="checkbox"/>	Unclear instructions that require reading text. Fails to caution against the use of lap belt only in this section of the manual (if this is a misuse). <input type="checkbox"/>	
For this mode, information in written instructions and on labels match.	Yes. <input type="checkbox"/>		No. Please describe the conflict under notes. <input type="checkbox"/>	

NHTSA Ease of Use Rating Form - 2008

Booster, Combination Seat in BPB Mode, or 3-in-1 in BPB Mode

Make & Model _____ 0 _____ Model # _____ 0 _____

Securing the Child

	A	B	C	Notes
All functional parts (i.e., required for correct use as per instructions) including seat pad or cover attached and ready to use, harness slots and crotch strap in their lowest settings.	Yes. <input type="checkbox"/>		No, not ready to use regardless of how difficult the assembly may be. May direct user to manual or is otherwise difficult. Tools may be required. Please describe under notes. <input type="checkbox"/>	<input type="checkbox"/> n/a not youngest mode for this CRS
Ease of conversion from any other mode of use to a booster.	Simple operation with only a single or dual action. Illustrations on seat showing mode change. <input type="checkbox"/>	Simple operation but multiple actions are required. Illustrations may be missing from the label, requiring the user to read text which must be present on CRS. <input type="checkbox"/>	Operation is difficult, requiring many complicated steps. The instructions may be confusing, or missing altogether. <input type="checkbox"/>	<input type="checkbox"/> n/a, booster only
Ease of conversion from high back to low back booster.	Simple action. Illustration provided on seat showing mode change. <input type="checkbox"/>	Simple action but no specific illustration is provided on seat. Text may be present. <input type="checkbox"/>	Action difficult or need additional instructions not found on CRS labels. Tools may be required. <input type="checkbox"/>	<input type="checkbox"/> n/a, combination or 3-in-1 <input type="checkbox"/> n/a, booster may not be converted
Ease of re-assembly if pad/cover removed for cleaning.	No loose parts. Easy to remove and reattach the padding. <input type="checkbox"/>		Loose parts. May even need hand tool(s). <input type="checkbox"/>	

Vehicle Installation Features

	A	B	C	Notes
Ease of use of any separate shoulder belt positioning or guide hardware on CRS.	Very simple action requiring one hand to use. <input type="checkbox"/>	Two hands to use but action is simple. <input type="checkbox"/>	Multiple steps to position belt, most likely need to read instructions for clarification. <input type="checkbox"/>	<input type="checkbox"/> n/a, no separate device
Does belt-positioning guide or device allow slack to occur? Does it also prevent the shoulder portion from slipping accidentally?	No. The shoulder belt can move freely through its positioning device. In addition, the shoulder belt cannot slip out of the device accidentally. <input type="checkbox"/>	No. The shoulder belt can move freely through its positioning device. However, the shoulder belt could slip out of the device accidentally. <input type="checkbox"/>	Yes. The shoulder belt movement is restricted by the belt-positioning device. <input type="checkbox"/>	<input type="checkbox"/> n/a, no separate device

Appendix B: Ease of Use Score Forms

	RF MODE - MAKE AND MODEL		MODEL #	Date of Manufacture
	0		0	00/00/00
	Feature			
Value	Evaluation of Labels	Score	Weighted Score	Weighted Ave.
2	Clear indication of child's size range.	0	0	0
2	Are all modes of use clearly indicated?	0	0	0
2	Are the correct harness slots for this mode indicated?	0	0	0
2	Seat belt & lower attachment routing path clarity.	0	0	0
2	Shows how to prepare & use lower attachments.	0	0	0
1	Durability of labels. (n/a if not youngest mode)	0	0	0
		Total	0	0
		Weighted Ave	0.00	
		Star Rating	n/a	
	Evaluation of Instructions			
2	Owner's manual easy to find?	0	0	0
1	Evaluate the access to the manual's storage system in this mode.	0	0	0
1	Clear indication of child's size range.	0	0	0
1	Are all modes of use clearly indicated?	0	0	0
1	Rear-facing airbag warning?	0	0	0
1	Instructions for routing seatbelt.	0	0	0
1	Shows how to prepare & use lower attachments.	0	0	0
2	Information in written instructions and on labels match?	0	0	0
		Total	0	0
		Weighted Ave	0.00	
		Star Rating	n/a	
	Securing the Child			
3	Is the seat assembled & ready to use?	0	0	0
3	Does harness clip require threading? Is it labelled?	0	0	0
2	Evaluate the harness buckle style.	0	0	0
3	Access to and use of harness adjustment system.	0	0	0
1	Number and adjustability of harness slots in shell and pad.	0	0	0
1	Visibility & alignment of harness slots.	0	0	0
3	Ease of adjusting the harness for child's growth.	0	0	0
3	Ease of conversion to RF from all other possible modes of use.	0	0	0
2	Ease of reassembly after cleaning.	0	0	0
2	Ease of adjusting/removing shield.	0	0	0
		Total	0	0
		Weighted Ave	0.00	
		Star Rating	n/a	
	Vehicle Installation Features			
3	Ease of routing vehicle belt or flexible lower attachments in this mode.	0	0	0
3	Can vehicle belt or lower attachments interfere with harness?	0	0	0
3	Ease of attaching/removing infant seat from base.	0	0	0
3	Ease of use of any belt positioning features.	0	0	0
	Evaluate seat's angle feedback device and recline capabilities.			
2	CRS only	0	0	0
2	Separate carrier and base	0	0	0
2	Do the lower attachments require twisting to remove?	0	0	0
2	Storage system for the lower attachments when not in use?	0	0	0
2	Handle placement instructions for the carrier?	0	0	0
		Total	0	0
		Weighted Ave	0.00	
		Star Rating	n/a	
		Total	0	0
		Weighted Ave	0.00	
	Overall	Star Rating	n/a	

FF MODE - MAKE AND MODEL			MODEL #	Date of Manufacture
0			0	00/00/00
Feature				
Value	Evaluation of Labels	Score	Weighted Score	Weighted Ave.
2	Is there a clear indication of proper child size?	0	0	0
2	Are all modes of use clearly indicated?	0	0	0
2	Are the correct harness slots for this mode indicated?	0	0	0
2	Seat belt & lower attachment routing path clarity.	0	0	0
2	Shows how to prepare & use lower attachments.	0	0	0
2	Shows how to prepare & use tether.	0	0	0
1	Durability of labels. (n/a if not youngest mode)	0	0	0
		Total	0	0
		Weighted Ave	0.00	
		Star Rating	n/a	
Evaluation of Instructions				
2	Owner's manual easy to find? (n/a if not youngest mode)	0	0	0
1	Evaluate the access to the manual's storage system in this mode.	0	0	0
1	Is there a clear indication of proper child size?	0	0	0
1	Are all modes of use clearly indicated?	0	0	0
1	Rear seat warning in written instructions.	0	0	0
1	Instructions for routing seatbelt.	0	0	0
1	Shows how to prepare & use lower attachments & tether.	0	0	0
2	Information in written instructions and on labels match?	0	0	0
		Total	0	0
		Weighted Ave	0.00	
		Star Rating	n/a	
Securing the Child				
3	Is the seat assembled & ready to use?	0	0	0
3	Does harness clip require threading? Is it labeled?	0	0	0
2	Evaluate the harness buckle style.	0	0	0
3	Access to and use of harness adjustment system.	0	0	0
1	Number and adjustability of harness slots in shell and pad.	0	0	0
1	Visibility & alignment of harness slots.	0	0	0
3	Ease of adjusting the harness for child's growth.	0	0	0
3	Ease of conversion to FF from all other possible modes of use.	0	0	0
2	Ease of reassembly after cleaning.	0	0	0
2	Ease of adjusting/removing shield.	0	0	0
		Total	0	0
		Weighted Ave	0.00	
		Star Rating	n/a	
Installation in vehicle				
3	Ease of routing vehicle belt and flexible lower attachments in this mode.	0	0	0
3	Can vehicle belt or lower attachments interfere with harness?	0	0	0
3	Ease of use of any belt positioning features.	0	0	0
3	Evaluate the tether adjustment.	0	0	0
2	Do the lower attachments require twisting to remove?	0	0	0
2	Storage system for the lower attachments & tether when not in use?	0	0	0
		Total	0	0
		Weighted Ave	0.00	
		Star Rating	n/a	
		Total	0	0
		Weighted Ave	0.00	
Overall		Star Rating	n/a	

BOOSTER MODE - MAKE AND MODEL			MODEL #	Date of Manufacture
	0		0	00/00/00
	Feature			
Value	Evaluation of Labels	Score	Weighted Score	Weighted Ave.
2	Is there a clear indication of proper child size?	0	0	0
2	Are all modes of use clearly indicated?	0	0	0
2	Seat belt use & routing path clarity.	0	0	0
2	Label warning against using a lap belt only.	0	0	0
1	Durability of labels. (n/a if not youngest mode)	0	0	0
	Total	0	0	0
	Weighted Ave	0.00		
	Star Rating	n/a		
	Evaluation of Instructions			
2	Owner's manual easy to find? (n/a if not youngest mode)	0	0	0
1	Evaluate the access to the manual's storage system in this mode.	0	0	0
1	Is there a clear indication of proper child size?	0	0	0
1	Are all modes of use clearly indicated?	0	0	0
1	Rear seat warning in written instructions.	0	0	0
1	Instructions for routing seatbelt.	0	0	0
2	Information in written instructions and on labels match?	0	0	0
	Total	0	0	0
	Weighted Ave	0.00		
	Star Rating	n/a		
	Securing the Child			
3	Is the seat assembled & ready to use? (n/a if not youngest mode)	0	0	0
3	Ease of conversion to booster from another mode.	0	0	0
2	Ease of conversion from high back to low back booster.	0	0	0
2	Ease of reassembly after cleaning.	0	0	0
	Total	0	0	0
	Weighted Ave	0.00		
	Star Rating	n/a		
	Installation in Vehicle			
3	Ease of use of any belt positioning features.	0	0	0
3	Does the belt positioning device allow slack? Can the belt slip?	0	0	0
	Total	0	0	0
	Weighted Ave	0.00		
	Star Rating	n/a		
	Total	0	0	0
	Weighted Ave	0.00		
	Star Rating	n/a		
	Overall Star Rating	n/a		

Appendix C : Ease of Use Star Rating System

Figure 1

Sample graphic for a “1 star” rating (Result < 1.70)



Figure 2

Sample graphic for a “2 star” rating (1.70 ≤ Result < 2.00)



Figure 3

Sample graphic for a “3 star” rating (2.00 ≤ Result < 2.30)



Figure 4

Sample graphic for a “4 star” rating (2.30 ≤ Result < 2.60)



Figure 5

Sample graphic for a “5 star” rating (Result ≥ 2.60)



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