

The contents of this document will be discussed at the open Commission Meeting (briefing) scheduled for October 3, 2012.



UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
4330 EAST WEST HIGHWAY
BETHESDA, MD 20814

This document has been electronically approved and signed.

THIS MATTER IS NOT SCHEDULED FOR A BALLOT VOTE.

A DECISIONAL MEETING FOR THIS MATTER IS SCHEDULED ON: October 10, 2012

DATE: September 19, 2012

TO: The Commission
Todd A. Stevenson, Secretary

THROUGH: Mary T. Boyle, Acting General Counsel
Kenneth R. Hinson, Executive Director

FROM: Patricia M. Pollitzer, Acting Assistant General Counsel
David M. DiMatteo, General Attorney

SUBJECT: Final Rule: Safety Standard for Infant Swings

The Office of the General Counsel is providing for Commission consideration the attached draft final rule for publication in the *Federal Register*. The draft final rule establishes a safety standard for infant swings, pursuant to the Danny Keysar Child Product Safety Notification Act, section 104 of the Consumer Product Safety Improvement Act of 2008.

Please indicate your vote on the following options:

- I. Approve publication of the attached document in the *Federal Register*, as drafted.

(Signature)

(Date)

II. Approve publication of the attached document in the *Federal Register*, with changes.
(Please specify.)

(Signature)

(Date)

III. Do not approve publication of the attached document in the *Federal Register*.

(Signature)

(Date)

IV. Take other action. (Please specify.)

(Signature)

(Date)

Attachment: Draft *Federal Register* Notice of Final Rule to Establish a Safety Standard for
Infant Swings



Staff Briefing Package

Infant Swings Final Rule Briefing Package

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Briefing Memo



UNITED STATES
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BETHESDA, MD 20814

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approved and signed.

MEMORANDUM

Date: September 19, 2012

TO: The Commission
Todd A. Stevenson, Secretary

THROUGH: Mary T. Boyle, Acting General Counsel
Kenneth R. Hinson, Executive Director
Robert J. Howell, Deputy Executive Director for Safety Operations

FROM: DeWane Ray, Assistant Executive Director
Office of Hazard Identification and Reduction

Celestine T. Kiss, Project Manager
Division of Human Factors, Directorate for Engineering Sciences

SUBJECT: Staff's Draft Final Rule for Infant Swings under the Danny Keysar Child
Product Safety Notification Act

I. INTRODUCTION

The Danny Keysar Child Product Safety Notification Act of the Consumer Product Safety Improvement Act (CPSIA) of 2008 requires the U.S. Consumer Product Safety Commission (CPSC, or Commission) to study and develop safety standards for certain infant and toddler products. Infant swings are one of the products specifically identified in section 104(f)(2) of the CPSIA as a durable infant or toddler product. The Commission is charged with promulgating consumer product safety standards that are substantially the same as the voluntary standard for infant swings or more stringent than the voluntary standard if the Commission determines that more stringent standards would further reduce the risk of injury associated with infant swings.

Section 104 of the CPSIA also requires the Commission to consult with representatives of consumer groups, juvenile product manufacturers, and independent child product engineers and experts to examine and assess the effectiveness of the relevant voluntary standards. This consultation process commenced in March 2010, during the ASTM International (formerly known as the American Society for Testing and Materials) subcommittee meeting regarding the ASTM infant swing voluntary standard, in which CPSC staff participated. Consultations with members of the ASTM subcommittee, who represent producers, users, consumers, government, and academia,¹ are ongoing.

This briefing package includes staff's response to comments received in response to the notice of proposed rulemaking (NPR), which was published on February 10, 2012, in the *Federal Register*

¹ ASTM International website: www.astm.org, About ASTM International.

(77 Federal Register 7011), assesses changes made to the infant swings voluntary standard, and presents staff's draft final rule to address potential hazards in infant swings.

II. BACKGROUND

A. ASTM Voluntary Standard Overview

ASTM F2088, *Standard Consumer Safety Specification for Infant Swings*, is the voluntary standard that was developed to address the identified hazard patterns associated with the use of infant swings. The standard was first approved in 2001, and then revised in 2003, 2008, 2009, twice in 2011, and twice in 2012. ASTM F2088 - 11b was the version referenced in the NPR. In the time since the NPR was published, ASTM approved and published two more versions of the standard, with the most current version, ASTM F2088 - 12a, having just been approved and published on September 1, 2012.

An "infant swing" is defined in the ASTM voluntary standard as *a stationary unit with a frame and powered mechanism that enables an infant to swing in a seated position. An infant swing is intended for use with infants from birth until a child is able to sit up unassisted.* The standard also addresses "cradle swings," which are defined as *an infant swing which is intended for use by a child lying flat* and "travel swings," which are defined as *a low profile, compact swing having a distance of 6 in. or less between the underside of the seat bottom and the support surface (floor) at any point in the seat's range of motion.* The standard was developed in response to incident data supplied by CPSC staff to address hazards such as: swings tipping over or collapsing, structural failures, entanglement in the restraints, and entrapment in leg holes.

B. Juvenile Products Manufacturers Association (JPMA) Certification

The Juvenile Products Manufacturers Association (JPMA) has a certification program for a variety of juvenile products, including infant swings. To obtain JPMA certification, manufacturers submit their products to an independent test laboratory for conformance testing to the most current ASTM voluntary standard. JPMA starts certification testing to a new standard 6 months after a standard is approved. Currently, there are five manufacturers that sell JPMA-certified infant swings.

III. DISCUSSION

A. Overview of Incident Data (Tab A)

A search of the CPSC epidemiological databases for incidents collected between May 19, 2011 and May 23, 2012, showed that there were 351 new infant swing-related incidents reported since the NPR.² Almost all were reported to have occurred between 2009 and 2012. The majority (333 out of 351 or 95 percent) of the reports were submitted to the CPSC by retailers and manufacturers through the CPSC's "Retailer Reporting System." The remaining 18 incident reports were submitted to the CPSC from various sources, such as the CPSC Hotline, Internet

² Data discussed in the NPR was collected between January 1, 2002 through May 18, 2011.

reports, newspaper clippings, medical examiners, and other state/local authorities. Two of the 351 incidents were fatal, and 349 were nonfatal; 24 of the nonfatal incidents resulted in injuries.

Fatalities

Of the two decedents in the fatal incidents, one was a 2-month-old who died when a blanket placed in the swing obstructed his airway, and the other was a 3-month-old who died when she rolled over to a prone position on the soft surface of the infant swing. The report does not state whether a restraint was in use at the time of the latter incident.

Nonfatal Incidents

There were 24 injuries reported among the 349 nonfatal incidents. Among the injured, 79 percent were 6 months old or younger; the remaining injured infants were 7 and 8 months of age. Some reports specifically mentioned the type of injury, while others only mentioned an injury with no specifics. Among the injuries specified, bumps, bruises, and lacerations were common. None required hospitalization. Most of the injuries were related to various product-related issues, such as swing seat, structural integrity, or restraint, similar to those reported and addressed in the NPR and the latest version of the voluntary standard.

*National Injury Estimates*³

There were an estimated total of 1,900 injuries (sample size=73, coefficient of variation=0.18) related to infant swings that were treated in U.S. hospital emergency departments during 2011.⁴ Although this reflects a decrease from the 2010 estimate of 2,200 injuries, the change was not statistically significant. Comparing with national injury estimates from the prior years, no statistically significant trend was observed over the 2002–2011 period.

No deaths were reported through the NEISS. About 78 percent of the injured were 6 months of age or younger, and about 91 percent were 12 months or younger. For the emergency department-treated injuries related to infant swings, the following characteristics occurred most frequently:

- Hazard – falls (78%); a majority of the reports did not specify the manner or cause of fall;
- Injured body part – head (62%);
- Injury type – internal organ injury (59%); and
- Disposition – treated and released (97%).

³ The source of the injury estimates is the National Electronic Injury Surveillance System (NEISS), a statistically valid injury surveillance system. NEISS injury data is gathered from emergency departments of hospitals that are selected as a probability sample of all the U.S. hospitals with emergency departments. The surveillance data gathered from the sample hospitals enable CPSC staff to make timely national estimates of the number of injuries associated with specific consumer products.

⁴ National injury estimates for 2002–2010 were presented in the NPR.

B. Hazard Pattern Characterization Based on Incident Data

The hazard patterns identified among the 351 new incident reports were similar to the hazard patterns that were identified among the incidents considered for the NPR. Most of the issues were determined to be product related. They are grouped as follows (in descending order of frequency of incidents):

- **Swing seat issues**, either seat design or seat failure, were the most commonly reported hazard, accounting for 25 percent of the 351 incident reports and four (17 percent) injuries. Seat design issues caused the seats to lean to one side, or tilt forward or backward. Seat failures resulted in seats folding up on the infant, seat pads not staying in place, or seats falling off with no other apparent component failure. With seats that leaned to one side, the infant bumped into the swing frame; with the seat failures, the infant almost always fell out of the swing.
- **Broken, detached, or loose components of the swing housing**, such as the arm, leg, motor housing, or hardware were the next most commonly reported problems. They accounted for 24 percent of the 351 incident reports and five (21 percent) injuries.
- **Restraint issues**, either the inadequate design of the restraint, or the failure of the restraint were the next most commonly reported hazard (23 percent of the 351 reported incidents). These issues resulted in the highest proportion of injuries (10 injuries or 42 percent). Common restraint-design scenarios included: infant falling (or nearly falling) out of the seat when leaning forward or sideways; and infant putting more weight toward the back of the seat, causing the seat to tilt back and the restraint failing to prevent the infant from sliding out on his/her head. Common restraint-failure scenarios included buckles or straps breaking or detaching from the product altogether.
- **Electrical or battery-related issues** were reported in 15 percent of the 351 reports. Overheating of the motor housing was the most common scenario. However, there were no injuries reported related to this issue.
- **Instability of the swing** was reported in 5 percent of the incident reports. In most of these cases, the swing was described as lifting up one leg when swinging, or tipping over completely. The latter scenario resulted in one injury.
- **Other product-related issues**, such as inadequate clearance between seat and swing frame, broken or detached toys and mobiles, and problems with swing speed, seat fabric, and assembly instructions were reported in 6 percent of the 351 incidents. One injury was reported.
- **Miscellaneous other issues** accounted for the remaining 2 percent of the 351 incident reports. This category includes the two fatalities that were determined to be nonproduct-related. Also in this category, were five reports with insufficient information to characterize

any specific hazard, and one report of product misuse, such as the intentional removal of the restraint; these nonfatal incidents resulted in three injuries.

C. *Staff Response to NPR Comments*

On February 10, 2012, the Commission published an NPR (77 Federal Register 7011) regarding options to address infant swing safety hazards. The NPR reviewed incident data related to slump-over deaths, falls, entrapment, hardware failures, electrical issues, product integrity, warning labels, and miscellaneous issues. The NPR solicited information and comments concerning all aspects of the proposed rule, but it also specifically asked about other potential means of addressing slump-over deaths, testing for seat deflection, and testing for electrical issues. Staff received 24 comments. The full comments can be found in Tab B. CPSC technical directorate staff's responses can be found as additional tabs.⁵ Below is a summary of staff's responses to comments (CPSC-2012-0011).

Slump-over warning label

Comment

Sixteen comments (-0002, -0003, -0004, -0006, -0008, -0009, -0010, -0012, -0013, -0015, -0016, -0018, -0019, -0020, -0022, and -0024) recommend that the text of the warning specify or clarify the hazard or the consequences of not avoiding the hazard. Comments about the need to specify the consequences of not avoiding the hazard generally recommend that the warning state explicitly that there is a risk of serious injury, death, or both. Comments about the need to clarify the hazard suggest explicit references to "asphyxiation" or "choking," or suggest references to the slump-over position or to a hunched position with the "chin touching chest." Six of the comments (-0003, -0010, -0013, -0016, -0018, and -0019) recommend that the warning specify the ages of the children at risk.

Staff Response

Staff believes that the current warning language requirements pertaining to the slump-over hazard are insufficient and agrees that the warning should be revised to clarify the hazard and the consequences of exposure to the hazard if the consumer cannot avoid it. The current warning statement does not describe the slump-over hazard, and the formatting of the warning implies that using the swing in the most reclined seat position is an additional measure intended to address the potential for the infant user to fall or strangle in the straps. In addition, one could argue that the warning statement does not describe the probable consequences of not avoiding the slump-over hazard because the warning's reference to "serious injury or death" is specific to falls and strangulations.

Staff recommends separating the warning statement pertaining to the slump-over hazard from the warnings about falls and strangulations and rewriting this warning statement as follows:

⁵ Tab C – *Human Factors Staff Response to NPR Comments and Revised Warning Requirements for Infant Swings.*
Tab D – *Swing Standard: Engineering Responses to Public Comments and Evaluation of Technical Differences.*
Tab E – *Final Regulatory Flexibility Analysis of Staff-Recommended Final Rule for Infant Swings.*

Keep swing seat fully reclined until child is at least 4 months old AND can hold up head without help. Young infants have limited head and neck control. If seat is too upright, infant's head can drop forward, compress the airway, and result in DEATH.

Warning about use of cradle swing

Comment

Five comments (-0003, -0009, -0010, -0012, and -0019) recommend that the warning state that infants who cannot hold up their heads unassisted should use only cradle swings. One comment (-0004) states that such a change would not substantially reduce the risk.

Staff Response

Staff's recommended revisions to the slump-over warning statement already improve the relevant warning statement in ASTM F2088 – 12a, by describing more explicitly the hazard, the consequences of exposure to the hazard, and the infants who are most at risk. As discussed earlier, “*Keep swing seat fully reclined* until child is at least 4 months old AND can hold up head without help” (emphasis added) is the part of the revised slump-over warning intended to communicate the appropriate hazard-avoidance behavior. The five comments cited above essentially are recommending that the highlighted portion of this statement be replaced with one that instructs consumers to use only cradle swings.⁶ The effectiveness of this change, therefore, depends on whether the use of a cradle swing with these children would address more incidents than fully reclining the seat back on non-cradle swings.

As noted in staff's NPR briefing package,⁷ all known swing fatalities occurred when the child was in the infant seat mode rather than the cradle mode. However, in the same package, the CPSC's Directorate for Health Sciences (HS) staff concluded that for infant swings having an adjustable seat recline with a seat back angle greater than 50 degrees, fully reclining the seat back until the infant can hold up his or her head unassisted also would address the slump-over hazard.⁸ Thus, staff doubts that a warning that tells consumers to use only cradle swings will be more effective than one that tells consumers to recline the seat fully.

Warning on all swings

Comment

⁶ ASTM F2088 – 12a (September 2012) defines a “cradle swing” as “an infant swing which [sic] is intended for use by a child lying flat” (section 3.1.2).

⁷ Kiss, C. T. (2012, January 11). *Staff Briefing Package: Infant Swings NPR Briefing Package* [Online]. Available: <http://www.cpsc.gov/library/foia/foia12/brief/swings.pdf>.

⁸ Marques, S., & Wanna-Nakamura, S. (2011, November 29). *Infant Swing-Related Deaths and Injuries*. CPSC Memorandum to Celestine T. Kiss, Project Manager, U.S. Consumer Product Safety Commission, Washington, DC.

Five comments (-0009, -0010, -0016, -0018, and -0020) request that all infant swings, not just reclining models with a seat back angle greater than 50 degrees, bear a warning related to the slump-over hazard. One of these comments (-0016) recommends that all reclining swings, regardless of the seat back angle, warn about placing the seat in the most reclined position for infants who are younger than 3 months or who cannot hold up their heads without assistance. The remaining four comments recommend that certain swings bear a warning prohibiting their use with infants who are younger than 3 months or who cannot hold up their heads without assistance. Of these, one (-0009) recommends that such a warning be present on all infant swings that do not lie “flat”; one (-0010) recommends the warning for all reclining swings, regardless of the seat back angle; two (-0018 and -0020) recommend that such a warning be present on all non-reclining models; and one of these two (-0018) also recommends the warning for all reclining models with seat back angles less than 50 degrees.

Staff Response:

To staff’s knowledge, all infant swings currently on the market are either cradle swings or reclining swings with a maximum seat back angle greater than 50 degrees from horizontal when measured in accordance with the ASTM standard. Staff is not aware of any reclining swings with a maximum seat back angle less than 50 degrees. Therefore, all reclining infant swings would bear the recommended warning label recommending that the seat be placed in the most reclined position for infants who are younger than 4 months or who cannot hold up their heads without assistance. As noted earlier, HS staff has concluded that fully reclining the seat back on reclining swings with a seat back angle greater than 50 degrees addresses the slump-over hazard.⁹ Thus, although the draft final rule would not prevent manufacturers from including the warning on reclining swings with a maximum seat back angle less than 50 degrees, staff cannot support mandating such a warning on these products. Cradle swings would not require the warning label because the seat back angle on these swings is not inclined enough to create the slump-over hazard.

Use pictures or visual aids

Comment

Two comments (-0006 and -0021) recommend the use of pictures or visual aids to clarify the warning message. One of these comments (-0021) suggests that this recommendation was intended for parents whose primary language is not English, or who are not familiar with measurements described in degrees.

Staff Response

Staff acknowledges that well-designed graphics might be useful to illustrate the appropriate orientation of the seat back when the infant swing is used with children 3 months old and younger. However, staff is not convinced that a graphic is necessary to convey this message to most consumers, and staff’s prior analyses of the incident data associated with infant swings have not revealed a pattern of incidents involving people who were not literate in English. Moreover, the design of effective graphics can be difficult. As referenced in Human Factors’ staff memo (Tab C), some seemingly obvious graphics are poorly understood and can give rise to

⁹ Marques, S., & Wanna-Nakamura, S. (2011, November 29). *Infant Swing-Related Deaths and Injuries*. CPSC Memorandum to Celestine T. Kiss, Project Manager, U.S. Consumer Product Safety Commission, Washington, DC.

interpretations that are opposite the intended meaning (so-called “critical confusions”). Thus, although staff may recommend action in the future—if we come to believe that graphic symbols are needed to reduce further the risk of injury associated with these products—at this time, staff recommends permitting, but not mandating, such supporting graphics.

Lastly, although the slump-over warning statement would be required on infant swings that have an adjustable seat recline with a seat back angle greater than 50 degrees, the warning statement itself is not required to reference this 50-degree measurement. Staff does not recommend any revisions to the slump-over warning statement that would introduce reference to “degrees.”

Age recommendations to recline settings

Comment

One comment (-0005) recommends that the infant swing recline settings include age recommendations. However, this commenter also acknowledges that developmentally delayed infants may be endangered when the parent or caregiver follows the age-recommended settings.

Staff Response

The wording on staff’s recommended new warning label explicitly directs consumers to use the swing in the most reclined position until the infant is 4 months of age and can hold their head up without help. Once the infant is able to do this, the swing can be used in any of the other settings. Therefore, adding age recommendations to the swing settings is not necessary.

Additional languages on warning labels

Comment

One comment (-0006) recommends that the slump-over warning be required to be printed in languages in addition to English. The comment suggests that the warning should be in English and Spanish at least.

Staff Response

Staff does not dismiss the potential usefulness of providing the slump-over warning and other warning information in Spanish and other non-English languages, and staff recognizes that adding Spanish versions of the warnings most likely would improve warning readability among the U.S. population more than adding any other language. Nevertheless, as noted in staff’s response to the visual aid comment, staff’s prior analyses of the incident data associated with infant swings have not revealed a pattern of incidents involving people who were not literate in English. Thus, although the draft final rule does not prohibit manufacturers from providing the required warnings in languages other than English, the available information provides no basis for mandating that manufacturers do so.

Additional warning on the label

Comment

Two comments (-0008 and -0020) state that the product should include warnings about the importance of using the restraint system. One of these comments (-0008) recommends the use of

the phrase: “DO NOT PLACE INFANT IN SWING WITHOUT SECURING RESTRAINTS.” The other comment (-0020) states that the warnings should “address the risks associated with a caregiver’s failure to properly employ the use of restraints while the swing is in use.” One additional comment (-0006) uses “failing to use the restraint system” as an example of product misuse, which should be warned against.

Staff Response

Section 8.3.1 of ASTM F2088 – 12a already warns about the potential for “serious injury or death from infants falling or being strangled in straps” and instructs consumers: “[a]lways secure infant in the restraint system provided.” In addition, the latter statement is nearly identical to the specific phrase recommended in the first comment cited above. Thus, staff believes that the current warning statements about this hazard are sufficient.

Staff does not believe that the product should include warnings about general product misuse. Consumers are less likely to read numerous warnings, especially about hazards that are highly unlikely. Therefore, warning about general product misuse or about numerous instances of product misuse that, individually, are very rare, would increase the likelihood that consumers will not receive the most important hazard information for the product.

Warnings against sleeping in swings

Comment

Three comments (-0007, -0016, and -0023) state that the product should warn against allowing infants to sleep in the swing. One of the comments suggests that the following language be added to the warning: “Do not use the swing for routine sleep.”

Staff Response

Staff does not believe that warning statements about not allowing infants to sleep in the swing should be added. Staff’s prior review of the available incident data suggests that the angle of the seat back is more relevant to the potential for slump-over deaths and that adjusting the seat back to the most reclined position would have addressed these incidents. The warnings already include a statement about adjusting the seat back to the most reclined position for children most at risk of slumping over; and staff has recommended revisions to the warning statement to clarify this message. Thus, CPSC staff believes that warnings about not sleeping in infant swings would not reduce further the incidence of slump-over deaths and that the data do not support mandating such a warning.

Warnings limiting swing use

Comment

One comment (-0007) recommends that there be warnings about limiting the amount of time that infants spend in the swing for “health and developmental concerns,” namely, positional/deformational plagiocephaly and developmental delays from a lack of “tummy time.”

Staff Response

Warnings are safety communications intended to inform consumers about hazards, with the ultimate goal of reducing injuries and deaths. Thus, while there may be exceptions, one generally should not provide a warning unless a significant hazard exists.¹⁰ Staff is not aware of any reported incidents of positional/deformational plagiocephaly involving infant swings. Even if one presumes that such an association exists, HS staff has stated that this condition does not pose a hazard to infants. Similarly, developmental delays from a lack of “tummy time” are not hazards *per se* and do not directly lead to injuries or deaths. Consequently, staff does not believe that this issue rises to the level required to mandate an associated warning on the product.

Seat deflection warning

Comment

One comment (-0009) recommends that swings supported by a single arm include a warning about the increased likelihood of seat deflection.

Staff Response

Staff does not believe that a warning about an increased likelihood of seat deflection is necessary for single-arm infant swings. Since publication of the NPR, CPSC staff has worked with the ASTM Subcommittee on Infant Swings to develop new, improved performance requirements intended to address seat deflection. Staff believes that these requirements, which are included in the draft final rule, will effectively address the risk associated with seat deflection, and therefore, eliminate the need for a warning.

Electrical cord strangulation warning

Comment

One comment (-0024) recommends that all swings with AC or electrical power cords include a warning label on the cords similar to that in the baby monitor standard, which warns about the strangulation hazard that such cords pose.

Staff Response

Staff does not believe that mandating a strangulation warning on the AC or electrical power cords that might accompany certain infant swings is appropriate at this time. The recently published voluntary standard for baby monitors, ASTM F2951-12, *Standard Consumer Safety Specification for Baby Monitors*, does require strangulation warnings on the cords of baby monitors, but it specifies different warnings, depending on whether the product is intended to be attached to a crib or not. For transmitters that are not intended to be attached to a crib, the warning instructs consumers to keep the cord more than 3 feet away from the child. For transmitters that are intended to be attached to a crib—a situation more analogous to an infant swing that holds the infant and has an electrical power cord attached—the warning instructs consumers to use the manufacturer-supplied protective cord covering at all times. However, infant swings are not required to provide protective coverings for electrical power cords, so staff is unclear how consumers would comply with such a warning.

¹⁰ Laughery, K. R., & Hammond, A. (1999). Overview. In M. S. Wogalter, D. M. DeJoy, & K. R. Laughery (Eds.), *Warnings and Risk Communication* (pp. 3-13). Philadelphia: Taylor & Francis.

A general warning about the risk of strangulation with these cords when the child is not in the product might be more reasonable. However, CPSC staff is not aware of any incidents associated with this hazard scenario involving infant swings, which suggests that this hazard does not rise to the level required for such a warning. Manufacturers of infant swings with cords are free to include strangulation warnings on their cords, and staff can revisit the possibility of mandating such warnings if future incident data show that doing so would be appropriate.

Dynamic and static tests

Comment

One comment (-011) states that the CPSC-proposed rule requires the tester to use a 75-lb weight and to drop it 500 times on the swing seat. The comment questions the new test method's predictive ability to replicate real-world conditions and injuries, because, the commenter states, the ASTM standard required a 25-lb weight dropped 50 times onto the seat. Next, the commenter suggests that the total number of drops could be increased beyond the current 500 drops. The total number of drops could be based on a consumer survey, asking parents how many times a day they put their baby in the swing and whether they used it for one or more babies. Lastly, the consumer states that it is unclear why the test involves dropping. The force of an impact, especially with a drop mass of 75 lbs repeated 500 times, could weaken the infant swing at an unreasonable and unrepresentative rate. The comment recommends, instead, that the test should measure the effect of a static mass placed in the seat over a period of time. Another comment (-0014) questions the 75-lb requirement in the static load test and requests staff's justification for this requirement.

Staff Response

The current ASTM standard, F2088 - 12a, has adopted the CPSC staff recommendation to increase the number of drops from 50 to 500 in the dynamic load test. The additional cycles were based on CPSC staff testing, which included life cycle testing. Staff believes a cyclic test of 500 drops is an appropriate test to evaluate the potential for structural failure in an infant swing. Continued testing beyond 500 cycles did not reveal any new issues and may place an unnecessary burden on the manufacturers and test labs. Additionally, the dynamic test specifies a 25-lb load not a 75-lb load, as suggested by the comment. The 25-lb load is the approximate weight of a 95th percentile 10- to 12-month-old child. The static load test included in the standard is the only test that calls for the application of a 75-lb load in the seat. The 75-lb static load has been part of the voluntary standard since its inception in 2001; this is not something newly added by staff.

Finally, the dynamic test drop height is 1 inch. The forces applied from this drop are considered by staff to be consistent with actual forces associated with swing use. Performing the dynamic test as specified in the standard ensures consistent, repeatable testing results. Together, these tests are intended to evaluate the structural integrity of the infant swing, and staff believes they are sufficient to address structural issues that would occur over the life of the product.

Product misassembly

Comment

The comment (-0024) states: “Because of the constant use/storage/lending use pattern of swings, we recommend that CPSC consider including additional requirements in the standard for infant swings, such as the provisions in the crib standard that seek to reduce hardware loss or misassembly. This could include requiring hardware that doesn’t back out or become loose, captive hardware, performance requirements to avoid misassembly, and a method to make sure instructions stay with the product.”

Staff Response

Staff has included a misassembly provision in standards for bassinets, play yards, and cribs based on reported incidents and known usage patterns. CPSC staff evaluating infant swings is aware of these hazard patterns in other juvenile product incidents but has concluded that ASTM has sufficiently addressed these issues by requiring that all threaded fasteners connecting structural components have a locking mechanism, such as lock washers, self-locking nuts, or other features designed to prevent detachment due to vibration. CPSC staff’s product evaluation revealed that many current swing designs use other means, such as Valco-type (push) button fasteners, which are permanently attached to the respective component. In most swing designs, misassembly of a swing would make the frame overtly unstable or result in an unnatural appearance that would be obvious to the consumer. The addition of a misassembly requirement would add a testing requirement for an incident pattern that is not evident among the incidents reported to CPSC staff and that is addressed by the existing standard.

Seat deflection

Comment

Multiple comments (-0009, -0011, -0014, -0025) question the seat deflection test and how it relates to injury reduction. Individual comments suggest including a second test to account for the potential of increased deflection over the life of the product. Another comment states that the CPSC did not explain why the agency chose 4 inches as its performance requirement.

Staff Response

Seat deflection is a design issue that should be addressed during the product’s development and verified with standard testing. The seat deflection test proposed by the CPSC was a preliminary test procedure under development at the time of the NPR. CPSC has continued to work with ASTM to refine the seat deflection test for infant swings. ASTM’s latest standard includes a new test methodology and performance requirements that measure various seat angles, as was suggested by one comment, and satisfactorily addresses the seat deflection issues raised by staff.

Electrical requirements

Comment:

One comment (-0025) states that infant swings are not designed to be operated by children. Instead, the comment states that infant swings are designed to be used by children, but they are designed to be operated by adults. Therefore, the commenter asserts that infant swings not be subject to 16 CFR part 1505 - *Requirements for electrically operated toys or other electrically operated articles intended for use by children*. According to the comment, third party

laboratories have been interpreting 16 CFR part 1505 in this manner for many years. Adding a new interpretation to 16 CFR part 1505 would create confusion and would be inconsistent with test protocols currently employed, the comment asserts.

Staff Response

While the NPR proposed that swings operating from an AC power source shall conform to 16 CFR part 1505, ASTM reworded that provision in the standard to address the issue of ensuring that AC adapters meet all national safety standards. Staff is in agreement with this new wording and recommends inclusion of this wording in the draft final rule. Therefore, it is unnecessary to include any reference to part 1505 in the final rule.

Compliant product marking

Comment

One comment (-0024) recommends that the CPSC consider adding a marking on products that are manufactured after the effective date so that consumers can clearly identify new products that meet the new mandatory standard.

Staff Response

A date code is already required to be on the product under section 8.1.3 of ASTM F2088 - 12a and 16 CFR part 1130 – *Requirements for consumer registration of durable infant or toddler products*. In addition, future changes to the standard may come into effect. Because it is not practicable to delineate every change to the standard through a new mark on the product, and because we believe that the current standard already substantially addresses this issue, staff recommends that no further action be taken.

Regulatory flexibility analysis

Comment

One comment (-0019) says that the regulatory flexibility analysis should consider the effect that a product recall would have on firms “. . . that are not known to be in compliance with the voluntary standard.”

Staff Response

The Regulatory Flexibility Act requires an evaluation of the likely economic impacts of conforming to the standard that is being proposed, not the economic impact of violating the standard. If firms comply with the standard, recalls related to nonconformance would be avoided.

Number of manufacturers contacted

Comment

One comment (-024) says that staff should try “to obtain a more accurate number of manufacturers who do not meet the ASTM standard” and suggests that staff “count those manufacturers who sell at major retailers that require ASTM compliance” as well. The comment

says that because “just ten firms are making or importing swings, CPSC could easily get direct information that would more clearly identify costs.”

Staff Response

Staff has attempted to obtain accurate estimates of small firms that do not conform to the ASTM voluntary standard for infant swings, as well as information on the likely costs of conformance. Further effort would not change the results of the analysis. Nor is it easy, necessarily, for firms to estimate prospectively the economic impact that a regulation will have on their costs.

Effective date

Comment

One comment (-0019) states that the Commission should “. . . consider extending the effective date to one year to help minimize a possibility of a substantial loss of revenue from the potential product recalls on the small manufacturers and importers.”

Staff Response

Almost all of the requirements proposed in the NPR were incorporated into ASTM F2088 - 12a, and the final rule differs from the proposed rule only insofar as an additional warning label regarding use has been added. Therefore, we believe that an effective date 6 months after publication of the final rule is sufficient to allow for review of the new requirements thoroughly and to ensure that new infant swings manufactured or imported after that date are in compliance with the new requirements. The 6-month effective date is consistent with the effective date established in most other rules issued under section 104 of the CPSIA.

Regulation coverage

Comment

One comment (012) states: “. . . the pre-existing voluntary standards unaddressed by the new regulation is [sic] the sweeping definition that places all infant swings in the same category for children up to the age of five.”

Staff Response

The draft final rule and the voluntary standard both indicate that infant swings are “*intended for use with infants from birth until a child is able to sit up unassisted.*” The commenter may have misunderstood the reference in the *Federal Register* notice where the “*definition of a ‘durable infant or toddler product’ is defined in section 104(f)(1) of the CPSIA as a durable product intended for use, or that may be reasonably expected to be used, by children under the age of 5 years.*”

D. Staff-Recommended Changes to ASTM F2088 - 12a (Tab D)

Since the notice of proposed rulemaking was published, two newer versions of ASTM F2088 were published. The newest version, ASTM F2088 - 12a, includes additional changes that were not addressed previously, modifies the CPSC-proposed language, or adopts the proposal with

some differences. The Commission's issues raised in the NPR and how the new standard addresses them are discussed below.

Seat Deflection

At the time of the NPR, the Commission proposed a preliminary test procedure to address the seat deflection issue, and it asked specifically for comments on the proposed test method. In addition, CPSC staff continued to work with ASTM to refine the seat deflection test for infant swings. ASTM's newest standard includes new language that contains a more comprehensive requirement based on maximum seat angle specifications, which includes additional seat back angle measurements or shoulder strap requirements. Staff believes that this requirement addresses more adequately the incidents in which a child falls out of the seat due to seat deflection.

Stability testing

Staff had two issues with stability testing and both were addressed in the new standard. ASTM F2088 - 12a has added the Commission's recommended testing for alternative swing designs in the worst-case orientation. So now, not only are swings with a traditional horizontal axis motion tested for stability, but also nontraditional, alternative designs with other than a horizontal axis of swing motion are tested to the new requirements.

The second stability issue was intended to refine the testing on swings with "L-" shaped cantilevered legs. Staff raised this issue out of concern that a test lab could interpret this test to require that the force be applied at the end of the "L-" shaped leg that is not in the vertical plane of the latch. In this case, the maximum force normally associated with folding is at the end of the leg vertically under the latch. However, after further discussions with ASTM, staff has concluded that the current wording allows testing to be performed as stated in the NPR, and the proper testing location for this design is readily apparent to all involved. Therefore, CPSC staff recommends that the infant swing unintentional folding test statement proposed in the NPR, as a clarification to the existing test procedure, be excluded from the final rule.

Electrical overload requirements

The NPR proposed electrical testing requirements that will reduce the likelihood of overloading electrical components, battery leakage, or electrical failures that could lead to fire. As part of these requirements, staff stated: "The test shall be conducted using a new swing." ASTM F2088 - 12a does not include that statement. However, the testing on swing samples is done largely independent of the electrical components. Therefore, the electrical components on a swing sample normally can be considered "new" even after other components have been tested. By accepting deletion of that statement, the number of samples required to complete a test is reduced. CPSC staff recommends accepting the electrical overload requirement as stated in ASTM F2088 - 12a.

Dynamic drop test cycles

The NPR proposed increasing the dynamic drop test cycles from 50 to 500 cycles to improve structural integrity and reveal potential structural issues of the swing components. Increasing the number of dynamic impact cycles to which the swing will be tested will reduce the possibility of

structural failures, and it is expected to lead to a decrease in the number and severity of injuries. ASTM F2088 - 12a includes this change.

Modify mobile and toy retention requirements

The NPR proposed modifying mobile and toy retention requirements to allow the force to be applied in any direction at or below the horizontal plane, in the orientation most likely to fail. ASTM included this modification in F2088 – 12a.

Other changes to F2088 - 12 and 12a

In addition to the changes noted above in response to the NPR, ASTM made a few other changes in F2088 - 12 and 12a, which staff finds acceptable. One change deals with the seat back recline fixture. ASTM accepted staff’s recommendation to use steel plates—as opposed to wood boards—for the seat back recline fixture and then added more design changes to adjust the center of gravity of the fixture to approximate more accurately the weight distribution of an actual child. The device is now identified as the “Hinged Weight Gage–Infant,” and a drawing of the figure is included in the standard. This change will improve the accuracy of testing, and therefore, improve the safety of the standard. This change was not proposed in the NPR, but it was developed with the participation of CPSC staff.

The other issue was a clarification to the AC adapters supplied with the product. ASTM F2088 - 12 states: *“6.1.5 AC adapters supplied with the product must be compliant with the appropriate current national standard for AC adapters.”* ASTM received a number of comments after the standard was published, asking for clarification of what “appropriate current national standard” meant in the requirement. ASTM added new wording and a note to make this clearer, and the newest standard includes those changes. Staff finds these changes to be acceptable.

Table 1 shows a comparison of the ASTM standards, the NPR, and staff’s draft final rule.

TABLE 1: Comparison of NPR-Recommended Changes to ASTM F2088 - 11b to ASTM F2088 - 12a Standard Consumer Safety Specification for Infant Swings and Draft Final Rule

ASTM F2088 - 11b Section # and Language	Proposed Language ¹¹	ASTM F2088 - 12a Section # and Language	Draft Final Rule
6.1.2.1 No existing requirement.	6.1.2.1 The swing seat shall not have a change in vertical deflection greater than 4 in. The change in vertical deflection shall be calculated by subtracting the distance measured in 7.2.2.2 from the distance measured in 7.2.2.3.	<p>6.5.2 Swings with a maximum seat back angle greater than 50° from horizontal measured in accordance with 7.13 shall include shoulder straps as part of the restraint system.</p> <p>6.8 Seat Angles for Swings with Removable Tray/Armbar or Without Tray/Armbar</p> <p>6.8.1 Products with a horizontal axis of swing motion shall meet the requirements of section 6.8.1.1 or 6.8.1.2.</p> <p>6.8.1.1 The angle between the seat back and horizontal shall be: less than 60° for full size swings less than 45° for travel swings and the angle between the seat bottom and horizontal shall be 30° or greater when tested in accordance with 7.14.</p>	Same as F2088 - 12a

¹¹ ~~Strikeout~~ indicates current language that is recommended to be removed. **Bold** indicates additional language recommended.

ASTM F2088 - 11b Section # and Language	Proposed Language ¹¹	ASTM F2088 - 12a Section # and Language	Draft Final Rule
		<p>6.8.1.2 The product shall include shoulder straps as part of the restraint system.</p> <p>6.8.2 Products with other than horizontal axis of swing motion shall meet the requirements of section 6.8.2.1 or 6.8.2.2</p> <p>6.8.2.1 The angle between the seat bottom and horizontal shall be 5° or greater when tested in accordance with 7.15.</p> <p>6.8.2.2 The product shall include shoulder straps as part of the restraint system.</p>	
7.2.2.2 No existing requirement.	7.2.2.2 Place a static load of 5 lb (2.3 kg) in the center of the seat distributed by a wood block. Measure and record the vertical distance from the floor to the lowest point on the infant swing’s seating surface. Remove the load.	7.13 <i>Seat Back Angle Measurement</i> —Place the back of the swing in the most upright use position. Remove positioning accessories, including pillows. Position the segments of the restraint system to limit interaction with the Hinged Weight Gage-Infant (see Fig. 10) when placed in the seat. Place the Hinged Weight Gage-Infant into the seat with the hinge located at the junction of the swing back and seat bottom (see Fig. 8). Place the inclinometer on the floor and zero the reading. Manually pivot the swing seat to the position that results in the most upright seatback angle. While maintaining this position, place the inclinometer against the Upper Plate of the Hinged Weight Gage and measure the maximum seat back angle as shown in Fig. 11.	Same as F2088 - 12a

ASTM F2088 - 11b Section # and Language	Proposed Language ¹¹	ASTM F2088 - 12a Section # and Language	Draft Final Rule
		<p>7.14 Place the back of the swing in the most upright use position. Remove positioning accessories, including pillows. Position the segments of the restraint system to limit interaction with the Hinged Weight Gage-Infant (see Fig. 10) when placed in the seat. Place the Hinged Weight Gage-Infant with the hinge located at the junction of the swing back and seat bottom (see Fig. 8). Place the inclinometer on the floor and zero the reading. Measure the angle between the seat back and horizontal (see Fig. 12). Measure the angle between seat bottom and horizontal (see Fig. 12).</p> <p>7.15 Place the back of the swing in the most upright use position. Remove positioning accessories, including pillows. Position the segments of the restraint system to limit interaction with the Hinged Weight Gage-Infant (see Fig. 10) when placed in the seat. Place the Hinged Weight Gage-Infant with the hinge located at the junction of the swing back and seat bottom (see Fig. 8). Place the inclinometer on the floor and zero the reading. Manually pivot the swing seat to the position that results in the minimum seat bottom angle. While maintaining this position, measure the angle between the Lower Plate of the Hinged</p>	

ASTM F2088 - 11b Section # and Language	Proposed Language ¹¹	ASTM F2088 - 12a Section # and Language	Draft Final Rule
		Weight Gage and horizontal (see Fig. 12).	
7.2.2.2 By any necessary means, place a static load of 75 lb (34.1 kg) or 3 times the manufacturer's maximum recommended weight, whichever is greater, in the center of the seat distributed by a wood block. Gradually apply the weight within 5 s, and maintain for 60 s.	7.2.2.3 By any necessary means, place a static load of 75 lb (34.1 kg) or 3 times the manufacturer's maximum recommended weight, whichever is greater, in the center of the seat distributed by a wood block. Gradually apply the weight within 5 s, and maintain for 60 s. Measure and record the vertical distance from the floor to the lowest point on the loaded infant swing's seating surface.	7.3.2.2 By any necessary means, place a static load of 75 lb (34.1 kg) or 3 times the manufacturer's maximum recommended weight, whichever is greater, in the center of the seat distributed by a wood block. Gradually apply the weight within 5 s, and maintain for 60 s.	Same as F2088 - 12a
6.7 <i>Swings Containing Battery Compartment(s) (remote control devices are exempt from the requirements in 6.7):</i>	6.7 Electrically Powered Swings (remote control devices are exempt from the requirements in 6.7):	6.1 Electrically Powered Swings (remote control devices are exempt from the requirements in 6.1):	Same as F2088 - 12a

ASTM F2088 - 11b Section # and Language	Proposed Language ¹¹	ASTM F2088 - 12a Section # and Language	Draft Final Rule
No existing requirement.	6.7.4 The surfaces of the batteries, switch, motor, or any other accessible electrical components shall not achieve temperatures exceeding 160°F (71°C) when tested in accordance with 7.13. At the conclusion of the test, the stalled motor condition shall not cause battery leakage, explosion, smoking, or a fire to any electrical component. This test shall be performed prior to conducting any other testing within the Performance Requirements section.	6.1.4 The surfaces of any accessible electrical component, including batteries, shall not achieve temperatures exceeding 160°F (71°C) when tested in accordance with 7.1. At the conclusion of the test, there shall be no battery leakage or, explosion or a fire to any electrical component. This test shall be performed prior to conducting any other testing within the performance requirements section.	Same as F2088 - 12a
No existing requirement.	6.7.5 Swings operating from an a/c power source, nominally a 120-V branch circuit, shall conform to 16 CFR part 1505.	6.1.5 AC adapters supplied with the product must denote compliance with the appropriate current national safety standard for AC adapters from a Nationally Recognized Testing Laboratory (NRTL). AC adaptors must have a nominal output voltage less than 30 VDC (42.4 VAC (peak)) and must not be capable of delivering more than 8 amps into a variable resistive load for one minute. Note 2-- Refer to UL1310 for Class II output definitions and evaluation.	Same as F2088 - 12a

ASTM F2088 - 11b Section # and Language	Proposed Language ¹¹	ASTM F2088 - 12a Section # and Language	Draft Final Rule
		<p>Note 3 – NRTLs are organizations recognized by OSHA in accordance with 29 CFR 1910.7 to test and certify equipment or materials (products) requiring approval by certain OSHA safety standards. A current list of NRTLs can be found at http://www.osha.gov/dts/otpca/nrtl/nrtllist.html.</p>	
No existing requirement.	<p>7.13 <i>Electrical Overload Test</i>—The test shall be conducted using a new swing. The swing shall be tested using fresh alkaline batteries or an a/c power source. If the swing can be operated using both, then both batteries and a/c power must be tested separately. If another battery chemistry is specifically recommended by the manufacturer for use in the swing, repeat the test using the batteries specified by the manufacturer. If the swing will not operate using alkaline batteries, then test with the type of battery recommended by the manufacturer at the specified voltage. The test is to be carried out in a draft-</p>	<p>7.1 The swing shall be tested using fresh alkaline batteries or an a/c power source. If the swing can be operated using both, then both batteries and a/c power must be tested separately. If another battery chemistry is specifically recommended for use in the swing by the manufacturer, repeat the test using the batteries specified by the manufacturer. If the swing will not operate using alkaline batteries, then test with the type of battery recommended by the manufacturer at the specified voltage. The test is to be carried out in a draft-free location, at an ambient temperature of 68 ± 9°F (20 ± 5°C).</p>	Same as F2088 - 12a

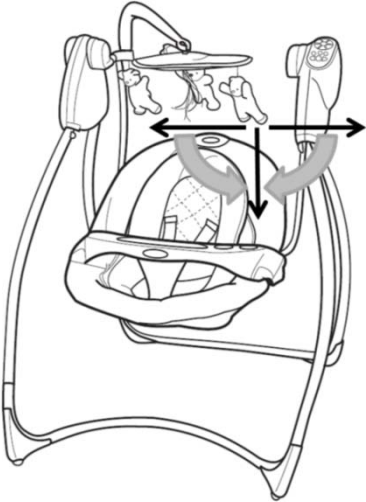
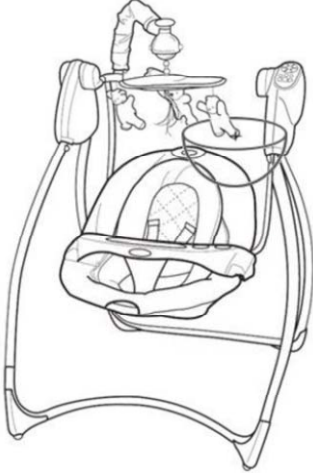
ASTM F2088 - 11b Section # and Language	Proposed Language ¹¹	ASTM F2088 - 12a Section # and Language	Draft Final Rule
	free location, at an ambient temperature of 68 ± 9°F (20 ± 5°C).		
No existing requirement.	7.13.1 Operate the swing at the maximum speed setting with the swing seat locked in a fixed position. Do not disable any mechanical or electrical protective device, such as clutches or fuses. Operate the swing continuously, and record peak temperature. The test may be discontinued 60 min after the peak temperature is recorded. If the swing shuts off automatically, or must be kept “on” by hand or foot, monitor temperatures for 30 s, resetting the swing as many times as necessary to complete the 30 s of operation. If the swing shuts off automatically after an operating time of greater than 30 s, continue the test until the swing shuts off.	7.1.1 Secure the swing so that the seat cannot move during the test. Operate the swing at the maximum speed. Do not disable any mechanical or electrical protective device, such as clutches or fuses. Operate the swing continuously, and record peak temperature. The test shall be discontinued 60 min after the peak temperature is recorded. If the swing shuts off automatically or must be kept “on” by hand or foot, monitor temperatures for 30 s, resetting the swing as many times as necessary to complete the 30 s of operation. If the swing shuts off automatically after an operating time of greater than 30 s, continue the test until the swing shuts off.	Same as F2088 - 12a

ASTM F2088 - 11b Section # and Language	Proposed Language ¹¹	ASTM F2088 - 12a Section # and Language	Draft Final Rule
7.2.1.2 Set-up the swing in accordance with the manufacturer's instructions. If the swing seat has more than one height position, recline position, or facing direction, test the product in the configuration most likely to fail.	7.2.1.2 Set-up the swing in accordance with the manufacturer's instructions. If the swing seat has more than one height position, recline position, or facing direction, tray position, or other adjustable feature , test the product in the configuration most likely to fail.	7.3.1.2 Set-up the swing in accordance with the manufacturer's instructions. If the swing seat has more than one height position, recline position, facing direction, tray position, or other adjustable feature position, test the product in the configuration most likely to fail.	Same as F2088 - 12a
7.2.1.3 Place the shot bag on the seating surface of the swing and allow swinging motion to come to rest. Secure the swing so that the seat cannot move during the test. The means of securing the seat shall not affect the outcome of the test. Raise the shot bag a distance of 1 in. above the seat of	7.2.1.3 Place the shot bag on the seating surface of the swing and allow swinging motion to come to rest. Secure the swing so that the seat cannot move during the test. The means of securing the seat shall not affect the outcome of the test. Raise the shot bag a distance of 1 in. above the seat of the swing. Drop the weight onto the seat 50 500 times with a cycle time of 4 +/- 1s/cycle. The drop height is to be adjusted to maintain the 1 in. drop height as is practical.	7.3.1.3 Place the shot bag on the seating surface of the swing and allow swinging motion to come to rest. Secure the swing so that the seat cannot move during the test. The means of securing the seat shall not affect the outcome of the test. Raise the shot bag a distance of 1 in. (25 mm) above the seat of the swing. Drop the weight onto the seat 500 times with a cycle time of 4 ± 1s/cycle. The drop height is to be adjusted to maintain the 1 in. (25 mm) drop height as is practical.	Same as F2088 - 12a

ASTM F2088 - 11b Section # and Language	Proposed Language ¹¹	ASTM F2088 - 12a Section # and Language	Draft Final Rule
the swing. Drop the weight onto the seat 50 times with a cycle time of 4 +/- 1s/cycle. The drop height is to be adjusted to maintain the 1 in. drop height as is practical.			
7.3.2.3 Position the product on the inclined surface with the axis of swinging motion parallel to the stop and the lower most frame member(s) in contact with the stop as shown in Fig. 5. If the product contains an axis of swinging motion that does not remain parallel to the stop during the full cycle of the swinging motion, the product shall be tested in the	7.3.2.3 For a product with a horizontal axis of swing motion , position the product on the inclined surface with the axis of swinging motion parallel to the stop and the lower most frame member(s) in contact with the stop as shown in Fig. 5. If the product contains an axis of swinging motion that does not remain parallel to the stop during the full cycle of the swinging motion, the product shall be tested in the positions most likely to fail. If the swing seat has more than one height position, recline position, or facing direction, direction of motion, tray position, or other adjustable feature , test the	7.4.2.3 For a product with a horizontal axis of swing motion, position the product on the inclined surface with the axis of swinging motion parallel to the stop and the lower most frame member(s) in contact with the stop as shown in Fig. 5. If the swing seat has more than one height position, recline position, facing direction, direction of motion, tray position, or other adjustable feature position, test the product in the configuration most likely to fail. Rotate the swing frame 180° and repeat the procedure.	Same as F2088 - 12a

ASTM F2088 - 11b Section # and Language	Proposed Language ¹¹	ASTM F2088 - 12a Section # and Language	Draft Final Rule
<p>positions most likely to fail.</p> <p>7.3.2.4 If the swing seat has more than one height position, recline position, or facing direction, test the product in the configuration most likely to fail.</p> <p>7.3.2.5 Rotate the swing frame 180° and repeat the steps in 7.3.2.2-7.3.2.4.</p>	<p>product in the configuration most likely to fail. Rotate the swing frame 180° and repeat the procedure.</p>		
<p>No existing requirement.</p>	<p>7.3.2.4 For a product with other than a horizontal axis of swing motion, position the product on the inclined surface in the most onerous swing orientation, such that the product is in contact with the stop. If the swing seat has more than one height position, recline position, facing direction, direction of motion, tray position, or other</p>	<p>7.4.2.4 For a product with other than horizontal axis of swing motion, position the product on the inclined surface in the most onerous swing orientations such that the product is in contact with the stop. If the swing seat has more than one height position, recline position, facing direction, direction of motion, tray position, or other adjustable feature position, test the product in the configuration most likely to fail.</p>	<p>Same as F2088 - 12a</p>

ASTM F2088 - 11b Section # and Language	Proposed Language ¹¹	ASTM F2088 - 12a Section # and Language	Draft Final Rule
	adjustable feature, test the product in the configuration most likely to fail.		
7.4.1 With the unit in the manufacturer's recommended use position, apply a force of 10 lbf (45 N) at the end of a leg in the direction normally associated with folding, while holding opposite leg(s) stationary. Gradually apply the force over 5 s, and maintain for an additional 10 s. Repeat this test on each leg.	7.4.1 With the unit in the manufacturer's recommended use position, apply a force of 10 lbf (45 N) at the end of a leg lowest point on the leg that results in the greatest force on the latch in the direction normally associated with folding, while holding opposite leg(s) stationary. Gradually apply the force over 5 s, and maintain for an additional 10 s. Repeat this test on each leg.	7.5.1 With the unit in the manufacturer's recommended use position, apply a force of 10 lbf (45 N) at the end of a leg in the direction normally associated with folding, while holding opposite leg(s) stationary. Gradually apply the force over 5 s and maintain for an additional 10 s. Repeat this test on each leg.	Same as F2088 - 12a
7.11.3 Gradually apply a vertical downward force of 10 lbf in the direction of the occupant to the end	7.11.3 Gradually apply a vertical downward force of 10 lbf in the direction of the occupant to the end of the mobile or component furthest from the swing attachment	7.12.3 Gradually apply a force of 10 lbf to the end of the mobile or component furthest from the swing attachment point. The direction of the force shall be in the most onerous direction and applied at or below the horizontal plane passing through the point at which the force is	Same as F2088 - 12a

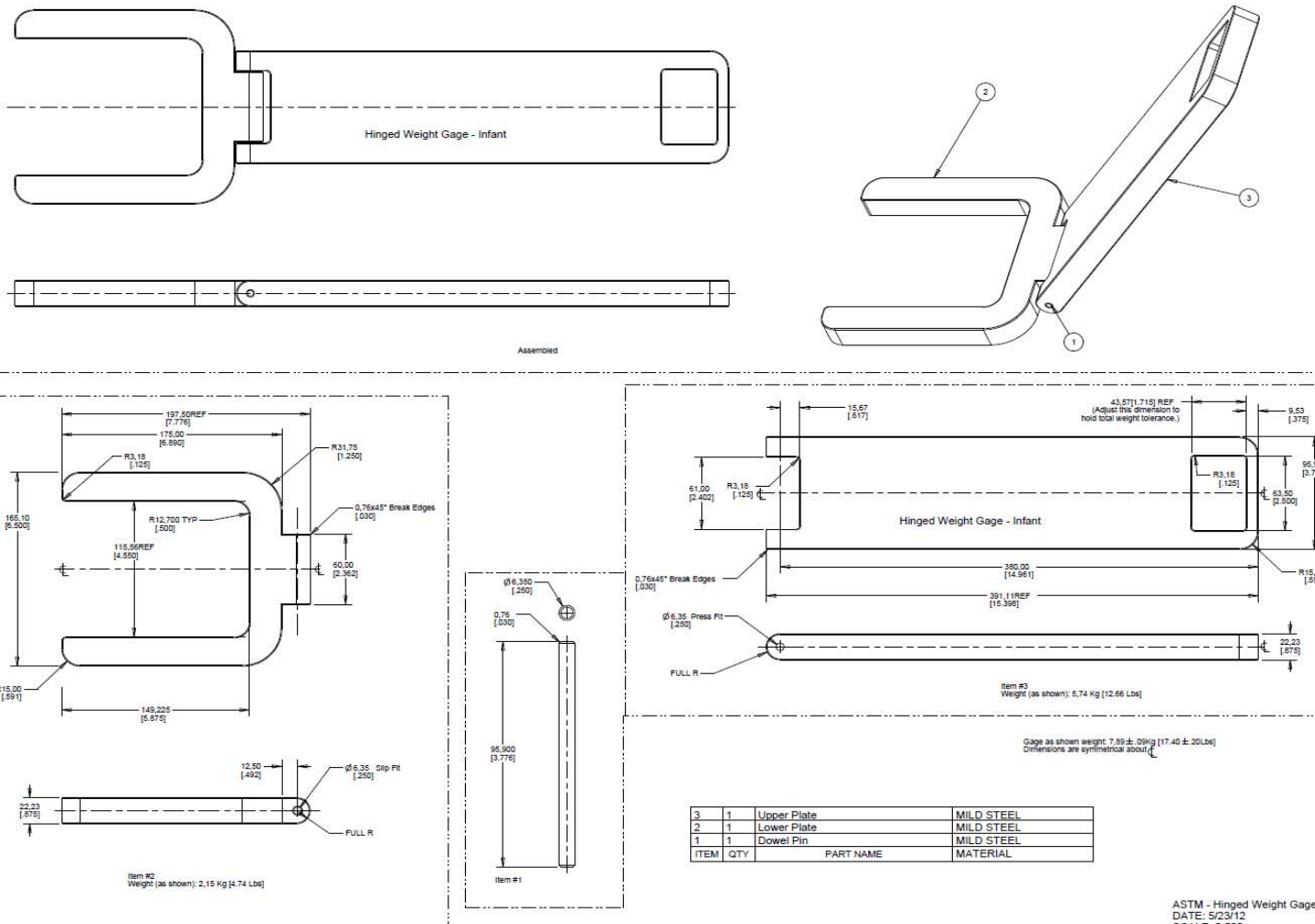
ASTM F2088 - 11b Section # and Language	Proposed Language ¹¹	ASTM F2088 - 12a Section # and Language	Draft Final Rule
<p>of the mobile furthest from the swing attachment point. Apply the force within 5 s and maintain for an additional 10 s.</p>	<p>point. The direction of the force shall be in the most onerous direction that is at or below the horizontal plane passing through the point at which the force is applied (see Fig. 8a). Apply the force within 5 s, and maintain for an additional 10 s, and release within 1 s. The test is complete after the release.</p>  <p>Fig. 8a Mobile Attachment Strength</p>	<p>applied (Fig. 9). Apply the force within 5 s and maintain for an additional 10 s.</p>  <p>Note—Hemisphere represents direction the force may be applied in radiating out from + mark. FIG. 9 Mobile Attachment Strength</p>	

ASTM F2088 - 11b Section # and Language	Proposed Language ¹¹	ASTM F2088 - 12a Section # and Language	Draft Final Rule
<p>7.12 <i>Seat Back Angle Measurement</i>—Place the back of the swing in the most upright position. Place the hinged boards with the hinged edge into the junction of the swing back and seat (see Fig. 8). Place the inclinometer on the floor and zero the reading. Manually pivot the swing to its furthestmost back position. While maintaining this position, place the inclinometer up against the back recline board to obtain the seat back angle as shown in Fig. 9.</p>	<p>7.12 <i>Seat Back Angle Measurement</i>—Place the back of the swing in the most upright use position. Remove positioning accessories, including pillows. Orient the belt restraint segments to limit interaction with the hinged boards. Place the hinged boards with the hinged edge into the junction of the swing back and seat (see Fig. 8). Place the inclinometer on the floor and zero the reading. Manually pivot the swing to its furthestmost back position. While maintaining this position, place the inclinometer up against the back recline board to obtain the seat back angle as shown in Fig. 9. Hinged boards shall be made of C1020 steel using a 4 by 4 in. (101 by 101 mm) plate hinged to a 4 by 9 in. (101 by 225 mm) plate. The thicknesses shall be adjusted so that the mass is equal to 17.5 lb.</p>	<p>7.13 <i>Seat Back Angle Measurement</i>—Place the back of the swing in the most upright use position. Remove positioning accessories, including pillows. Position the segments of the restraint system to limit interaction with the Hinged Weight Gage – Infant (see Fig. 10) when placed in the seat. Place the Hinged Weight Gage – Infant into the seat with the hinge located at the junction of the swing back and seat bottom (see Fig. 8). Place the inclinometer on the floor and zero the reading. Manually pivot the swing seat to the position that results in the most upright seatback angle. While maintaining this position, place the inclinometer against the Upper Plate of the Hinged Weight Gage and measure the maximum seat back angle as shown in Fig. 11.</p>	<p>Same as F2088 - 12a</p>

ASTM F2088 - 11b Section # and Language	Proposed Language ¹¹	ASTM F2088 - 12a Section # and Language	Draft Final Rule
<p>8.3.1 The warning statements shall address the following at a minimum: To prevent serious injury or death from infants falling or being strangled in straps: (1) Always secure infant in the restraint system provided. (2) Never leave infant unattended in swing. (3) Discontinue use of swing when infant attempts to climb out. (4) Products having an adjustable seat recline with a seat back angle greater than 50° measured in accordance with 7.12 shall address the following: Use only in most</p>	<p>No proposed change.</p>	<p>8.3.1 The warning statements shall address the following at a minimum: To prevent serious injury or death from infants falling or being strangled in straps: (1) Always secure infant in the restraint system provided. (2) Never leave infant unattended in swing. (3) Discontinue use of swing when infant attempts to climb out. (4) Products having an adjustable seat recline with a seat back angle greater than 50° measured in accordance with 7.13 shall address the following: Use only in most reclined seat position until infant can hold head up unassisted. (5) Travel swings (see 3.1.11) shall address the following: Always place swing on floor. Never use on any elevated surface.</p>	<p>8.3.1 The warning statements shall address the following at a minimum: 8.3.1.1 Products having an adjustable seat recline with a maximum seat back angle greater than 50 degrees from horizontal measured in accordance with 7.13 shall address the following: Keep swing seat fully reclined until child is at least 4 months old AND can hold up head without help. Young infants</p>

ASTM F2088 - 11b Section # and Language	Proposed Language ¹¹	ASTM F2088 - 12a Section # and Language	Draft Final Rule
<p>reclined seat position until infant can hold head up unassisted.</p> <p>(5) Travel swings (see 3.1.11) shall address the following: Always place swing on floor. Never use on any elevated surface.</p>			<p>have limited head and neck control. If seat is too upright, infant's head can drop forward, compress the airway, and result in DEATH.</p> <p>8.3.1.2 To prevent serious injury or death from infants falling or being strangled in straps: (1) Always secure infant in the restraint system provided. (2) Never leave infant unattended in swing. (3) Discontinue use of swing when infant attempts to climb out.</p>

ASTM F2088 - 11b Section # and Language	Proposed Language ¹¹	ASTM F2088 - 12a Section # and Language	Draft Final Rule
			Travel swings (see 3.1.11) shall address the following: Always place swing on floor. Never use on any elevated surface.
<p>FIG. 8 Seat Back Recline Board</p> <p>NOTE—3/4 by 4 by 4 in. (19 by 101 by 101 mm) board hinged to a 3/4 by 4 by 9 in. (19 by 101 by 225 mm) board placed in the junction of the swing seat.</p>	<p>Hinged boards shall be made of C1020 steel using a 4 by 4 in. (101 by 101 mm) plate hinged to a 4 by 9 in. (101 by 225 mm) plate. The thicknesses shall be adjusted so that the mass is equal to 17.5 lb.</p>	<p>FIGURE 10 – Hinged Weight Gage – Infant <i>(see figure on next page)</i></p>	<p>Same as F2088 - 12a</p>



NOTE—Dimensions are in millimetres with inches in parenthesis for reference.

FIG. 10 Hinged Weight Gage – Infant

F. Potential Small Business Impact

Infant swings typically are produced and/or marketed by juvenile product manufacturers and distributors. CPSC staff estimates that currently, there are at least nine domestic manufacturers and one domestic importer supplying infant swings to the U.S. market. Based on U.S. Small Business Administration guidelines, five are small domestic manufacturers likely to be affected by the staff-recommended final standard, as described in the Directorate for Economic Analysis memo (Tab E).

The direct impact on the three small manufacturers whose infant swings meet the current voluntary standard is not expected to be significant. However, there potentially could be a significant direct impact on the two small manufacturers whose infant swings are not compliant with the current voluntary standard, regardless of how they choose to meet the staff-recommended warning label requirement.

There are no known small importers operating in the U.S. market. However, importers would need to find an alternate source if their existing supplier does not come into compliance with the requirements of the staff-recommended final rule. They could also discontinue importing any noncomplying infant swings, possibly replacing them with another juvenile product.

In addition to the direct costs of the staff-recommended final infant swing standard, there are indirect costs that do not arise directly as a consequence of the infant swing rule's requirements. Rather, once the rule becomes final and the notice of requirements is in effect, infant swings will become subject to additional costs associated with the third party testing and certification requirements. These indirect costs are unlikely to be significant unless numerous samples per model are needed to meet the testing requirements.

F. Effective Date of Final Rule

The Administrative Procedure Act (APA) generally requires that the effective date of a rule be at least 30 days after publication of the final rule (5 U.S.C. 553(d)). To allow time for infant swing manufacturers to bring their products into compliance after the final rule is issued, the staff proposes that the standard should become effective 6 months after publication of a final rule for products manufactured or imported on or after that date. A 6-month effective date is consistent with other section 104 rules (with the exception of cribs).

IV. STAFF RECOMMENDATIONS

CPSC staff recommends adopting the ASTM F2088 - 12a voluntary standard as the federal regulation for infant swings, with CPSC staff-recommended modification to the warning label regarding slump-over incidents. The requirements outlined in staff's draft final rule are substantially the same as those in ASTM F2088 - 12a, *Standard Consumer Safety Specification for Infant Swings*, with the following change:

- Modified warning label language for slump-over incidents.

CPSC staff believes the modification to ASTM F2088 - 12a will reduce the number of deaths and injuries to infants from infant swings and recommends that the Commission adopt staff's draft final rule for infant swings with an effective date of 6 months after publication for products manufactured or imported on or after that date.

TAB A: Hazard Analysis Staff Memo

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UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
BETHESDA, MD 20814

MEMORANDUM

Date: June 8, 2012

TO : Celestine T. Kiss
Infant Swings Project Manager
Division of Human Factors
Directorate for Engineering Sciences

THROUGH: Kathleen Stralka
Associate Executive Director
Directorate for Epidemiology

Stephen Hanway
Director, Division of Hazard Analysis
Directorate for Epidemiology

FROM : Risana T. Chowdhury
Division of Hazard Analysis
Directorate for Epidemiology

SUBJECT : Infant Swing-Related Deaths, Injuries, and Potential Injuries Reported Between May 19, 2011 and May 23, 2012.

This memorandum updates the data in the Infant Swings NPR briefing package presented to the Commission in January 2012. The date of extraction for the earlier data was May 18, 2011. This memorandum includes infant swing-related incident data reported to CPSC staff from May 19, 2011 through May 23, 2012. In addition, the 2011 data for CPSC's National Electronic Injury Surveillance System (NEISS) database is now complete; hence, the national injury estimates for 2011 are also presented in this memorandum. National injury estimates for 2002–2010 were presented in the NPR briefing package.

Incident Data¹²

¹² The CPSC databases searched were the In-Depth Investigation (INDP) file, the Injury or Potential Injury Incident (IPII) file, and the Death Certificate (DTHS) file. These reported deaths and incidents are neither a complete count of all that occurred during this time period, nor a sample of known probability of selection. However, they do provide a minimum number of deaths and incidents occurring during this time period and illustrate the circumstances involved in the incidents related to infant swings.

Date of extraction for reported incident data was 05/23/12. All data coded under product code 1553 was extracted. Upon careful joint review with Human Factors (ESHF) staff, some cases were considered out of scope for the purposes of this memo. For example, cases with SIDS or other preexisting medical conditions as the official cause of death, cases where the child was outside the infant swing, cases where the child was playing on the swing, as opposed to using it, or cases where the product, although coded as an infant swing, was an outdoor toddler swing, were excluded. With the exception of incidents occurring on U.S. military bases, all incidents that occurred outside of the United States have been excluded. To prevent any double-counting, when multiple reports of the same incident were identified, they were consolidated and counted as one incident.

A search of the CPSC epidemiological databases showed that there were 351 new infant swing-related incidents reported between May 19, 2011 and May 23, 2012. Almost all were reported to have occurred between 2009 and 2012. The majority (333 out of 351 or 95 percent) of the reports were submitted to the CPSC by retailers and manufacturers through the CPSC's "Retailer Reporting System." The remaining 18 incident reports were submitted to the CPSC from various sources, such as the CPSC Hotline, Internet reports, newspaper clippings, medical examiners, and other state/local authorities. Two of the 351 incidents were fatal, and 349 were nonfatal; 24 of the nonfatal incidents resulted in injuries.

Fatalities

Between the two decedents in the fatal incidents, one was a 2-month-old who died when a blanket placed in the swing obstructed his airway, and the other was a 3-month-old who died when she rolled over to a prone position on the soft surface of the infant swing. It is not reported whether a restraint was in use at the time of the latter incident.

Nonfatal Incidents

There were 24 injuries reported among the 349 nonfatal incidents. Among the injured, 79 percent were 6 months old or younger; the remaining injured infants were 7 and 8 months of age. Some reports specifically mentioned the type of injury, while others only mentioned an injury, but no specifics about the injury. Among the injuries specified, bumps, bruises, and lacerations were common. None required hospitalization. Most of the injuries were related to various product-related issues, such as swing seat, structural integrity, or restraint.

Hazard Pattern Identification

The hazard patterns identified among the 351 new incident reports were similar to the hazard patterns that were identified among the incidents considered for the NPR. Most of the issues were determined to be product related. They are grouped as follows (in descending order of frequency of incidents):

- ***Swing seat issues***—either seat design or seat failure were the most commonly reported hazard, accounting for 25 percent of the 351 incident reports and four (17 percent) injuries. Seat design issues caused the seats to lean to one side or tilt forward or backward. Seat failures resulted in seats folding up on the infant, seat pads not staying in place, or seats falling off with no other apparent component failure. With seats that leaned to one side, the infant bumped into the swing frame; with the seat failures, the infant almost always fell out of the swing.
- ***Broken, detached, or loose components of the swing housing***, such as the arm, leg, motor housing, or hardware were the next most commonly reported problems. They accounted for 24 percent of the 351 incident report and five (21 percent) injuries.

- **Restraint issues**, either the inadequate design of the restraint or the failure of the restraint, were the next most commonly reported hazard (23 percent of the 351 reported incidents). These issues resulted in the highest proportion of injuries (10 injuries or 42 percent). Common restraint-design scenarios included: infant falling (or nearly falling) out of the seat when leaning forward or sideways; infant putting more weight toward the back of the seat, causing the seat to tilt back, and the restraint failing to prevent the infant from sliding out on their head. Common restraint-failure scenarios included buckles or straps breaking or detaching from the product altogether.
- **Electrical or battery-related issues** were reported in 15 percent of the 351 reports. Overheating of the motor housing was the most common scenario. However, there were no injuries reported related to this issue.
- **Instability of the swing** was reported in 5 percent of the incident reports. In most of these cases, the swing was described as lifting up one leg when swinging, or else tipping over completely. The latter scenario resulted in one injury.
- **Other product-related issues**, such as inadequate clearance between seat and swing frame, broken or detached toys and mobiles, and problems with swing speed, seat fabric, and assembly instructions were reported in 6 percent of the 351 incidents. One injury was reported in one of these incidents.
- **Miscellaneous other issues** accounted for the remaining 2 percent of the 351 incident reports. This category includes the two fatalities which were determined to be non-product-related. Also in this category were five reports with insufficient information to characterize any specific hazard, and one report of product misuse, such as the intentional removal of the restraint; these nonfatal incidents resulted in three injuries.

National Injury Estimates¹³

During 2011, there were an estimated total of 1,900 injuries (sample size=73, coefficient of variation=0.18) related to infant swings that were treated in U.S. hospital emergency departments. Although this reflects a decrease from the 2010 estimate of 2,200 injuries, the change was not statistically significant. Comparisons with national injury estimates from the prior years yields no statistically significant trend over the 2002–2011 period.

No deaths were reported through the NEISS. About 78 percent of the injured were 6 months of age or younger, and about 91 percent were 12 months or younger. For the emergency

¹³ The source of the injury estimates is the National Electronic Injury Surveillance System (NEISS), a statistically valid injury surveillance system. NEISS injury data are gathered from emergency departments of hospitals selected as a probability sample of all the U.S. hospitals with emergency departments. The surveillance data gathered from the sample hospitals enable CPSC staff to make timely national estimates of the number of injuries associated with specific consumer products.

All data coded under product code 1553 for patients ages 2 years and under was extracted. Certain records were considered out of scope for the purposes of this memo. For example, a child sustained a skull fracture when she fell off of a bed and hit her head on an infant swing. Another example is of an older sibling crawling into a swing with the infant and causing the swing to fall. These records were excluded prior to deriving the statistical injury estimates.

department-treated injuries related to infant swings, the following characteristics occurred most frequently:

- Hazard – falls (78%); a majority of the reports did not specify the manner or cause of fall;
- Injured body part – head (62%);
- Injury type – internal organ injury (59%); and
- Disposition – treated and released (97%).

TAB B: Notice of proposed rule comments

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List of Comment number and corresponding commenter's name:

Comment Number	Name
CPSC-2012-0011-0001	Proposed Rule
CPSC-2012-0011-0002	Maus, Emily
CPSC-2012-0011-0003	Anderson, Michael
CPSC-2012-0011-0004	Drezner, Michael
CPSC-2012-0011-0005	Neace, Kathleen
CPSC-2012-0011-0006	Bala, Nila
CPSC-2012-0011-0007	Cole, Laura
CPSC-2012-0011-0008	Barna, Laura
CPSC-2012-0011-0009	Hunt, Sinéad
CPSC-2012-0011-0010	Chen, Kevin
CPSC-2012-0011-0011	Barcia, Giselle
CPSC-2012-0011-0012	Brunner, Benjmain
CPSC-2012-0011-0013	McLean, Nicholas
CPSC-2012-0011-0014	Cahoy, Kathryn
CPSC-2012-0011-0015	Manoranjan, Tasha
CPSC-2012-0011-0016	Robles, Crystal
CPSC-2012-0011-0017	Mask, Brandie
CPSC-2012-0011-0018	Tran, Maggie
CPSC-2012-0011-0019	Overpeck, Matthew
CPSC-2012-0011-0020	Mohr, Carrie
CPSC-2012-0011-0021	Santiago, Catherine
CPSC-2012-0011-0022	Feda, Matthew
CPSC-2012-0011-0023	Williamson, Marcela
CPSC-2012-0011-0024	Cowles, Nancy
CPSC-2012-0011-0025	JPMA

CPSC-2012-0011-0002

PUBLIC SUBMISSION

As of: 4/11/12 10:12 AM Tracking No. 80fb3cc5 Comments Due: April 25, 2012
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Docket: [CPSC-2012-0011](#)
Safety Standard for Infant Swings

Comment On: [CPSC-2012-0011-0001](#)
Safety Standard for Infant Swings

Document: [CPSC-2012-0011-0002](#)
Comment from Emily Maus

Submitter Information

Name: Emily Maus
Organization: Georgetown Law Students

General Comment

In response to section L, subpoint 1. Slump Over Deaths.

The proposed rule maintains the current language from 8.3.1(4) of ASTM F 2088-11b on the mandatory warning label: "Use only in most reclined seat position until infant can hold head up unassisted." We feel this language is too vague in regards to the potential risk because it does not relay the true seriousness of potential harm to the user. Although the rule gives proper instruction to the consumer, it does not fully detail the repercussions. Therefore, we suggest prefacing the warning with, "to avoid risk of serious injury."

"To avoid risk of serious injury, use only in most reclined seat position until infant can hold head up unassisted."

The label as a whole is intended to be a warning, not merely an instruction. We feel that this does not overstate the danger, but creates an appropriate sense of importance.

CPSC-2012-0011-0003

PUBLIC SUBMISSION

As of: 4/11/12 10:07 AM Tracking No. 80fbbfad Comments Due: April 25, 2012
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Docket: [CPSC-2012-0011](#)
Safety Standard for Infant Swings

Comment On: [CPSC-2012-0011-0001](#)
Safety Standard for Infant Swings

Document: [CPSC-2012-0011-0003](#)
Comment from Michael Anderson

Submitter Information

Name: Michael Anderson

General Comment

See attached file(s)

Attachments

Infant Swing Safety Standard Comment

This comment concerns the proposed revisions of the infant swing safety standard that are aimed at reducing slump-over deaths. I believe that the standard should state that infants who cannot hold up their head should only be placed in cradle swings, and the warning label on infant seats that recline should explicitly mention the risk of death.

The CPSC report states that over 2.7 million infant swings are purchased every year. Infant swings are popular items on baby registries and it is probable that the majority of the swings are purchased with newborn infants specifically in mind. It is likely that a blanket standard that infants who cannot hold up their heads should not be placed in *any* infant swing will largely be ignored simply because infant swings are so commonly used for newborns that many parents will be reluctant to believe that a risk actually exists. On the other hand, a statement that infants who cannot hold up their heads should *only* be placed in cradle swings would provide guidance to parents and other consumers when purchasing an infant swing and potentially direct them toward a safer version of the product. A standard that allows the use of cradle swings for newborn infants may, therefore, be more effective at reducing the risk of slump-over deaths.

It is also important that the standard explicitly mention the numerical age at which infants can typically control their heads. The CPSC report states that the slump-over deaths are most likely to occur in infants between two weeks and three months of age; the standard should, therefore, state that children who are less than three months of age or cannot control their heads should only be placed in cradle swings. It is important to include the age because head control in newborns is a matter of degree and the phrase “cannot control their heads” may not provide appropriate guidance to inexperienced consumers.

Finally, if the CPSC decides to allow the use of reclining infant swings for newborns, any warning label on infant swings with an adjustable seat recline should explicitly mention the risk of death. Again, infant swings have been used for newborns for so long that there is a default presumption of safety; unless the consumer is informed of the exact risk that the product poses, the warning is likely to go unheeded. The warning label should therefore state: To reduce the risk of injury or death, use only in most reclined seat position until infant is three months of age and can hold head up unassisted. If the CPSC decides to adopt a standard which states that infants who cannot hold their heads unassisted should only be placed in cradle swings, the warning label should state: To reduce the risk of injury or death, do not use until infant is three months of age and can hold head up unassisted.

Before reading this proposed rule, I was largely unfamiliar with the risk of injury and death associated with infant swings. After talking with other parents about this issue, I believe that the goal of reducing the risk of slump-over deaths would best be achieved by having the standard state that infants who are less than three months of age or cannot control their heads should only be placed in cradle swings and by modifying the warning labels on reclining swings to explicitly state the risk of death.

CPSC-2012-0011-0004

PUBLIC SUBMISSION

As of: 4/11/12 10:44 AM Tracking No. 80fdd61c Comments Due: April 25, 2012
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Docket: [CPSC-2012-0011](#)
Safety Standard for Infant Swings

Comment On: [CPSC-2012-0011-0001](#)
Safety Standard for Infant Swings

Document: [CPSC-2012-0011-0004](#)
Comment from Michael Drezner

Submitter Information

Name: Michael Drezner
Organization: Yale Law School

General Comment

Comment to Proposed Rulemaking

Re: CPSC Docket No. CPSC-2012-0011

This comment is in response to the request in Section L for input relating to the risk of slump-over deaths. My position is that the risk of slump over deaths would not be substantially reduced by a revision to restrict infant swing use only to those infants who can hold their own head up. At the same time, however, I believe that the proposed warning label can be revised so as to more thoroughly inform the consumer of the dangers of slump-over deaths.

(see attached file for full comment)

Attachments

Comment to Proposed Rulemaking

Comment to Proposed Rulemaking

Re: CPSC Docket No. CPSC-2012-0011

This comment is in response to the request in Section L for input relating to the risk of slump-over deaths. My position is that the risk of slump over deaths would not be substantially reduced by a revision to restrict infant swing use only to those infants who can hold their own head up. At the same time, however, I believe that the proposed warning label can be revised so as to more thoroughly inform the consumer of the dangers of slump-over deaths.

First, the risk of slump-over deaths will not be significantly lessened due to a restriction in the use of infant swings. This is simply drawn from the statistics incorporated in the proposed rule. The data compiled regarding injury and death from infant swings was drawn from approximately ten years, from January 1, 2002 to May 18, 2011. In that time 15 fatalities related to infant swings were reported, and 5 were deemed slump-over deaths. However, CPSC also estimates that around 2.7 million infant swings are sold each year. Thus, only looking to the use of new infant swings, there were some 27 million infant swings used in the ten-year period analyzed. Again, assuming that the five slump-over deaths occurred only with newly purchased swings, there is one slump over death for every 5.4 million swing sets purchased. Attempting to restrict the use of infant swings to slightly older infants would thus likely only reduce the risk of slump-over deaths by some infinitesimal amount, given the already miniscule risk that currently exists.

However, if the CPSC is committed to a warning label regarding the proper use of infant swings to avoid slump over deaths, then the proposed label should be revised. As the label stands, the guidance to use the swing in the most reclined position "until infant can hold head up unassisted" does not convey the reasons or risks associated with the recommendation. The warning label should more properly inform the consumer as to why the swing should be used in this manner.

Some possible alternatives include the CPSC warning regarding baby sling carriers, *see* CPSC News Release #10-165 at <http://www.cpsc.gov/cpsc/pub/prerel/prhtml10/10165.html>. Diagrams with accompanying explanation help drive home the risks involved in misuse of the infant-associated product there. Also, and more simply is the label promulgated by the CPSC for small toys, *see* CPSC, Labeling Requirement for Toy and Game Advertisements; Final Rule, 16 CFR Part 1500. The label there simply states "CHOKING HAZARD. Not for under 8 years." This label seems apt to the current situation, using an initial strong warning followed by a specific recommendation. For instance here, CPSC might use the label: "ASPHYXIATION HAZARD. Use in most reclined position until infant can hold head up unassisted." This labeling far more effectively conveys the risk associated with improper use of infant swings.

CPSC-2012-0011-0005

PUBLIC SUBMISSION

As of: 4/11/12 11:00 AM Tracking No. 80fe0862 Comments Due: April 25, 2012

Docket: [CPSC-2012-0011](#)
Safety Standard for Infant Swings

Comment On: [CPSC-2012-0011-0001](#)
Safety Standard for Infant Swings

Document: [CPSC-2012-0011-0005](#)
Comment from Kathleen Neace

Submitter Information

Name: Kathleen Neace

General Comment

See attached file(s)

Attachments

Admin Comment

This comment concerns the proposed revisions to the infant swing safety standard that are aimed at reducing the “slump-over death” hazard. Since there is no apparent engineering solution to the potential hazard of slump-over, the solution must lie in encouraging proper and safe usage of swings’ reclining options. I believe that, in addition to the warning label suggested by the proposed revision, infant swings should label their reclining settings with recommended infant age. If a swing has multiple settings for seat angle, only one of which is safe for the smallest of infants, those settings should be labeled according to what age group is safe using which setting.

Although this information is not contained in the proposed rule, my own review of infant swings has revealed that the various settings are most often denoted by numbers (Setting 1 being the most reclined, Setting 3 being the most upright – or vice versa). These setting labels could easily be replaced with indications of the age group for which each setting is most appropriate. If most infants can hold their own heads up by the end of the first month, then the most reclined setting should be labeled “0-1 months,” with each subsequent setting marked in proportion to the growing strength of the average infant.

This new system of labeling recliner settings would reinforce the information already proposed to be contained within the warning label. While many parents or caregivers may not take the time to read a warning label carefully, they will certainly look at the setting labels every time they adjust the swing’s level of recline. If the age indications prompt a parent to question the reasoning behind these numbers, it may lead them to read the warning label more closely. This can only lead to a more informed public and a safer infant population.

There is a potential for danger if this suggestion is implemented. While the average infant may be able to hold its head up at one month old, there are likely some infants who cannot. If the next most upright setting indicates that it is safe for infants over one month old, those infants whose development is below average may be endangered when the parent or caregiver follows the instructions. For this reason, it may be best to err on the side of safety when determining the age range for each setting. Further study could reveal what age would be optimal in order to maximize the number of children protected by the new labels. Instructions and the warning label could be utilized to explain that the age range listed on each seat setting is simply a recommendation based on statistics, but that the true measure of safety is the infant’s ability to hold its own head up (just as is explained in the currently proposed revision to the warning label.) Thus, infants who do fall within normal developmental ranges can safely advance to the second setting before they actually exceed the age on the label.

CPSC-2012-0011-0006

PUBLIC SUBMISSION

As of: 4/11/12 10:28 AM Tracking No. 80fe0872 Comments Due: April 25, 2012
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Docket: [CPSC-2012-0011](#)
Safety Standard for Infant Swings

Comment On: [CPSC-2012-0011-0001](#)
Safety Standard for Infant Swings

Document: [CPSC-2012-0011-0006](#)
Comment from Nila Bala

Submitter Information

Name: Nila Bala

General Comment

Please see attached.
Thank you for your consideration,
Nila Bala

Attachments

Comment

Consumer Products Safety Commission, Safety Standards for Infant Swings,
Docket No. CPSC-2012-0011

Submitted by: Nila Bala, Yale Law School
3/25/12

In response to Section L, whether the proposed warning label is sufficient, I have two suggestions:

Strengthen the phrasing of the warning label

The phrase “use only in most reclined seat position until infant can hold head up unassisted” sounds like a recommendation, and does not convey the serious consequence of disobeying the recommendation. Perhaps a statement like, “for infants who cannot hold up their head unassisted, there is a serious risk of death *unless* swing is used in most reclined position,” would better convey the consequences involved. I would also include two pictures explaining the “DO” and the “DON’T” for children under three months to make it more clear what the reclined seat position looks like, as well as include the warning in multiple languages (at minimum Spanish). For example:



RECLINED—correct position
for young infant



Incorrect position

Consider clear warnings for other causes of death

My second suggestion has to do with the category of deaths that are classified under “unreasonable product misuse,” for example placing two children in a swing meant for one child, or failing to use the restraint system. From the chart it appears a not-significant number of deaths are created from these causes. In the same location where warnings regarding slump-death are located, I would also advise the agency to include these warnings, again with pictures.

CPSC-2012-0011-0007

PUBLIC SUBMISSION

As of: 4/11/12 11:03 AM Tracking No. 80fe0c4f Comments Due: April 25, 2012

Docket: [CPSC-2012-0011](#)
Safety Standard for Infant Swings

Comment On: [CPSC-2012-0011-0001](#)
Safety Standard for Infant Swings

Document: [CPSC-2012-0011-0007](#)
Comment from Laura Cole

Submitter Information

Name: Laura Cole

General Comment

Please see attached comment.

Attachments

Comment on CPSC-2012-0011

Office of the Secretary
Consumer Product Safety Commission
Room 820
4330 East West Highway
Bethesda, MD 20814

Re: Docket No. CPSC-2012-0011

March 25, 2012

Dear Sir or Madam:

I am a third-year student at Yale Law School. I write to recommend additional labeling requirements intended to prevent overuse and misuse of infant swings.

Warning against the Use of Infant Swings for Routine Sleep

The American Academy of Pediatrics has issued a number of recommendations intended to reduce the incidence of Sudden Infant Death Syndrome (SIDS), including the recommendation that sitting devices such as car seats and infant swings should not be used for routine sleep at home.¹ These recommendations have been endorsed by several agencies within the Department of Health and Human Services.²

The warning “never leave an infant unattended in a swing” may be insufficient to convey this risk because caregivers may believe the swing is an appropriate sleeping environment for the infant as long as an adult remains present. Therefore, an additional warning such as “do not use the swing for routine sleep” should be required.

Warning against Overuse of Infant Swings

The overuse of infant swings and other sitting devices, such as car seats, carriers, and strollers, raises two health and development concerns.

First, they contribute to a flattening of the back of the head called positional or deformational plagiocephaly,³ caused by the great deal of time infants spend in a supine or

¹ Task Force on Sudden Infant Death Syndrome, *SIDS and Other Sleep-Related Infant Deaths: Expansion of Recommendations for a Safe Infant Sleeping Environment*, 128:5 PEDIATRICS e1341, e1349 (November 1, 2011), published electronically ahead of print October 17, 2011), available at <http://pediatrics.aappublications.org/content/128/5/e1341>.

² Press Release, Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), National Institutes of Health, HHS agencies express support for infant safe sleep recommendations (October 18, 2011), available at <http://www.nichd.nih.gov/news/releases/101811-infant-safe-sleep-recommendations.cfm>.

³ See, e.g., Timothy R. Littlefield, et. al., *Car Seats, Infant Carriers, and Swings: Their Role in Deformational Plagiocephaly*, 15 JOURNAL OF PROSTHETICS AND ORTHOTICS 102 (2003), available at http://journals.lww.com/jpojournal/Fulltext/2003/07000/Car_Seats,_Infant_Carriers,_and_Swings_Their_Role.10.a.SDX.

reclined position.⁴ While this condition can generally be resolved with noninvasive measures, medical experts recommend limiting the use of sitting devices as a means of preventing or treating this condition.⁵

Second, infants require time on their stomachs while supervised and awake in order to develop early motor skills. The overuse of sitting devices contributes to developmental delays resulting from a lack of this “tummy time.”⁶

Because parents may not be aware of these risks, the labeling should also contain a warning such as “Limit the amount of time your baby spends in the swing and other infant sitting devices, such as car seats and carriers.”

Regards,

Laura Cole

⁴ Experts continue to emphasize the importance of placing infants on their backs to sleep in order to prevent SIDS, a more serious health concern. However, they also recommend ensuring that infants spend time in other positions while awake. See NICHHD, Positional Plagiocephaly, http://www.nichd.nih.gov/health/topics/positional_plagiocephaly.cfm (last visited March 23, 2012).

⁵ See NICHHD, Positional Plagiocephaly, http://www.nichd.nih.gov/health/topics/positional_plagiocephaly.cfm (last visited March 23, 2012); American Physical Therapy Association, Section on Pediatrics, Deformational Plagiocephaly & Cranial Remolding in Infants, at 3, <http://pediatricapta.org/consumer-patient-information/pdfs/Plagiocephaly.pdf> (last visited March 25, 2012).

⁶ Press Release, American Physical Therapy Association, Lack of “Tummy Time” Leads to Motor Delays in Infants, PTs Say (August 6, 2008), available at <http://www.apta.org/Media/Releases/Consumer/2008/8/6/>.

CPSC-2012-0011-0008

PUBLIC SUBMISSION

As of: 4/11/12 10:19 AM Tracking No. 80fe0e5a Comments Due: April 25, 2012
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Docket: [CPSC-2012-0011](#)
Safety Standard for Infant Swings

Comment On: [CPSC-2012-0011-0001](#)
Safety Standard for Infant Swings

Document: [CPSC-2012-0011-0008](#)
Comment from Laura Barna

Submitter Information

Name: Laura Barna

General Comment

See attached file(s)

Attachments

Safety Standards for Infant Swings

This comment is on Safety Standards for Infant Swings (ID: CPSC-2012-0011-0001) concerning section E 3 on the swing restraints. The CPSC has reported that 33% of all injuries reported in conjunction with infant swings are concerning the restraint system – either restraint failure or inadequate design. There have been injuries and deaths when infants were able to wiggle out of the proper restraint positions and have become tangled in the straps or have had their head wedged and have suffered positional asphyxiation. There also need to be a better warning on the label. It needs to be strongly worded to attract more attention such as “to avoid risk of serious injury to infants who are not able to lift their head” restraints need to be carefully secured to ensure infant cannot slip through straps. There also needs to be “DO NOT PLACE INFANT IN SWING WITHOUT SECURING RESTRAINTS”. This seems like an obvious rule but there are many injuries from them falling out because they were not strapped in at all. With better strap design configurations and diagrams showing the proper positioning, we can avoid these injuries and deaths.

CPSC-2012-0011-0009

PUBLIC SUBMISSION

As of: 4/11/12 11:07 AM Tracking No. 80fe114d Comments Due: April 25, 2012
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Docket: [CPSC-2012-0011](#)
Safety Standard for Infant Swings

Comment On: [CPSC-2012-0011-0001](#)
Safety Standard for Infant Swings

Document: [CPSC-2012-0011-0009](#)
Comment from Sinéad Hunt

Submitter Information

Name: Sinéad Hunt
Organization: Yale Law School

General Comment

Consumer Product Safety Commission
CPSC-2012-0011

Slump Over Deaths

Section (E)(2)(b) states, “there is no engineering solution . . . [to] adequately address slump-over deaths.” The CPSC should revise the current standard to state that infants who cannot hold their head up should only be placed in cradle swings, which allow an infant to lie completely flat.

In addition, the warning statement contained in section 8.3.1(4) of ASTM F 2088-11b is insufficient. A seat back angle of 50° is not a “safe” standard for infants with inadequate head control when there is no engineering solution to solve slump-over deaths. Instead, a warning highlighting the risk of death for infants with inadequate head control should be present on all infant swings that do not lie flat, not merely swings with a seat back angle greater than 50°. This includes swings without an adjustable seat recline.

Seat Deflection Hazards

Section (E)(5)(b) notes that single-arm swings may be more prone to deflection. Swings supported by a single arm should include an additional warning stating that single-arm swings are associated with a higher risk of deflection that could lead to serious injury to infants.

Section (E)(5)(d) proposes a new static load performance requirement and test method. However, this does not account for the potential for increased risk of deflection with prolonged use of the swing. In addition to this test, the CPSC should include a second test to account for the potential for increased deflection with continued use of the infant swing. For example, after the initial static

CPSC-2012-0011-0009

load test, the infant swing should be operated for a significant amount of time (e.g. several hours) with a weight equal to or greater than the maximum allowable infant weight. Next, the initial static load test should be repeated to see if the change in vertical deflection is greater than four inches. These tests would more accurately account for deflection resulting from continued usage.

CPSC-2012-0011-0010

PUBLIC SUBMISSION

As of: 4/11/12 10:30 AM Tracking No. 80fe0eaf Comments Due: April 25, 2012
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Docket: [CPSC-2012-0011](#)
Safety Standard for Infant Swings

Comment On: [CPSC-2012-0011-0001](#)
Safety Standard for Infant Swings

Document: [CPSC-2012-0011-0010](#)
Comment from Kevin Chen

Submitter Information

Name: Kevin Chen

General Comment

Please find comment attached as uploaded file.

Attachments

Comment on CPSC 2012 011

March 26, 2012

Subject: Docket No. CPSC-2012-001, Proposed Rule Change Regarding Safety Standards for Infant Swings

This comment is in response to the proposed rule's attempt to prevent slump-over deaths in reclining infant swings having an adjustable seat back angle greater than 50 degrees. The proposed rule would require such infant swings to bear the following warning label: "Use only in most reclined seat position until infant can hold head up unassisted." While this label offers some guidance, in some circumstances it may be unclear or difficult to determine what "the most reclined seat position" is in a particular swing. Given the complex designs of some swings, a parent may still accidentally place an infant in a dangerous position even after reading this warning label.

It is preferable to require **all reclining swings** to bear a label instructing parents not to use a reclining swing for an infant that cannot hold its head up unassisted. While there are positions in these swings that would allow such infants to rest safely, a label that unequivocally instructs parents not to use a reclining swing for such infants would eliminate any possible confusion over the safe reclining position.

The warning label ought to appear not only on the swing device itself, but also on the product packing. This will ensure that consumers are aware of the safety risk before they purchase the product. The label should also indicate that infants are at risk of injury when they are younger than three months of age. This information is extremely helpful to parents who may be unsure of whether their infant is at risk.

The label would read like the following: "Do not place in this swing an infant who cannot hold head up unassisted or is less than three months in age."

In conclusion, such a label is preferable to the proposed warning label because it eliminates confusion regarding the safe positions of reclining swings by instructing parents to avoid reclining swings entirely until their infant is capable of resting in such a swing safely.

CPSC-2012-0011-0011

PUBLIC SUBMISSION

As of: 4/11/12 10:34 AM Tracking No. 80fe117e Comments Due: April 25, 2012
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Docket: [CPSC-2012-0011](#)
Safety Standard for Infant Swings

Comment On: [CPSC-2012-0011-0001](#)
Safety Standard for Infant Swings

Document: [CPSC-2012-0011-0011](#)
Comment from Giselle Barcia

Submitter Information

Name: Giselle Barcia

General Comment

See attached file(s)

Attachments

G. Barcia Comment on CPSC Proposed Rulemaking

March 25, 2012

Giselle Barcia
Yale Law School
127 Wall Street
New Haven, CT 06511

Office of the Secretary
Consumer Product Safety Commission, Room 820
4330 East West Highway
Bethesda, MD 20814
Attn: Celestine T. Kiss, Project Manager

Re: Comment on Docket No. CPSC-2012-0011
Consumer Product Safety Commission—Safety Standard for Infant Swings

Dear Ms. Kiss and To Whom It May Concern:

The Consumer Product Safety Commission (CPSC) proposes to change the safety standard for infant swings. The current voluntary industry standard tests infant swings by dropping a twenty-five pound weight onto the swing seat fifty times.¹ The CPSC proposed rule requires the tester to use a seventy-five pound weight and to drop it five hundred times on the swing seat.² This comment questions the new testing standard's predictive ability for "seat deflection,"³ evaluates each of the test's components—weight, repetition, and process—and exposes potentially flawed assumptions in the test design.

The CPSC should justify the new testing weight of seventy-five pounds. Infant swings are intended for use "from birth until a child is able to sit up unassisted."⁴ The American Academy of Pediatrics sets that skill of infant development at the four-to-seven-month age range.⁵ At eight months, a baby typically weighs between seventeen and twenty-two pounds.⁶ But why, then, does the new testing standard use seventy-five pounds, more than fifty pounds above the heaviest weights of the eight-month infant? The CPSC should offer a reasonable justification that it is testing an infant swing intended for the weight of a much older child. Otherwise, it is excluding potentially valid products from the infant swing market: those that could sustain the test for weights between twenty-five and seventy-five pounds.

The number of times the dropping test is repeated—five hundred—could arguably be increased. The prospect that an infant should only use the swing until eight months of age suggests the swing could sustain nearly 250 days of use. Repeating the test at least five hundred times seems appropriate, as parents might plausibly use the swing two or more times a day. But

¹ Safety Standard for Infant Swings, 77 Fed. Reg. 7011, 7014 (proposed Feb. 10, 2012).

² *Id.*

³ *Id.* at 7016 (requesting, in particular, comments on this aspect of the proposed rulemaking).

⁴ *Id.* at 7012 (quoting ASTM F 2088-11b).

⁵ See AM. ACAD. PEDIATRICS, *Ages and Stages: Baby: 0-7 Months*, <http://www.healthychildren.org/english/ages-stages/baby/Pages/default.aspx> (last visited Mar. 25, 2012).

⁶ See AM. ACAD. PEDIATRICS, *Physical Appearance and Growth: 8-12 Months*, <http://www.healthychildren.org/English/ages-stages/baby/pages/Physical-Appearance-and-Growth-8-to-12-Months.aspx> (last visited Mar. 25, 2012).

they might keep the swing for years later for their next baby. The predictive accuracy of the number of test cycles necessary might be improved with a consumer survey, which could ask parents how many times a day they put their baby in the swing and whether they used it for one or more babies.

Last, it is unclear why the test involves dropping. It seems unreasonable to expect parents to “drop” rather than “place,” their infant in the swing. The force of a drop, especially with a weight of seventy-five pounds, repeated five hundred times, could weaken the infant swing at an unreasonable and unrepresentative rate. Rather, the test should account for duration. The CPSC should specify whether the new test requires keeping the weight in the swing for a certain period of time. The predictive ability of the testing procedure might be improved with a consumer survey, which could ask parents how long they leave their infant in the swing during each use.

Respectfully submitted on March 25, 2012 for the Safety Standards for Infant Swings Docket No. CPSC-2012-0011 by:

Giselle Barcia
Yale Law School
127 Wall Street
New Haven, CT 06511

CPSC-2012-0011-0012

PUBLIC SUBMISSION

As of: 4/11/12 10:32 AM Tracking No. 80fe1548 Comments Due: April 25, 2012
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Docket: [CPSC-2012-0011](#)
Safety Standard for Infant Swings

Comment On: [CPSC-2012-0011-0001](#)
Safety Standard for Infant Swings

Document: [CPSC-2012-0011-0012](#)
Comment from Benjmain Brunner

Submitter Information

Name: Benjmain Brunner

General Comment

See attached file(s)

Attachments

Comment

In promulgating safety standards for durable infant or toddler products pursuant to the Consumer Product Safety Improvement Act of 2008, the Consumer Product Safety Commission has attempted to strengthen where necessary the voluntary standards already in existence for infant swings. In some cases the commission has fallen short of its mandate, and in others it has failed to address a fundamental issue with the previous voluntary standards.

One issue with the pre-existing voluntary standards unaddressed by the new regulation is the sweeping definition that places all infant swings in the same category for children up to the age of five. Young children are incredibly fast developing and immense physiological changes occur in mere months. Safety could be greatly improved if the product were separated into two separate categories, or if the maximum age were lowered. The swing is designed for children that cannot generate the power sufficient to hold up their own body weight, however by listing such a wide range of acceptable ages the commission implicitly condones use beyond the original intent. Such a sweeping range incorporates children who are unable to hold their heads up and children who have already begun to walk. It is quite intuitive that such varied stages of development require equally varied safety standards. While the intended use of the product may be clear to the commission, it is very likely that many parents use the product for a wide range of purposes and therefore effectively circumvent the safety standards by allowing their children to use the swing when they may be too strong or physically developed to be contained by the restraints. Considering many of the injuries associated with the product occur in circumstances where the user has sufficient strength to push out of the safety restraints, more should be done to ensure that the product is used only by children whose physiological development is in accordance with the designers original intent. By creating two separate classes of the same product, the commission could refocus safety standards to fit the strength and body shape of the youngest and oldest users concurrently.

Moreover, although the commission determines that there is no engineering solution for slump-over deaths, the mandated warning contains confusing and non-illustrative language. When a risk of injury or death is so clearly understood but unprotected against beyond user caution, warnings should make explicit the risk they are protecting against to provide proper context to parents uncertain why such a safety standard is necessary. All product injuries are not equal, and the large proportion of the relevant fatalities and injuries that occur in this context proves that the commission should be pro-active in putting the public on notice of the severity of the risk. Perhaps the commission should also consider completely barring use by children unable to hold their own heads up, thereby completely eliminating the risk of slump-over fatalities.

CPSC-2012-0011-0013

PUBLIC SUBMISSION

As of: 4/11/12 10:36 AM Tracking No. 80fe158c Comments Due: April 25, 2012
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Docket: [CPSC-2012-0011](#)
Safety Standard for Infant Swings

Comment On: [CPSC-2012-0011-0001](#)
Safety Standard for Infant Swings

Document: [CPSC-2012-0011-0013](#)
Comment from Nicholas McLean

Submitter Information

Name: Nicholas McLean

General Comment

See attached file(s)

Attachments

McLean_comment_March_26

Secretary
Consumer Product Safety Commission

Mr. Secretary:

The following responds to the request for comments regarding the Proposed Safety Standard for Infant Swings (CPSC Docket No. CPSC-2012-0011). Specifically, this letter focuses on whether the proposed warning statement “contained in section 8.3.1(4) of ASTM F 2088-11b . . . is sufficient to warn caregivers of the risk of slumpover deaths.”

In light of (1) the slumpover death risk associated with infant swings, (2) the clear consumer-protection purposes of The Consumer Product Safety Act (“CPSA”) and The Consumer Product Safety Improvement Act of 2008 (“CPSIA”)¹ and (3) the widely-accepted conclusions of the substantial academic literature on consumer warning efficacy and salience, I respectfully submit that the proposed warning is **insufficient**.

Synthesizing the large extant literature on this issue in the fields of psychology, behavioral economics, and ergonomics, a leading scholar suggests that warning signs should include, *at a minimum*, the following: (1) “a signal word such as ‘Danger’ and ‘Caution,’” (2) “a description of the hazard,” (3) “a description of the consequences that could occur if the person fails to obey the warning’s directions,” and (4) a discussion of the “the specific actions that should or should not be done.”²

A clear warning is particularly important in the case of a product—in this case, an infant swing—that most consumers will regard as familiar and not inherently dangerous: one study finds that “when consumers are familiar with a product, they are less likely to notice [a] warning.”³ Likewise, another study concludes that, in cases of low-likelihood, high-severity injury, a severely-worded warning emphasizing the potential consequences of noncompliance is significantly more likely to result in warning instruction compliance.⁴

Thus, the following changes to the slumpover warning sign are suggested. *First*, the warning should incorporate a clear signal word. *Second*, the warning should discuss noncompliance consequences. *Third*, the language should be clarified.

Thus, the Commission should consider revising the current proposed warning language (“Use only in most reclined seat position until infant can hold head up unassisted.”) to the following:

WARNING: Young infants (particularly those aged six months or less) may require assistance to hold their heads up. If your infant cannot hold his or her head up unassisted, you must use this product only in the most reclined seat position. Failure to comply may result in infant death.

Thank you for your consideration.

Sincerely,

Nicholas M. McLean

¹ See, e.g., *Natural Res. Def. Council, Inc. v. U.S. Consumer Prod. Safety Comm’n*, 597 F. Supp. 2d 370, 389 (S.D.N.Y. 2009) (discussing statutory purposes of CPSA and CPSIA).

² Michael S. Wogalter, *Factors Influencing the Effectiveness of Warnings*, in *VISUAL INFORMATION FOR EVERYDAY USE: DESIGN AND RESEARCH PERSPECTIVES* (Harms Zwaga et al eds., 1998) (emphasis added).

³ Jennifer J. Argo & Kelley J. Main, *Meta-Analyses of the Effectiveness of Warning Labels*, 23 J. PUB. POL’Y & MARKETING 193, 202 (2004).

⁴ Michael S. Wogalter & Todd Barlow, *Injury Severity and Likelihood in Warnings*, in *PROCEEDINGS OF THE HUMAN FACTORS SOCIETY 34TH ANNUAL MEETING* 580 (1990).

CPSC-2012-0011-0014

PUBLIC SUBMISSION

As of: 4/11/12 11:15 AM Tracking No. 80fe1649 Comments Due: April 25, 2012
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Docket: [CPSC-2012-0011](#)
Safety Standard for Infant Swings

Comment On: [CPSC-2012-0011-0001](#)
Safety Standard for Infant Swings

Document: [CPSC-2012-0011-0014](#)
Comment from Kathryn Cahoy

Submitter Information

Name: Kathryn Cahoy

General Comment

The Consumer Product Safety Commission (CPSC) has correctly identified the danger of seat deflection in infant swings. In response, proposed section 6.1.2.1 would require a new static load test. However, CPSC does not explain why a weight of 75 pounds should be used for the static load test or why four inches is the acceptable amount of seat deflection. Nowhere in the rulemaking does CPSC adequately justify why this four-inch limit, rather than a three- or five-inch standard, would protect children. CPSC should explain the values it chose for the test.

CPSC can use its proposed changes to section 7.2.1.3 as a guide. This section currently requires manufacturers to drop a twenty-five-pound weight into the seat 50 times. However, CPSC conducted studies and observed that the worst swings did not begin to show signs of weakness until 500 drops were made. CPSC now proposes that the drop test be increased from 50 to 500 drops. In contrast, CPSC has not presented any data on the new static load test and has given no reason why the limit was set at four inches.

Section 7.2.1.3 should also serve as a warning to CPSC of the danger of setting an arbitrary value. The current standard of 50 drops has allowed companies to receive certification without actually ensuring that they protect children's safety. Many children were injured before CPSC realized it took nearly ten times as many drops to identify design failures.

CPSC should learn from this disparity and avoid setting an arbitrary value for the static load test. Currently, the agency has presented no data for the new seat deflection test and has given no reason why the limit was set at four inches. The proposed test is in danger of being arbitrary and capricious, and worse, infants may continue to be injured and killed.

Attachments

Comment

Kathryn Cahoy
New Haven, Connecticut
March 26, 2012

Agency: Consumer Product Safety Commission
Docket Number: CPSC-2012-0011
Title: Safety Standard for Infant Swings

The Consumer Product Safety Commission (CPSC) has correctly identified the danger of seat deflection in infant swings. In response, proposed section 6.1.2.1 would require a new static load test. However, CPSC does not explain why a weight of 75 pounds should be used for the static load test or why four inches is the acceptable amount of seat deflection. Nowhere in the rulemaking does CPSC adequately justify why this four-inch limit, rather than a three- or five-inch standard, would protect children. CPSC should explain the values it chose for the test.

CPSC can use its proposed changes to section 7.2.1.3 as a guide. This section currently requires manufacturers to drop a twenty-five-pound weight into the seat 50 times. However, CPSC conducted studies and observed that the worst swings did not begin to show signs of weakness until 500 drops were made. CPSC now proposes that the drop test be increased from 50 to 500 drops. In contrast, CPSC has not presented any data on the new static load test and has given no reason why the limit was set at four inches.

Section 7.2.1.3 should also serve as a warning to CPSC of the danger of setting an arbitrary value. The current standard of 50 drops has allowed companies to receive certification without actually ensuring that they protect children's safety. Many children were injured before CPSC realized it took nearly *ten times* as many drops to identify design failures.

CPSC should learn from this disparity and avoid setting an arbitrary value for the static load test. Currently, the agency has presented no data for the new seat deflection test and has given no reason why the limit was set at four inches. The proposed test is in danger of being arbitrary and capricious, and worse, infants may continue to be injured and killed.

CPSC-2012-0011-0015

PUBLIC SUBMISSION

As of: 4/11/12 10:38 AM Tracking No. 80fe16d1 Comments Due: April 25, 2012
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Docket: [CPSC-2012-0011](#)
Safety Standard for Infant Swings

Comment On: [CPSC-2012-0011-0001](#)
Safety Standard for Infant Swings

Document: [CPSC-2012-0011-0015](#)
Comment from Tasha Manoranjan

Submitter Information

Name: Tasha Manoranjan

General Comment

Significance of Regulation

This regulation from the consumer Products Safety Commission is very important, given the fact that only 5 of the 10 firms producing infant swings have been certified by the JPMA.

Recommendation Regarding "Slumping Over" Fatalities

The largest cause of infant fatalities with infant swings is the infant "slumping over", resulting in positional asphyxia. This is addressed in the ASTM voluntary standard at Section 8.3.1(4).

I would like to suggest a change to the wording on the warning on the swing. New parents might expect the largest danger of the infant swing to be that the child could not be restrained properly, and then suffer injury from falling out or swinging improperly. However, this is not actually the cause of the most swing-caused infant fatalities. Thus, I think the warning regarding the importance of keeping the infant as reclined as possible until the infant can hold his or her head up unassisted must emphasize this particular hazard. I would suggest the following modification in the text of the warning to be displayed on the swing:

"To prevent death, asphyxiation or injury, use only in most reclined seat position until infant can hold head up unassisted. Do not leave infant unattended."

I believe this stronger language will more effectively communicate the danger created by failing to sufficiently recline the swing when an infant is unable to hold his or her head up.

CPSC-2012-0011-0016

PUBLIC SUBMISSION

As of: 4/11/12 10:40 AM Tracking No. 80fe139d Comments Due: April 25, 2012

Docket: [CPSC-2012-0011](#)
Safety Standard for Infant Swings

Comment On: [CPSC-2012-0011-0001](#)
Safety Standard for Infant Swings

Document: [CPSC-2012-0011-0016](#)
Comment from Crystal Robles

Submitter Information

Name: Crystal Robles

General Comment

This comment concerns the proposed regulation regarding the Safety Standard for Infant Swings. Section L of the Notice of Proposed Rulemaking requests comments regarding the warning label designed to prevent slump over deaths. Section 8.3.1(4) of ASTM F 2088-11b requires a warning label on all infant swings that have an adjustable seat recline with a seat back angle greater than 50 degrees: "Use only in most reclined seat position until infant can hold head up unassisted." While such a label will most likely decrease the number of infant fatalities, more can be done that would likely further reduce the number of fatalities and injuries associated with the positional asphyxiation of infants in swings.

First, this label should be required to appear on all non-cradle infant swings as there is a risk of positional asphyxiation whenever an infant is in a seated position, not just when the seat back angle is greater than 50 degrees. See "Infant Sleeping Position," Healthy Child Care Iowa, available at www.idph.state.ia.us/hcci/common/pdf/sleep_positioning.pdf. Second, the label should include a specific warning against allowing infants to sleep in the swing. Studies show that the risk of positional asphyxia rises when infants are allowed to sleep in seated positions and in devices not intended for infant sleep. Even where the asphyxia does not result in death, an infant who has slumped over in his infant seat could suffer brain cell damage resulting from the decreased oxygen flow. See Id.; "Tips to Position Babies to Avoid Positional Asphyxia," St. Christopher's Hospital, available at www.stchristophershospital.com/newsroom/highlights/67.

In sum, the language of the warning should be revised as follows: "Use only in most reclined seat position until infant can hold head up unassisted. Most infants less than one year of age have difficulty holding their heads up. Do not allow infants to sleep in swing to decrease risk of asphyxiation." This label should appear on all

CPSC-2012-0011-0017

PUBLIC SUBMISSION

As of: 4/11/12 10:41 AM Tracking No. 80fe17b0 Comments Due: April 25, 2012
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Docket: [CPSC-2012-0011](#)
Safety Standard for Infant Swings

Comment On: [CPSC-2012-0011-0001](#)
Safety Standard for Infant Swings

Document: [CPSC-2012-0011-0017](#)
Comment from Brandie Mask

Submitter Information

Name: Brandie Mask

General Comment

See attached file(s)

Attachments

BMaskComment

The proposed rule addresses additional and more stringent safety testing requirements on manufacturers and importers of infant swings. I argue that the proposed requirements regarding electrical and battery testing are unnecessary and would be negligible in impact and unjustified in potential costs.

The current requirement under ASTM F 2088-11b contains standards that regulate battery compartments. ASTM 2088-11b also contains a requirement prohibiting nonrechargeable batteries from being recharged with a/c power and requires all swings that use more than one battery to contain warnings. There are no other requirements regarding the design and operation of the electrical components of swings.

The economic cost related to the proposed change in testing, specifically testing of the safety of battery and a/c power functions, is not justified by the proven outcomes of battery and a/c power related injuries in toddler swings. The current voluntary standard has resulted in only 1% of the injuries over a period of more than nine years being related to electrical or battery power functions. According to the Regulatory Flexibility Act assessment, an industry source stated that it is already common practice for manufacturers to test electrical function to make sure the device will not overheat. Imposing a different standard will lead to unnecessary costs to manufacturers that are unlikely to decrease the rate at which electrical power malfunctions occur on these devices. Current tests in use are sufficient given the low number of reported injuries.

Furthermore there is not sufficient evidence that the incidents categorized as “electrical or battery” related are associated with electrical issues, which might be prevented by additional testing requirements, or are associated with battery related issues, which are already regulated. The proposed requirements may have no additional impact on battery related incidents, which may encompass all electrical and battery related problems, thus negating the necessity of the cost of the additional and more stringent requirements.

CPSC-2012-0011-0018

PUBLIC SUBMISSION

As of: 4/11/12 11:20 AM Tracking No. 80fe40e9 Comments Due: April 25, 2012
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Docket: [CPSC-2012-0011](#)
Safety Standard for Infant Swings

Comment On: [CPSC-2012-0011-0001](#)
Safety Standard for Infant Swings

Document: [CPSC-2012-0011-0018](#)
Comment from Maggie Tran

Submitter Information

Name: Maggie Tran

General Comment

See attached file(s)

Attachments

Public Comment on Infant Swings

Maggie Tran
CUNY School of Law
65-21 Main Street
Flushing, NY 11367
maggie.tran@live.law.cuny.edu

March 29, 2012

VIA ELECTRONIC SUBMISSION: www.regulations.gov

Office of the Secretary
Consumer Product Safety Commission
4330 East West Highway, Room 208
Bethesda, MD 20814

Re: CPC's Proposed Rule – Safety Standard for Infant Swings; Docket No. CPSC-2012-0011

This is a comment on the Consumer Product Safety Commission's proposed rule on the safety standard for infant swings. I am a law student at the City University of New York School of Law. For the most part, the CPSC's proposed rule should be adopted. Enacting more stringent standards for the safety of infant swings, where the Commission's findings call for it, is necessary in ensuring the safety of infants. As a potential parent and consumer of infant swings, I am interested in this proposed rule for regulating the safety of this product. I am particularly concerned about the standard of regulation addressing slump-over deaths.

According to the CPSC, the ASTM's standard states: "Use only in most reclined seat position until infant can hold head up unassisted." This language does not adequately warn parents about the grave danger of placing an infant that cannot hold his head up unassisted in a swing that is not fully reclined. There must be language stating that there is risk of serious injury or death. This amendment is needed because the CPSC cannot find a way to eliminate this hazard. Changing the language of the warning label is the best alternative.

Moreover, it is noted in the CPSC's report that infants that lack the muscle to hold up their neck are usually between two weeks to three months old. The warning label should explicitly mention that the hazard is even more prominent within this age group. This will provide more caution to parents or caregivers of infants in this age group. Thus, the warning label should state "To avoid risk of serious injury or death, use only in most reclined seat position until infant is at least three months old and is able to hold head up unassisted."

For swings that do not have an adjustable seat back angle greater than 50 degrees, there should be a warning label that states: "To avoid serious injury or death, do not place infant in swing that has a seat back angle of 50 degrees, unless infant is at least three months old and is able to hold head unassisted." However, parents may be unable to assess whether a swing has a 50 degrees seat back angle. Therefore, for swings that do not have an adjustable seat back or do not have a seat back angle greater than 50 degrees, the affixed label on the swing should explicitly prohibit the use of the swing by infants younger than three months. The label should state: "Do not use unless infant is at least three months old and may and is able to hold head up

unassisted” or “Not intended for use by infants under three months old. May cause serious injury or death.”

This amendment to the warning label coupled with the proposed changes CPSC makes will hopefully result in the reduction of incidents resulting from infant swings. There have been two public comments to this date that address the issue of the warning label and no comments submitted by manufactures or small businesses. Slump-over deaths are serious and this issue should not be lightly addressed. If manufacturers do not comment on the adverse impact of more stringent standards, then more stringent standards should be adopted for the sake of the infants’ safety.

I believe even one fatality resulting from inadequate safety requirements of infant swings is a devastating one. It causes physical harm to babies and emotional harm to parents and caretakers. *Cf. McDuffie v. Graco Children's Products, Inc.*, No. 95C5384, 1996 U.S. Dist. WEST 197499 (N.D. Ill. Apr. 19, 2006); *Tober v. Graco Children's Products*, No. 1:02CV1682LJMWTL, 2004 U.S. Dist. WEST 1085178 (S.D. Ind. Mar. 4, 2004). As the CPSC may know, it has announced several recalls of swings manufactured by Graco. *McDuffie* addressed an allegation of a design flaw in a cradle/swing manufactured by Graco that caused the death of McDuffie’s three-week old son. Similarly, *Tober*, involved the death of an eight-month old child that was strangled by the shoulder harness strap of the “Lil’ Rocker” manufactured by Graco. Injuries resulting from poor swing design or swing failures are inexcusable. It is even more inexcusable when a fatality occurs.

Therefore, with regard to the proposed standard addressing slump-over deaths, the rule should be amended. With respect to the other portions of the proposed rule, the more stringent requirements should be adopted. Even if the proposed rule may impact small businesses, the ASTM voluntary standard should not be adopted without requiring more stringent standards.

PUBLIC SUBMISSION

As of: 5/21/12 10:48 AM Tracking No. 80fecbda Comments Due: April 25, 2012
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Docket: [CPSC-2012-0011](#)
Safety Standard for Infant Swings

Comment On: [CPSC-2012-0011-0001](#)
Safety Standard for Infant Swings

Document: [CPSC-2012-0011-0019](#)
Comment from Matthew Overpeck

Submitter Information

Name: Matthew Overpeck

General Comment

See attached file(s)

Attachments

Matthew Overpeck - Public Comment

To: United States Consumer Product Safety Commission
Comment Submitted via Federal eRulemaking Portal at www.regulations.gov
Docket #: CPSC-2012-0011
From: Matthew Overpeck
Date: March 29, 2012
Re: Public Comment on Proposed Safety Standards for Infant Swings

After reviewing the proposed regulations for infant swings, I would like to support the proposal and make a few recommendations for modifications to the rule. I am a law student at the City University of New York School of Law and I have analyzed a portion of this proposal because of my interest in product liability and consumer safety. This analysis relates to portions of bill concerning creating a standard for infants younger than three months to be placed exclusively in cradle swings, warning label to prevent infant slump-over deaths, and the Commission's flexibility analysis, infant swings.

The Commission should revise the standard such that infants younger than three months should only be allowed to be placed in cradle swings and not any other type of infant swing, thus effectively eliminating the risk of positional asphyxiation in infants. This new standard should be included on its warning label. Such a new standard may stray from the voluntary standard of the warning label, but this alteration is necessary to prevent harm: the new standard would eliminate the risk of positional asphyxiation for infants using swings.

If the Commission decides not to adopt this new standard, it should at least consider altering the warning to be more descriptive of the risks. Presently it is proposed that the warning label on all infant swings state, "Use only in most reclined seat position until infant can hold head up unassisted." The Commission should strongly consider substantially adding more detail to this warning label because such a warning does not properly explain the lethal hazard that is involved. A proper warning would clearly explain to consumers the choking hazard. Selected

language taken from the Juvenile Products Manufacturers Association's webpage can be utilized to better state the warning: "CHOKING HAZARD: an infant younger than three months should not be hunched with chin touching chest while the infant is in the swing." *Tips to Properly Position Babies to Avoid Positional Asphyxia*, Juvenile Products Manufacturers Association (July 30, 2010), <http://www.jpma.org/content/press/news/tips-properly-position-babies-avoid-positional-asphyxia>.

Lastly, the Commission is creating flexibility in the proposed regulations by giving small business manufacturers and small importers six months from the effective date to comply with the new product regulations. This would give time for the companies to make the necessary transitions. However, it was not discussed in the proposal what a product recall will do to the four small manufacturers that are not known to be in compliance with the voluntary standard. Such an analysis should be considered and is probably necessary under the Regulatory Flexibility Act. It is recommended to the Commission to consider extending the effective date to one year to help minimize a possibility of a substantial loss of revenue from the potential product recalls on the small manufacturers and importers.

In conclusion, the commenter recommends that the Commission consider adopting a new standard to state in its warning label that directs infants younger than three months should only be placed in cradle swings or flat-bedded swings. I also suggest improving the warning label to explain the lethal choking hazard for infant swings with reclined seats. The Commission should also consider the effect of a product recall on the small manufacturers that are not known to be in compliance with the voluntary and what a one year effective date could do to prevent substantial loss in revenue. Thank you for considering the recommendations submitted in this comment.

PUBLIC SUBMISSION

As of: 5/21/12 10:50 AM Tracking No. 80fecfce Comments Due: April 25, 2012
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Docket: [CPSC-2012-0011](#)
Safety Standard for Infant Swings

Comment On: [CPSC-2012-0011-0001](#)
Safety Standard for Infant Swings

Document: [CPSC-2012-0011-0020](#)
Comment from Carrie Mohr

Submitter Information

Name: Carrie Mohr
Organization: Denver University Sturm College of Law

General Comment

See attached file(s)

Attachments

Agency Comment

Consumer Products Safety Commission, Safety Standards for Infant Swings.

Docket No. CPSC-2012-0011

Submitted April 10th, 2012 by:
Carrie Mohr
University of Denver Sturm College of Law
cmohr14@.law.du.edu

Because you have determined there to be no engineering solution that would adequately address slump-over deaths, it is essential that parents are adequately warned about the danger of slump-over deaths associated with use of infant swings. The warning statement contained in section 8.3.1(4) of ASTM F 2088-11b which states "Use only in most reclined seat position until infant can hold head up" is insufficient to warn caregivers of the risk of slump-over deaths. A warning statement which explicitly states that failure to use the swing in its most reclined position before the infant is able to hold its head up could result in the infant's death is likely to better reduce the risk of slump-over deaths. Not only would caregivers be aware of how to use the swing safely, but they would also understand potential for dire consequences if the warning is not taken seriously.

A warning explicitly addressing the risk of slump-over deaths is also appropriate on swings that do not have an adjustable seat back. These swings tend to seat the infant at more upright angles, increasing the risk of slump-over death.

Unlike the slump-over death risk, the engineering solutions are available to adequately address the restraint issues described in Table 2 (entitled "Infant Swings Hazard Summary, January 1 2002 through May 18, 2011"). Nevertheless, these solutions as proposed (requiring waist and crotch restraint system and harness or shoulder straps in seats with a back angle of more than 50°) may be irrelevant unless parents are warned about the potential for injury if such restraints are not utilized. For this reason, warnings should also address the risks associated with a caregiver's failure to properly employ the use of restraints while the swing is in use.

CPSC-2012-0011-0021

PUBLIC SUBMISSION

As of: 4/25/12 10:59 AM Tracking No. 80fed845 Comments Due: April 25, 2012
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Docket: [CPSC-2012-0011](#)
Safety Standard for Infant Swings

Comment On: [CPSC-2012-0011-0001](#)
Safety Standard for Infant Swings

Document: [CPSC-2012-0011-0021](#)
Comment from Catherine Santiago

Submitter Information

Name: Catherine Santiago

General Comment

The Consumer Product Safety Commission "CPSC" should implement proposed changes for durable infant or toddler products, especially in regard to adding a consumer-warning label on all infant swings that have an adjustable seat recline.

There have been many deaths related to the hazard referred to as "slump-over" which causes positional asphyxia. Asphyxia is caused by a deficient supply of oxygen, which can ultimately result in death. The notice of the proposed rule mentions infantile death as a result of asphyxia; however, the CPSC should also consider injuries as a result of a deficient supply of oxygen not resulting in death, which remain a grave issue. Lack of oxygen, especially in children predisposed to breathing deficiencies, lung disease, or other medical issues, can affect the heart, muscles, awareness, and cause brain damage.

The warning label stating that the swing should only be used in the recline position until the infant is capable of supporting their head upright unassisted might decrease the number of injuries that result from slump over death. It is possible that some parents assume that the restraints alone are sufficient to hold the infant in a proper and safe position when the chair is not reclined. However, the current proposed amendment only includes a written description for the proper angle to place an infant when the infant is incapable of holding its own head upright; the CPSC should consider visual aids to better serve parents whose primary language is not English, or who are unfamiliar with the measurement as described in degree form.

The cost of proposed changes to small businesses, manufacturers, or firms is quite small compared to the increase safety afforded to infants. Some manufacturers already comply with some or all of the proposed changes.

PUBLIC SUBMISSION

As of: 5/21/12 10:51 AM Tracking No. 80ff1041 Comments Due: April 25, 2012
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Docket: [CPSC-2012-0011](#)
Safety Standard for Infant Swings

Comment On: [CPSC-2012-0011-0001](#)
Safety Standard for Infant Swings

Document: [CPSC-2012-0011-0022](#)
Comment from Matthew Feda

Submitter Information

Name: Matthew Feda

General Comment

See attached file(s)

Attachments

comment

As a new father, I am in favor of more stringent rules regulating infant swings. However, there is one area where I feel the standards set by the Consumer Product Safety Improvement Act do not go far enough to ensure the safety of these products. Five of the fifteen fatalities attributed to infant swings are noted as being slump-over deaths in which the children asphyxiated from being unable to support their heads due to weak neck muscles. But the only warning required in the proposal that addresses the issue simply states, "Use only in most reclined seat position until infant can hold head up unassisted." And the Consumer Product Safety Commission seems to find this warning substantial enough to combat the potential of slump-over deaths. However, I am not convinced. While there may be no structural additions that could prevent these tragedies, certainly the Commission could amend the warning and require something that directly addresses the issue. When purchasing an infant swing, consumers should be made aware of the potential harm such a product could cause. And I find the current warning simply does not go far enough in informing consumers of the potential dangers of slump-over death. A warning that explicitly addresses the problem would lessen the instances of it because consumers will know exactly what can happen when the product is misused.

CPSC-2012-0011-0023

PUBLIC SUBMISSION

As of: 4/26/12 1:22 PM Tracking No. 80ff36db Comments Due: April 25, 2012

Docket: [CPSC-2012-0011](#)
Safety Standard for Infant Swings

Comment On: [CPSC-2012-0011-0001](#)
Safety Standard for Infant Swings

Document: [CPSC-2012-0011-0023](#)
Comment from Marcela Williamson

Submitter Information

Name: Marcela Williamson

General Comment

Infant swings are made for newborn to about 9-12 months depending on weight. This is in and of it itself a hazard. A 2 week old is not developmentally ready for a product a 9 month old uses. Restrictions should be made and manufacturers should produce two separate products: a newborn swing (5-15lbs) & an infant swing (15-25lbs).

Also parents & childcare providers should be advised again allowing infants to sleep in their swings. (keep in mind, many parents & childcare providers have newborns in the swing for hours often through the night.)

Thank you

PUBLIC SUBMISSION

As of: 5/21/12 10:52 AM Tracking No. 80ff81f4 Comments Due: April 25, 2012
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Docket: [CPSC-2012-0011](#)
Safety Standard for Infant Swings

Comment On: [CPSC-2012-0011-0001](#)
Safety Standard for Infant Swings

Document: [CPSC-2012-0011-0024](#)
Comment from Nancy Cowles

Submitter Information

Name: Nancy Cowles
Organization: Kids In Danger, Consumer Federation of America, US PIRG and Consumers Union

General Comment

Attached please find the comments from Kids In Danger, Consumer Federation of America, Consumers Union and US PIRG on the Proposed Rule: Safety Standard for Infant Swings.

Attachments

Consumer Group Comments Infant Swing NPR

Office of the Secretary
Consumer Product Safety Commission
Room 502
4330 East-West Highway
Bethesda, Maryland 20814
Via: www.regulations.gov

**Comments of Kids In Danger, Consumer Federation of America, U.S. Public Interest
Research Group, and Consumers Union
to the U.S. Consumer Product Safety Commission on
“Safety Standard for Infant Swings, Notice of Proposed Rulemaking,”
Docket No. CPSC–2012-0011**

I. Introduction

Kids In Danger (KID), Consumer Federation of America (CFA), U.S. Public Interest Research Group (PIRG), and Consumers Union (CU) submit the following comments to the U.S. Consumer Product Safety Commission (“CPSC” or “Commission”) in the above-referenced matter.¹

Section 104(b) of the Consumer Product Safety Improvement Act of 2008 (“CPSIA”) requires the Commission to promulgate consumer product safety standards for durable infant or toddler products. These standards are to be “substantially the same as” applicable voluntary standards or more stringent than the voluntary standards if the Commission concludes that more stringent requirements would further reduce the risk of injury associated with the product.

In the Notice of Proposed Rulemaking, the Commission proposes safety standards for infant swings which are substantially the same as the voluntary standard developed by ASTM-International, but with modifications that strengthen the standard. Our comments support the strengthening modifications and also include additional changes that we urge the Commission to include in the standard.

II. Background

An infant swing is often one of the first pieces of nursery equipment new parents use, because parents and caregivers find that swings can lull fussy babies into periods of calm or rest. Older babies are often content to sit in a swing for longer periods than they would in a stationary chair or infant carrier. It is the range of sizes and developmental stages that this product must accommodate that make its safety so important. An infant swing must be able to cradle a newborn in a safe position, as well as restrain an older, more active baby. Given the equipment’s near legendary reputation for quieting the fussiest babies, it can also be assumed that it is used by the most sleep-deprived and inexperienced parents. Thus, safety is paramount.

¹ Safety Standard for Infant Swing, Notice of Proposed Rulemaking. Federal Register, Vol. 77, No. 28, 7011 (February 10, 2012).

Infant swings are also used for relatively short time periods for each child compared to other equipment such as strollers and high chairs, and are often stored or shared with other families between children. For this reason, durability, ease of assembly, and intuitive use are imperative.

III. Discussion & Recommendations

Our organizations agree with the Commission that the current ASTM standard, F2088-11b, with the Commission's proposed modifications, will be effective in continuing to reduce the risk of injury and death in infant swings. We support the Commission's proposed modifications, as they will improve testing of these products by making testing more accurate and repeatable. We also urge the Commission to address additional issues in the final rule. Our concerns are outlined in the comments below, along with our responses to the questions posed in the NPR.

A. Slump-Over Deaths and the Standard

CPSC identified at least five deaths attributed to positional asphyxiation caused by a slumped-over position. The current standard and CPSC's proposed standard, however, address this hazard solely with a warning to use swings only in their most reclined position for infants who are unable to hold up their heads. In addition to continuing medical research into positional asphyxiation which occurs with the use of other products as well, such as car seats and slings, there are additional provisions that could be added to the standard to address this hazard.

Babies develop the ability to lift their heads at about one month, and the ability to control their heads while sitting at about four months. Given that the most common use for swings is for fussy babies, it is unrealistic to eliminate the use of swings for babies under the age of four months – the period most identified with fussiness and/or 'colic.' Therefore, it is foreseeable that, even with the warning, parents will continue to use the product for younger babies. Instead of simply addressing this hazard with a warning label, it would be more effective to require swings to feature an adjustment position with an angle of recline *less than 50* degrees to safely accommodate the youngest babies. In addition, the warning label should be reworked to specifically identify the slumped-over position as dangerous – thus warning novice parents of this hazard.

B. Restraint Design and Restraint Failures

In evaluating the need for additional performance standards or testing requirements for restraints, CPSC has disregarded fatalities that have occurred in situations where a restraint was not used. Failing to look into the circumstances of those fatalities is a mistake. Examining these incidents can help determine if the design or performance of the restraint led to the non-use or if the restraint itself, in an unbuckled position, poses additional hazards that might cause death or severe injury. We urge CPSC to reexamine these incidents and see if additional information on making safer restraints is available. Products have been recalled due to restraints which cause additional hazards when not used, including strangulation and entrapment.

C. Support for Other Testing Changes

Our groups strongly support the proposed changes to the existing voluntary standard that will increase the rigor and repeatability of tests in the mandatory standard. We support the additional requirements and the requisite testing to prevent battery overheating and seat deflection – two scenarios prominent in the incident data. We also support the modifications to the current standard to make it more stringent.

In particular, we support increasing the cycles in section 7.2.1 of ASTM 2088-11b from 50 to 500. As we saw with cribs, limited testing cycles does not mimic real life use – allowing products that are inadequate in the field to pass lab tests. Also, as a product that is likely to be used for several babies over a period of years, increasing the number of test cycles makes sense and reflects real world use.

D. Additional Requirements

Because of the constant use/storage/lending use pattern of swings, we recommend that CPSC consider including additional requirements in the standard for infant swings, such as the provisions in the crib standard that seek to reduce hardware loss or misassembly. This could include requiring hardware that doesn't back out or become loose, captive hardware, performance requirements to avoid misassembly, and a method to make sure instructions stay with the product.

In addition, with the reappearance of swings with an AC or electrical power-cord option, we urge CPSC to require any cords to have labeling similar to that proposed in the ASTM voluntary standard for baby monitors. The baby monitor standard includes labeling alerting consumers to the strangulation risk posed by monitor cords. We also urge CPSC to include a provision that requires that a swing on AC power can operate only when the power cord is at least three feet away from the occupant area.

E. Costs to Small Business

In regard to section G.3, *Cost to Small Business*, we urge CPSC to obtain a more accurate number of manufacturers who do not meet the ASTM standard. For instance, CPSC measured compliance only by those who participate in the JPMA certification program. CPSC could also count those manufacturers that sell at major retailers that require ASTM compliance (as do most small retailers). In fact, with just ten firms making or importing swings, CPSC could easily get direct information that would more clearly identify costs.

F. Compliant Product Marking

In addition, we recommend that CPSC consider adding a marking on products that are manufactured after the effective date so that consumers can clearly identify new products that meet the new mandatory standard.

IV. Conclusion

Our organizations strongly support the adoption of the Commission's proposed mandatory standards for infant swings. This standard, strengthened by our additional recommendations and coupled with rigorous and independent third party testing, will provide babies with safer infant swings.

Respectfully submitted,

Nancy A. Cowles
Executive Director
Kids In Danger

Rachel Weintraub
Senior Counsel and Director of Product Safety
Consumer Federation of America

Ioana Rusu
Regulatory Counsel
Consumers Union

Nasima Hossain
Public Health Advocate
U.S. PIRG

PUBLIC SUBMISSION

As of: 5/21/12 10:53 AM Tracking No. 80ffce40 Comments Due: April 25, 2012
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Docket: [CPSC-2012-0011](#)
Safety Standard for Infant Swings

Comment On: [CPSC-2012-0011-0001](#)
Safety Standard for Infant Swings

Document: [CPSC-2012-0011-0025](#)
Comment from Megan Capie

Submitter Information

Name: Megan Capie
Organization: Juvenile Products Manufacturers Association

General Comment

The Juvenile Products Manufacturers Association submits comments per the attached document in response to:

NOTICE OF PROPOSED RULEMAKING (NPR):
CPSIA SECTION 104:
Safety Standard for Infant Swings: 16 CFR Part 1223
CPSC DOCKET Number: CPSC-2012-0011

Attachments

JPMA Swing Comments 4-12



Office of the Secretary
U.S. Consumer Product Safety Commission
4330 East West Highway
Bethesda, MD 20814

**Re: NOTICE OF PROPOSED RULEMAKING (NPR): CPSIA SECTION 104:
Safety Standard for Infant Swings: 16 CFR Part 1223
CPSC DOCKET Number: CPSC-2012-0011**

Dear Mr. Stevenson:

We appreciate the opportunity to comment on the February 10, 2012 Federal Register Notice regarding 16 CFR Part 1223 Safety Standard for Infant Swings (“NPR”). The Consumer Product Safety Commission (“Commission” or “CPSC”) invited comments on 16 CFR Part 1223 pursuant to Section 104 of the Consumer Product Safety Improvement Act (“CPSIA”), which directs the Commission to issue mandatory regulation on durable infant products. In response to the request of the Commission’s staff, the Juvenile Products Manufacturers Association, Inc. (“JPMA”) submits the following comments.

The JPMA is a national trade organization of more than 250 companies in the United States, Canada and Mexico. JPMA exists to advance the interests, growth and well-being of North American prenatal to preschool product manufacturers, importers and distributors marketing under their own brands to consumers. It does so through advocacy, public relations, information sharing, product performance certification and business development assistance conducted with appreciation for the needs of parents, children and retailers. Each year, JPMA sponsors Baby Safety Month in September to educate parents and caregivers on the importance of the safe use and selection of juvenile products.

JPMA hopes that these comments will assist the Commission in effectively implementing regulations in a consistent manner with hazard based requirements under ASTM F 2088-12 consensus; hazard based Safety Standards for Infant Swings. JPMA has previously submitted extensive comments on a variety of CPSIA issues. These comments are providing our views on the proposed requirements of 16 CFR Part 1223. JPMA reserves the right to supplement or amend its comments as appropriate.

Juvenile Products Manufacturers Association, Inc.
15000 Commerce Parkway, Suite C • Mt. Laurel, NJ 08054 • 856.638.0420 • 856.439.0525
E-mail: jpma@ahint.com • Website: www.jpma.org

**General Comments**

JPMA believes that the CPSC should adopt ASTM F2088-12 in its entirety including additional changes addressing an occupant leaning/falling out of a swing that will be in the next version of the ASTM standard, F2088-12a. F2088-12 addresses nearly all of the issues raised in the NPR with wording and figures that have been approved through the full consensus ASTM balloting process. The requirements in the NPR were further refined and published through the ASTM ballot process resulting in a method that organizes the testing procedures in a manner that appropriately establishes a protocol for using a product sample for all tests. Consequently, this will yield clarity in the sequence of the testing requirements and result in cost effective testing avoiding a process that would otherwise be considered overly burdensome, should multiple samples be required for series testing.

Every reference to ASTM F2088-11b from section 1223.2(b) (1) forward left out the F designation of the standard. ASTM 2088-11b is a nonexistent standard when the letter reference is dropped.

Restraint Design and Restraint Failures (1223.3)

The proposed changes to the test requirements and procedure outlined in 1223.3(c) and 1223.3(d) for *Seat Back Angle Measurement* were revised through the ASTM ballot process and have been published in ASTM F 2088-12, section 7.13.

Broken, Detached, or Loose Components

The proposed changes to the *Dynamic Load Test* outlined in 1223.4(d) were revised through the ASTM ballot process and have been published in ASTM F 2088-12, sections 7.3.1.2 and 7.3.1.3.

Seat Design and Seat Failures

The proposal for the *Static Load* performance requirement and test method, 1223.5(d) involves loading the seat with 75 lbs (or 3x the manufacturer's recommended weight) mass, that does not have a specified geometry, and measuring the vertical seat deflection (not to exceed 4 in.). The mass was intended as an overload test only, not a simulation of a child position within the product. It is our contention that this test does not address the root cause of the issue, which is best addressed by the proposed ASTM standard.

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There are new requirements that have been proposed or written to address the incident data. The proposed test requirements and procedure the ASTM swing task group has developed will address seat design and seat failures cited in 1223.2(b) (1)(i) 6.1.2.1 The incident data does not appear to reflect a hazard associated with deflection of the seat structure, but instead with seat position within the arc of travel. The task group is working on a procedure to evaluate seat positioning within the arc of travel using a gage that simulates the CAMI infant dummy without the variations inherent in the CAMI dummies. This gage will also replace the 17.5 lbm 4"x4" hinged 4"x9" plates that do not have weight distribution of a CAMI. The 4" seat deflection in the NPR simply does not address a child leaning out, but the ASTM task group has addressed the concern and their recommendations should be duly recognized and adopted in lieu of the original proposal.

The first requirement, which was added to ASTM F2088 in 2011, requires the use of a 5 point restraint system for swings with seat back angles greater than 50 degrees (see below). The required addition of a shoulder harness will prevent the occupant from pitching or leaning forward in a swing seat. As this is relatively new to the standard, its benefits have not had a chance to be realized or reflected in the incident data, but this requirement will drive down the incidents of the occupant leaning forward in a swing seat.

- 6.5.2 Swings with a seat back angle greater than 50° measured in accordance with 7.13 shall include shoulder straps as part of the restraint system.

There is also a requirement that is currently out for ballot for seat back and seat bottom angles on swings which have removable trays or no trays. This requirement will set max seat back angles for full size and travel swings at 60 degrees and 45 degrees, respectively. This will prevent the occupant from being too upright in the seat. The proposed seat bottom angle is ≥ 30 degrees, which will also serve to prevent the occupant from leaning forward in the seat by keeping their feet elevated. The measurements for the seat angles are taken after placing a hinged plate in the seat that simulates the CAMI infant dummy without the variations inherent in the CAMI dummies. These products will also be required to use a 5 point restraint system. The seat angle requirements in conjunction with the required use of 5 point restraints should address the issue of occupants falling out of swing seats. The vertical deflection test proposed in the CFR does not seem to address the issue or reflect the reported incident data, as well as the existent ASTM standard.

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Electrical or Battery Issues

Section 1223.2(b) (3) (ii) 6.7.5 states that infant swings operated on 120v circuits must meet 16 CFR 1505. This regulation already applies to swings as defined in:

- 1505.1(a)(1) The term “electrically operated toy or other electrically operated article intended for use by children” means any toy, game, or other article designed, labeled, advertised, or otherwise intended for use by children which is intended to be powered by electrical current from nominal 120 volt (110–125 v.) branch circuits.

The typical 120v powered swing falls under the exemption further in the same section:

- This definition does not include components which are powered by circuits of 30 volts r.m.s. (42.4 volts peak) or less, articles designed primarily for use by adults which may be used incidentally by children, or video games.

The child is the occupant in the product, but an adult operates the swing, therefore swings are considered exempt from 16 CFR 1505. This has been the interpretation of third party laboratories for many years. Adding this requirement into the NPR creates confusion and is inconsistent with test protocols currently employed. Swings that are not operated by a child toned not comply with 16 CFR 1505.

Instability

The proposed changes to the test requirements outlined in 1223.9(d) for the *Mobile Attachment Strength Test* was revised through the ASTM ballot process and has been published in ASTM F 2088-12, section 7.12.3. The figure proposed in 1223.9(d) as Figure 8a Mobile Attachment Strength is also part of the ASTM F 2088-12 as figure 9 Mobile Attachment Strength.

We encourage the CPSC to work with all stakeholders to assure an efficient and effective rule is finalized. Consequently we urge the Commission to adopt ASTM F 2088-12 including additional changes addressing an occupant leaning/falling out of a swing that will be in the next version of the ASTM standard, F2088-12a as the appropriate final rule. We note that the latest version of the standard incorporates protocols and existing interpretations so as to avoid confusion in the marketplace and better address concerns raised.

Thank you for the opportunity to comment.

Sincerely,

Juvenile Products Manufacturers Association, Inc.

15000 Commerce Parkway, Suite C • Mt. Laurel, NJ 08054 • 856.638.0420 • 856.439.0525

E-mail: jpma@ahint.com • Website: www.jpma.org

TAB C: Human Factors staff memo

**T
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C**



UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
BETHESDA, MD 20814

MEMORANDUM

DATE: August 16, 2012

TO: Celestine T. Kiss, Project Manager,
Division of Human Factors, Directorate for Engineering Sciences

THROUGH: George A. Borlase, Ph.D., P.E., Associate Executive Director,
Directorate for Engineering Sciences

Robert B. Ochsman, Ph.D., CPE, Director,
Division of Human Factors, Directorate for Engineering Sciences

FROM: Timothy P. Smith, Engineering Psychologist,
Division of Human Factors, Directorate for Engineering Sciences

SUBJECT: Human Factors Staff Response to NPR Comments and Revised Warning
Requirements for Infant Swings

BACKGROUND

Section 104(b) of the Consumer Product Safety Improvement Act of 2008 (CPSIA), also known as the Danny Keysar Child Product Safety Notification Act, requires the U.S. Consumer Product Safety Commission (CPSC) to promulgate consumer product safety standards for durable infant or toddler products. These standards must be “substantially the same as” applicable voluntary standards or more stringent than such standards if the Commission determines that more stringent standards would further reduce the risk of injury associated with these products. Section 104(f) of the CPSIA defines a “durable infant or toddler product” as a durable product intended for use, or that may be reasonably expected to be used, by children younger than 5 years old, and includes infant swings (104(f)(2)(F)).

The ASTM International¹⁴ (ASTM) voluntary standard ASTM F2088, *Standard Consumer Safety Specification for Infant Swings*, establishes requirements for infant swings. ASTM developed this standard in response to incident data supplied by CPSC staff, and it is intended to minimize the risk of injuries to infants resulting from normal use and reasonably foreseeable misuse or abuse of infant swings. The current version of the standard is ASTM F2088 – 12a.

On January 11, 2012, CPSC staff delivered to the Commission a briefing package that assessed the effectiveness of the voluntary standard and a draft notice of proposed rulemaking (NPR) that included staff’s draft proposed rule for infant swings. Staff recommended that the Commission adopt the ASTM F2088 – 11b voluntary standard—the most current version of the voluntary standard at the time the NPR was drafted—as the draft proposed rule for infant swings with two

¹⁴ ASTM International was formerly known as the American Society for Testing and Materials.

additions, two modifications, and several clarifications of specific requirements and associated test methodologies. In addition, the NPR included a request for public comments on several issues, including possible changes to the required warning statement pertaining to the risk of slump-over deaths. On February 2, 2012, the Commission voted unanimously (4–0) to approve publication of the draft NPR, with amendments. The *Federal Register* published the NPR on February 10, 2012.

The public comment period closed on April 25, 2012, and the CPSC received 24 comments. Twenty of these 24 comments addressed marking and labeling requirements,¹⁵ primarily related to warnings about the slump-over hazard. This memorandum responds to the marking and labeling issues raised in these comments and discusses revised warning requirements intended to address the issues staff considered persuasive.

DISCUSSION

PUBLIC COMMENTS

The 20 comments that the CPSC received related to the marking and labeling requirements in the NPR for infant swings dealt predominantly with the proposed warning statement about the slump-over hazard. For example, 17 of the 20 comments recommend revisions to the slump-over warning statement. However, the comments also raise other significant issues pertaining to marking and labeling requirements. Summaries of the issues the commenters raise and the responses to these comments by staff from the CPSC’s Division of Human Factors (ESHF) appear below.

As noted earlier, in the *Background*, the current version of the voluntary standard for infant swings is ASTM F2088 – 12a; however, the draft proposed rule was based on ASTM F2088 – 11b, which is the version of the standard referenced in the public comments. Because the marking and labeling requirements are identical in both versions of the standard, all section numbers and other references to the standard in the discussion below are based on the current version, ASTM F2088 – 12a, for simplicity.

Revisions to Slump-Over Warning

Section 8.3 of ASTM F2088 – 11b (and ASTM F2088 – 12a) specifies the warning statements that are required on infant swings. The warning statements must be preceded by a safety alert symbol (an equilateral triangle surrounding an exclamation point) and the signal word “WARNING.” All non-cradle infant swings must warn about the risk of serious injury or death from the infant user falling or being strangled in straps and include several statements that describe preventive steps that consumers can take to avoid the hazard. According to section 8.3.1(4), infant swings that have an adjustable seat recline with a seat back angle of greater than 50 degrees must add a statement that warns to use the swing only in the most reclined seat position until the infant using the swing can hold up their head unassisted.

¹⁵ Comments CPSC-2012-0011-0002 through -0010, -0012, -0013, -0015, -0016, and -0018 through -0024.

Sixteen comments (-0002, -0003, -0004, -0006, -0008, -0009, -0010, -0012, -0013, -0015, -0016, -0018, -0019, -0020, -0022, and -0024) recommend that the text of the warning specify or clarify the hazard or the consequences of not avoiding the hazard. Comments about the need to specify the consequences of not avoiding the hazard generally recommend that the warning state explicitly that there is a risk of serious injury, death, or both. Comments about the need to clarify the hazard suggest explicit references to “asphyxiation” or “choking,” or suggest references to the slump-over position or to a hunched position with the “chin touching chest.” Six of the comments (-0003, -0010, -0013, -0016, -0018, and -0019) recommend that the warning specify the ages of the children at risk.

ESHF staff believes that the current warning language requirements pertaining to the slump-over hazard are insufficient and agrees that the warning should be revised to clarify the hazard and the consequences of exposure to the hazard if the consumer cannot avoid it. According to the primary U.S. voluntary consensus standard on product warnings, ANSI Z535.4 (2007), *American National Standard for Product Safety Signs and Labels*, and other warning design guidelines and literature, warnings should describe the hazard, the probable consequences of not avoiding the hazard, and appropriate steps that consumers should take to avoid the hazard. The current warning statement does not describe the slump-over hazard, and the formatting of the warning implies that using the swing in the most reclined seat position is an additional measure intended to address the potential for the infant user to fall or strangle in the straps. In addition, one could argue that the warning statement does not describe the probable consequences of not avoiding the slump-over hazard because the warning’s reference to “serious injury or death” is specific to falls and strangulations.

Although the current warning statement instructs consumers to use the swing in the most reclined seat position until the infant using the swing can hold up their head unassisted, ESHF staff also agrees with the comments that recommend that the warning specify the ages of the children at risk. As noted in CPSC staff’s NPR briefing package for infant swings (Kiss, 2012), all known slump-over fatalities involved infants 3 months old or younger, and infants 3 months old and younger have difficulty keeping their heads upright because of their head mass and neck muscle tone and strength. Yet infants younger than 2 months old may be capable of holding their heads erect and steady briefly without external support (Bayley, 1969); therefore, a warning that relies exclusively on the caregiver’s judgment of a child’s ability to hold up their head unassisted could result in the caregiver raising the seat back angle before the infant has fully developed the neck muscle tone and strength needed to avoid the slump-over hazard. Thus, ESHF staff suggests that the slump-over warning instruct consumers to use the swing in the most reclined seat position until the infant: (1) can hold up their head unassisted, and (2) is older than 3 months.

Based on the above assessment, ESHF staff recommends separating the warning statement pertaining to the slump-over hazard from the warnings about falls and strangulations and rewriting this warning statement as follows:

Keep swing seat fully reclined until child is at least 4 months old AND can hold up head without help. Young infants have limited head and neck control. If seat is too upright, infant’s head can drop forward, compress the airway, and result in DEATH.

Five comments (-0003, -0009, -0010, -0012, and -0019) recommend that the warning state that infants who cannot hold up their heads unassisted should use only cradle swings. One comment (-0004) states that such a change would not substantially reduce the risk.

ESHF staff's recommended revisions to the slump-over warning statement already improve the relevant warning statement in ASTM F2088 – 12a by describing more explicitly the hazard, the consequences of exposure to the hazard, and the infants who are most at risk. As discussed earlier, “*Keep swing seat fully reclined until child is at least 4 months old AND can hold up head without help*” (emphasis added) is the part of the revised slump-over warning intended to communicate the appropriate hazard-avoidance behavior. The five comments cited above essentially recommend that the highlighted portion of this statement be replaced with one that instructs consumers to use only cradle swings.¹⁶ The effectiveness of this change, therefore, depends on whether the use of a cradle swing with these children would address more incidents than fully reclining the seat back on non-cradle swings.

As noted in staff's NPR briefing package (Kiss, 2012), all known swing fatalities occurred when the child was in the infant seat mode rather than cradle mode. However, in the same package, HS staff concluded that, for infant swings having an adjustable seat recline with a seat back angle greater than 50 degrees, fully reclining the seat back until the infant can hold up her or her head unassisted also would address the slump-over hazard (Marques & Wanna-Nakamura, 2011). Thus, ESHF staff doubts that a warning that tells consumers to use only cradle swings will be more effective than one that tells consumers to recline the seat fully.

Five comments (-0009, -0010, -0016, -0018, and -0020) request that all infant swings, not just reclining models with a seat back angle greater than 50 degrees, bear a warning related to the slump-over hazard. One of these comments (-0016) recommends that all reclining swings, regardless of the seat back angle, warn about placing the seat in the most reclined position for infants who are younger than 3 months or who cannot hold up their heads without assistance. The remaining four comments recommend that certain swings bear a warning prohibiting their use with infants who are younger than 3 months or who cannot hold up their heads without assistance. Of these, one (-0009) recommends that such a warning be present on all infant swings that do not lie “flat;” one (-0010) recommends the warning for all reclining swings, regardless of the seat back angle; two (-0018 and -0020) recommend that such a warning be present on all non-reclining models; and one of these two (-0018) also recommends the warning for all reclining models with seat back angles less than 50 degrees.

To staff's knowledge, all infant swings currently on the market are either cradle swings or reclining swings with a maximum seat back angle greater than 50 degrees when measured in accordance with the ASTM standard. Staff is not aware of any reclining swings with a maximum seat back angle less than 50 degrees; therefore, all reclining infant swings would bear the recommended warning label that directs consumers to place the seat in the most reclined position for infants who are younger than 4 months or who cannot hold up their heads without assistance. As noted earlier, HS staff has concluded that fully reclining the seat back on reclining swings with a seat back angle greater than 50 degrees addresses the slump-over hazard (Marques &

¹⁶ ASTM F2088 – 12 defines a “cradle swing” as “an infant swing which [sic] is intended for use by a child lying flat” (section 3.1.2).

Wanna-Nakamura, 2011). Thus, although the draft final rule would not prevent manufacturers from including the warning on reclining swings with a seat back angle less than 50 degrees, staff cannot support mandating such a warning on these products. Cradle swings would not require the warning label because the seat back angle on these swings is not inclined enough to create the slump-over hazard.

Two comments (-0006 and -0021) recommend using pictures or visual aids to clarify the warning message. One of these comments (-0021) suggests that this recommendation was intended for parents whose primary language is not English or who are not familiar with measurements described in degrees.

ESHF staff acknowledges that well-designed graphics might be useful to illustrate the appropriate orientation of the seat back when the infant swing is used with children 3 months old and younger. However, staff is not convinced that a graphic is necessary to convey this message to most consumers, and staff's prior analyses of the incident data associated with infant swings have not revealed a pattern of incidents involving people who were not literate in English. Moreover, the design of effective graphics can be difficult. Some seemingly obvious graphics are poorly understood and can give rise to interpretations that are opposite the intended meaning (so-called "critical confusions") (cf. Johnson, 2006; Wogalter, Silver, Leonard, & Zaikina, 2006). Thus, although staff may recommend action in the future if we believe graphic symbols are needed to further reduce the risk of injury associated with these products, staff recommends permitting, but not mandating, such supporting graphics.

Lastly, although the slump-over warning statement would be required on infant swings that have an adjustable seat recline with a seat back angle greater than 50 degrees, the warning statement itself is not required to reference this 50-degree measurement. ESHF staff does not recommend any revisions to the slump-over warning statement that would introduce reference to "degrees."

One comment (-0006) recommends that the slump-over warning be required to be printed in languages in addition to English. The comment suggests that the warning should be at least in English and Spanish.

ESHF staff does not dismiss the potential usefulness of providing the slump-over warning and other warning information in Spanish and other non-English languages, and staff recognizes that adding Spanish versions of the warnings most likely would improve warning readability among the U.S. population more than adding any other language. Nevertheless, as noted in staff's response to the previous issue, staff's prior analyses of the incident data associated with infant swings have not revealed a pattern of incidents involving people who were not literate in English. Thus, although the draft final rule does not prohibit manufacturers from providing the required warnings in languages other than English, the available information provides no basis for mandating that manufacturers do so.

One comment (-0005) recommends that, for infant swings with multiple recline settings, each recline setting be labeled with the age group for which the setting is most appropriate. The commenter acknowledges that this approach may endanger developmentally delayed infants if the parent or caregiver adheres to these labels.

ESHF staff's recommended revisions to the slump-over warning statement explicitly directs consumers to use the swing in the most reclined position until the infant is 4 months of age and can hold up their head without help. Once the infant is able to do this, the swing can be used in any of the other settings. Thus, staff does not believe that labeling individual recline settings with the "most appropriate" age group is necessary.

Additional Warnings

Several comments recommend warnings in addition to those currently required in the voluntary standard. Before addressing the specific warnings proposed in the comments, ESHF staff would like to point out the importance of prioritizing information to be included in a warning label and the risk associated with providing too many warnings. To be effective, a warning must capture and maintain the attention of the consumer exposed to it. Warnings literature has found that numerous or lengthy warnings are less likely to capture and maintain a consumer's attention than a few brief warnings because they tend to "overload" the recipient, who is unable or unwilling to process the large amount of information (Wogalter & Vigilante, 2006). Thus, including too many warnings, especially about highly unlikely or trivial hazards, decreases the likelihood that consumers will read the warnings that are present and increases the likelihood that consumers will not receive the most important hazard information for the product. For this reason, only the most important and critical warning information—for example, hazards that are severe and likely but are still relatively unknown to the target audience—should be placed on the product itself.

Two comments (-0008 and -0020) state that the product should include warnings about the importance of using the restraint system. One of these comments (-0008) recommends the use of the phrase "DO NOT PLACE INFANT IN SWING WITHOUT SECURING RESTRAINTS." The other comment (-0020) states that the warnings should "address the risks associated with a caregiver's failure to properly employ the use of restraints while the swing is in use." One additional comment (-0006) uses "failing to use the restraint system" as an example of product misuse, which should be warned against.

Section 8.3.1 of ASTM F2088 – 12a already warns about the potential for "serious injury or death from infants falling or being strangled in straps" and instructs consumers: "[a]lways secure infant in the restraint system provided." In addition, the latter statement is nearly identical to the specific phrase recommended in one comment cited above. Thus, staff believes that the current warning statements about this hazard are sufficient.

Staff does not believe that the product should include warnings about general product misuse. As discussed earlier, consumers are less likely to read numerous warnings, especially about hazards that are highly unlikely. Therefore, warning about general product misuse or about numerous instances of product misuse that individually are very rare would increase the likelihood that consumers will not receive the most important hazard information for the product.

Three comments (-0007, -0016, and -0023) state that the product should warn against allowing infants to sleep in the swing. One of the comments suggests that the following language be added to the warning: "Do not use the swing for routine sleep."

ESHF staff does not believe that warning statements about not allowing infants to sleep in the swing should be added. Staff's prior review of the available incident data suggests that the angle of the seat back is more relevant to the potential for slump-over deaths and that adjusting the seat back to the most reclined position would have addressed these incidents. The warnings already include a statement about adjusting the seat back to the most reclined position for children most at risk of slumping over, and ESHF staff has recommended revisions to the warning statement to clarify this message. Thus, CPSC staff believes that warnings about not sleeping in infant swings would not reduce further the incidence of slump-over deaths and believes that the data do not support mandating such a warning.

One comment (-0007) recommends that there be warnings about limiting the amount of time that infants spend in the swing for "health and developmental concerns," namely, positional/deformational plagiocephaly and developmental delays from a lack of "tummy time."

Warnings are safety communications intended to inform consumers about hazards, with the ultimate goal of reducing injuries and deaths. Thus, while there may be exceptions, one generally should not provide a warning unless a significant hazard exists (Laughery & Hammond, 1999). Staff is not aware of any reported incidents of positional/deformational plagiocephaly involving infant swings. Even if one presumes that such an association exists, ESHF staff has confirmed with staff of the CPSC Directorate for Health Sciences (HS) that this condition does not pose a hazard to infants. Similarly, developmental delays from a lack of "tummy time" are not hazards per se and do not directly lead to injuries or deaths. Consequently, staff does not believe that this issue rises to the level required to mandate an associated warning on the product.

One comment (-0009) recommends that swings supported by a single arm include a warning about the increased likelihood of seat deflection.

ESHF staff does not believe that a warning about an increased likelihood of seat deflection is necessary for single-arm infant swings. Since publication of the NPR, CPSC staff has worked with the ASTM Subcommittee on Infant Swings to develop new, improved performance requirements intended to address seat deflection. Staff believes that these requirements, which will become part of the proposed final rule, will effectively address the risk associated with seat deflection and, therefore, eliminates the need for a warning.

One comment (-0024) recommends that all swings with AC or electrical power cords include a warning label on the cords similar to that in the baby monitor standard, which warns about the strangulation hazard that such cords pose.

ESHF staff does not believe that mandating a strangulation warning on the AC or electrical power cords that might accompany certain infant swings is appropriate at this time. The recently published voluntary standard for baby monitors, ASTM F2951 – 12a, *Standard Consumer Safety Specification for Baby Monitors*, does require strangulation warnings on the cords of baby monitors, but specifies different warnings, depending on whether the product is intended to be attached to a crib. For transmitters that are not intended to be attached to a crib, the warning instructs consumers to keep the cord more than 3 feet away from the child. For transmitters that are intended to be attached to a crib—a situation more analogous to in infant swing that holds the

infant and has an electrical power cord attached—the warning instructs consumers always to use the manufacturer-supplied protective cord covering. However, infant swings are not required to provide protective coverings for electrical power cords, so staff is unclear how consumers would comply with such a warning.

A general warning about the risk of strangulation from these cords when the child is not using the product might be more reasonable. However, CPSC staff is not aware of any incidents associated with this hazard scenario involving infant swings, which suggests that this hazard does not rise to the level needed to mandate such a warning. Manufacturers of infant swings with cords are free to include strangulation warnings on their cords, and staff can revisit the possibility of mandating such warnings if future incident data show that doing so would be appropriate.

ESHF STAFF-RECOMMENDED WARNING REQUIREMENTS

Based on the above assessment, ESHF staff recommends that the warning requirements for staff’s draft final rule be substantially the same as section 8.3 of the ASTM F2088 – 12a standard, but that section 8.3.1(4) be replaced with the following:

8.3.1.1 Products having an adjustable seat recline with a seat back angle greater than 50 degrees measured in accordance with 7.13 shall address the following:

Keep swing seat fully reclined until child is at least 4 months old AND can hold up head without help. Young infants have limited head and neck control. If seat is too upright, infant’s head can drop forward, compress the airway, and result in DEATH.

ESHF staff believes that the warning requirement recommended above is more stringent than that specified in ASTM F2088 – 12a, and that this improved requirement could reduce the likelihood of injury and death associated with infant swings relative to the original requirement.

CONCLUSIONS

ESHF staff suggests revisions to the slump-over warning statement to address public comments received in response to the NPR for infant swings. Specifically, staff revised the warning statement to describe explicitly the slump-over hazard, the consequences of not avoiding the hazard, and the children who are most at risk.

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TAB D: Engineering and Laboratory Staff Memo

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UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
4330 EAST WEST HIGHWAY
BETHESDA, MARYLAND 20814

Memorandum

DATE: August 1, 2012

TO : Celestine Kiss
Division of Human Factors
Directorate for Engineering Sciences

THROUGH: J. DeWane Ray
Assistant Executive Director
Office of Hazard Identification and Reduction

FROM : Richard McCallion
Office of Hazard Identification and Reduction

SUBJECT : Swing Standard: Engineering Responses to Public Comments and Evaluation of
Technical Differences

I. Introduction

The Consumer Product Safety Improvement Act of 2008, Public Law 110–314 (CPSIA), was enacted on August 14, 2008. Section 104(b) of the CPSIA, also known as the Danny Keysar Child Product Safety Notification Act, requires the U.S. Consumer Product Safety Commission (CPSC, or Commission) to promulgate consumer product safety standards for durable infant or toddler products. These standards are to be “substantially the same as” applicable voluntary standards or more stringent than the voluntary standard if the Commission concludes that more stringent requirements would further reduce the risk of injury associated with the product. The Commission proposed safety standards for infant swings in the *Federal Register* (77 FR 7011 February 10, 2012) based on the voluntary standard for infant swings, ASTM F2088 - 11b. The notice in the *Federal Register* requested comments from the public. Since the publication of this notice, ASTM has published two newer versions of the standard, F2088 - 12 and 12a. This memorandum addresses comments received from the public regarding testing-related issues, such as seat deflection, dynamic testing, and electrical component testing in addition to evaluating the differences between the new ASTM standard for infant swings and the proposed rule by CPSC.

II. Staff Responses to Comments

DYNAMIC AND STATIC TESTS (Barcia and Cahoy)

Comment: One commenter states the CPSC-proposed rule requires the tester to use a 75-lb weight and to drop it 500 times on the swing seat. The commenter questions the new test method's predictive ability to replicate real-world conditions and injuries, because, the commenter states, the ASTM standard required a 25-lb weight dropped 50 times onto the seat. Next, the commenter suggests that the total number of drops could be increased beyond the current 500 drops. The total quantity of drops could be based on a consumer survey, which could ask parents how many times a day they put their baby in the swing and whether they used it for one or more babies, the commenter asserts. Lastly, the commenter states that it is unclear why the test involves dropping. The force of an impact, especially with a drop mass of 75 lbs repeated 500 times, could weaken the infant swing at an unreasonable and unrepresentative rate. The commenter recommends, instead, that the test should measure the effect of a static mass placed in the seat over a period of time. Another commenter (-0014) questions the 75-lb requirement in the static load test and asks why 4 inches is the acceptable amount of seat deflection.

Response: The current ASTM standard, F2088 - 12a, has adopted the CPSC staff recommendation to increase the number of drops from 50 to 500 in the dynamic load test. The additional cycles were based on CPSC testing, which included life cycle testing. Staff believes a cyclic test of 500 drops is an appropriate test to evaluate the potential for structural failure in an infant swing. Continued testing beyond 500 cycles did not reveal any new issues and may place an unnecessary burden on the manufacturers and test labs. Additionally, the dynamic test specifies a 25-lb load, not a 75-lb load, as suggested by the commenter. The 25-lb load is the approximate weight of a 95th percentile 10- to 12-month-old child. The static load test included in the standard is the only test that calls for the application of a 75-lb load in the seat. The 75-lb static load has been part of the voluntary standard since its inception in 2001; it is not something newly added by staff. Finally, the dynamic test drop height is 1 inch. The forces applied from this drop are considered by staff to be consistent with actual forces associated with swing use. Performing the dynamic test as specified in the standard ensures consistent, repeatable testing results. Together, these tests are intended to evaluate the structural integrity of the infant swing, and staff believes that they are sufficient to address structural issues that would occur over the life of the product.

PRODUCT MISASSEMBLY (Consumer Advocates)

Comment: The commenter states: "Because of the constant use/storage/lending use pattern of swings, we recommend that CPSC consider including additional requirements in the standard for infant swings, such as the provisions in the crib standard that seek to reduce hardware loss or misassembly. This could include requiring hardware that doesn't back out or become loose, captive hardware, performance requirements to avoid misassembly, and a method to make sure instructions stay with the product."

Response: The Commission has included a misassembly provision in the standards for bassinets, play yards, and cribs, based upon reported incidents and known usage patterns. CPSC staff

evaluating infant swings are aware of these hazard patterns in other juvenile product incidents but, they have concluded that ASTM has sufficiently addressed these issues by requiring that all threaded fasteners connecting structural components must have a locking mechanism, such as lock washers, self-locking nuts, or other features designed to prevent detachment due to vibration. CPSC staff's product evaluation revealed that many current swing designs use other means, such as Valco-type button fasteners, which are permanently attached to the respective component. In most swing designs, misassembly of a swing would make the frame overtly unstable or result in an unnatural appearance that would be obvious to the consumer. The addition of a misassembly requirement would add a testing requirement for an incident pattern that is not evident among the incidents reported to CPSC staff, and which the existing standard addresses.

SEAT DEFLECTION (Multiple Commenters)

Comment: Multiple commenters questioned the seat deflection test and how it related to injury reduction. Individual commenters suggested including a second test to account for the potential of increased deflection over the life of the product, and several commenters recommended an additional warning label stating that seat deflection is more likely in single-arm swings. Another commenter stated that the CPSC did not explain why the agency chose 4 inches as its performance requirement.

Response: Staff disagrees that adding a seat deflection warning label is appropriate. Seat deflection is a design issue that should be addressed during the product's development and verified with standard testing. It is not an issue that can be addressed by the consumer. The seat deflection test proposed by staff was a preliminary test procedure under development at the time of the notice of proposed rulemaking. CPSC has continued to work with ASTM to refine the seat deflection test for infant swings. ASTM's newest standard includes a test methodology and performance requirements that measure various seat angles, as was suggested by a commenter, and satisfactorily addressed the seat deflection issues raised by staff.

III. Miscellaneous Technical Issues

In addition to comments received on the NPR, ASTM F2088 - 12a includes additional changes that were not previously addressed, modified the CPSC proposed language, or adopted the proposal with some differences. These changes have been evaluated and recommendations are as follows:

UNINTENTIONAL FOLDING

The most current version of the standard, ASTM F2088 - 12a, did not incorporate the changes included in the NPR for the unintentional folding test. The NPR included the following changes:

*7.4.1 With the unit in the manufacturer's recommended use position, apply a force of 10 lbf (45 N) at the ~~end of a leg~~ **lowest point on the leg that results in the greatest force on the latch** in the direction normally associated with folding, while holding the opposite leg(s) stationary. Gradually apply the*

force over 5 s, and maintain for an additional 10 s. Repeat this test on each leg.

This staff recommendation was specifically intended to refine further testing on swings with “L-” shaped cantilevered legs. CPSC staff was concerned that a test lab could interpret this test to require the force be applied at the end of the “L-” shaped leg that is not in the vertical plane of the latch. In this case, the maximum force normally associated with folding is at the end of the leg vertically under the latch. After discussions with ASTM, staff has concluded that the current wording allows testing to be performed as stated in the NPR, and the proper testing location for this design is readily apparent to all involved. Therefore, CPSC staff recommends the infant swing unintentional folding test statement proposed in the NPR, as a clarification to the existing test procedure, be excluded from the final rule.

SEAT DEFLECTION

CPSC staff proposed a seat deflection requirement in the NPR based on swing incidents in which the child was fully or partially ejected based on the swing seat orientation. During physical testing, CPSC staff also noted significant levels of deformation in some infant swing designs. In the NPR, staff included a preliminary procedure it had previously recommended to the ASTM subcommittee. The ASTM subcommittee continued to develop the procedure with CPSC staff participation. The latest version of F2088 contains the fully developed test methodology, developed by ASTM, evaluated by CPSC staff, and is listed below. The new verbiage contains a more comprehensive requirement based on maximum seat angle specifications or shoulder strap requirements. Staff believes this requirement addresses more adequately the incidents where a child falls out of the seat.

6.8 Seat Angles for Swings with Removable Tray/Armbar or Without Tray/Armbar

6.8.1 Products with a horizontal axis of swing motion shall meet the requirements of section 6.8.1.1 or 6.8.1.2.

6.8.1.1 The angle between the seat back and horizontal shall be:

less than 60° for full size swings

less than 45° for travel swings

and the angle between the seat bottom and horizontal shall be 30° or greater when tested in accordance with 7.14.

6.8.1.2 The product shall include shoulder straps as part of the restraint system.

6.8.2 Products with other than horizontal axis of swing motion shall meet the requirements of section 6.8.2.1 or 6.8.2.2

6.8.2.1 The angle between the seat bottom and horizontal shall be 5° or greater when tested in accordance with 7.15.

6.8.2.2 The product shall include shoulder straps as part of the restraint system.

7.13 Seat Back Angle Measurement—Place the back of the swing in the most upright use position. Remove positioning accessories, including pillows. Position the segments of the restraint system to limit interaction with the Hinged Weight Gage-Infant (see Fig. 10) when placed in the seat. Place the Hinged Weight Gage-Infant into the seat with the hinge located at the junction of the swing back and seat bottom (see Fig. 8). Place the inclinometer on the floor and zero the reading. Manually pivot the swing seat to the position that results in the most upright seatback angle. While maintaining this position, place the inclinometer against the Upper Plate of the Hinged Weight Gage and measure the maximum seat back angle as shown in Fig. 11.

7.14 Place the back of the swing in the most upright use position. Remove positioning accessories, including pillows. Position the segments of the restraint system to limit interaction with the Hinged Weight Gage-Infant (see Fig. 10) when placed in the seat. Place the Hinged Weight Gage-Infant with the hinge located at the junction of the swing back and seat bottom (see Fig. 8). Place the inclinometer on the floor and zero the reading. Measure the angle between the seat back and horizontal (see Fig. 12). Measure the angle between seat bottom and horizontal (see Fig. 12).

7.15 Place the back of the swing in the most upright use position. Remove positioning accessories, including pillows. Position the segments of the restraint system to limit interaction with the Hinged Weight Gage-Infant (see Fig. 10) when placed in the seat. Place the Hinged Weight Gage-Infant with the hinge located at the junction of the swing back and seat bottom (see Fig. 8). Place the inclinometer on the floor and zero the reading. Manually pivot the swing seat to the position that results in the minimum seat bottom angle. While maintaining this position, measure the angle between the Lower Plate of the Hinged Weight Gage and horizontal (see Fig. 12).

X1.2 Subsection 6.8.1 – The seat angles were determined based on product comparisons and anecdotal analysis of field reports. The test is evaluating a moving seat in a static configuration. The angle limitations are designated to provide adequate containment throughout the seat's range of motion.

X1.3 Subsection 6.8.2 – The required seat angles ensure that the seat bottom will have a positive angle in all orientations. The angle limitation for the seat bottom is designated to provide adequate containment throughout the seat's range of motion.

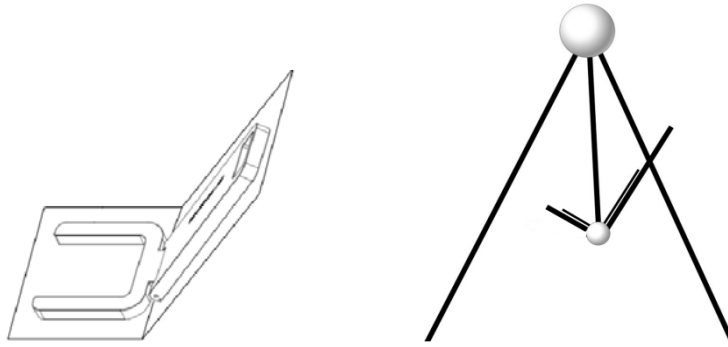


FIG. 8 Seat Recline Fixture Placement

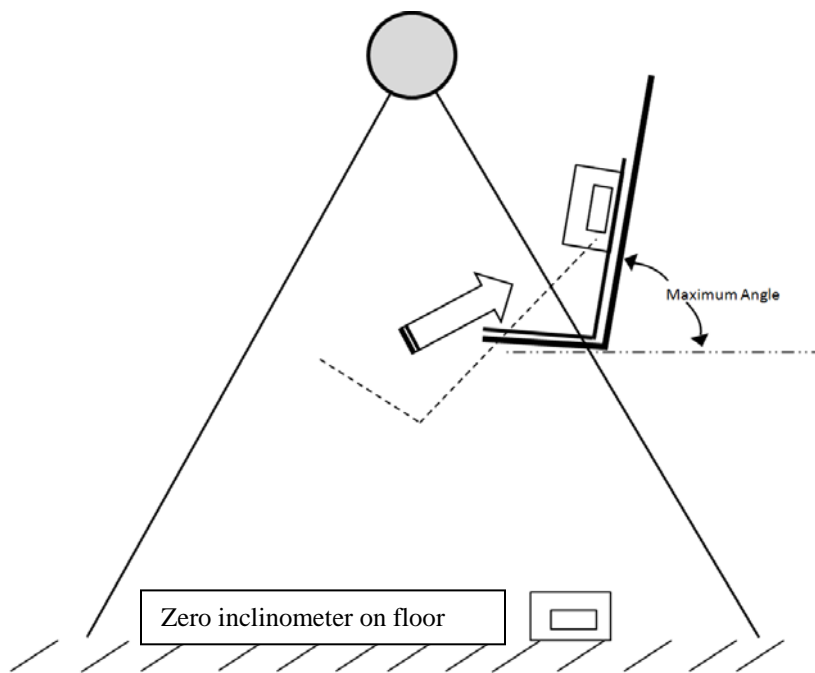


FIG. 11 Seat Back Angle Measurement

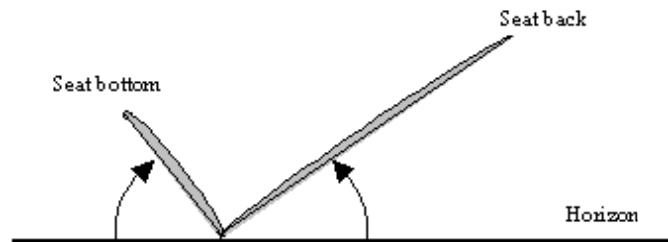


FIGURE 12 – Angles from horizontal to seat bottom and back

SEAT BACK RECLINE FIXTURE

The seat back recline fixture in F2088 - 11b was updated by ASTM in the 2012a version of the standard. An updated fixture was designed based on the CAMI dummy. This fixture will provide for repeatable angle measurements while providing the same seat angles as the CAMI. The changes were made to adjust the center of gravity of the fixture to more accurately approximate the weight distribution of an actual child. This change will improve the accuracy of testing and therefore improve the safety of the standard. This change was not proposed in the NPR, but it was developed with the participation of CPSC staff.

ELECTRICAL OVERLOAD TEST

ASTM did not include the statement “The test shall be conducted using a new swing” in the electrical overload test requirements. The testing on swing samples is done largely independent of the electrical components. For this reason, the electrical components on a swing sample can normally be considered “new” even after other components have been tested. This will reduce the number of samples required to complete a test. CPSC staff recommends accepting the electrical overload requirement as stated in ASTM F2088 – 12a.

TAB E: Economics Staff Memo

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UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
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Memorandum

Date: July 11, 2012

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SUBJECT : Final Regulatory Flexibility Analysis of Staff-Recommended Final Rule for
Infant Swings

Introduction

On August 14, 2008, the Consumer Product Safety Improvement Act (CPSIA) was enacted. Among its provisions, the Danny Keysar Child Product Safety Notification Act, section 104 of the CPSIA, requires the U.S. Consumer Product Safety Commission (CPSC or Commission) to evaluate the existing voluntary standards for durable infant or toddler products and promulgate a mandatory standard substantially the same as, or more stringent than, the applicable voluntary standard. Swings (often referred to as infant swings to differentiate them from swings for older children) are among the durable products specifically named in the Danny Keysar Child Product Safety Notification Act.

The notice of proposed rulemaking (NPR) for infant swings, approved by the Commission for publication in February 2012, was based on the voluntary ASTM International (formerly known as the American Society for Testing and Materials) standard for infant swings (F2088 - 11b). The Commission proposed several modifications, additions, and clarifications at that time.

Most of the proposed changes have been incorporated into ASTM F2088 - 12a, which staff recommends adopting, along with one additional change to the slump-over warning.

The Regulatory Flexibility Act (RFA) requires that final rules be reviewed for their potential economic impact on small entities, including small businesses. Section 604 of the RFA requires that CPSC staff prepare a final regulatory flexibility analysis when the Commission promulgates a final rule. The final regulatory flexibility analysis must describe the impact of the rule on small entities and identify any alternatives that may reduce the impact. Specifically, the final regulatory flexibility analysis must contain:

1. a succinct statement of the objectives of, and legal basis for, the rule;
2. a summary of the significant issues raised by public comments in response to the initial regulatory flexibility analysis, a summary of the assessment of the agency of such issues, and a statement of any changes made in the proposed rule as a result of such comments;
3. a description of, and, where feasible, an estimate of, the number of small entities to which the rule will apply;
4. a description of the projected reporting, recordkeeping, and other compliance requirements of the rule, including an estimate of the classes of small entities subject to the requirements and the type of professional skills necessary for the preparation of reports or records; and
5. a description of the steps the agency has taken to reduce the significant economic impact on small entities, consistent with the stated objectives of applicable statutes, including a statement of the factual, policy, and legal reasons for selecting the alternative adopted in the rule, and why each one of the other significant alternatives to the rule considered by the agency, which affect the impact on small entities, was rejected.

The Product

Infant swings are products with a stationary frame that use a powered mechanism to swing the child. The powered mechanism could be electronic, battery powered, or wind-up. The traditional infant swing holds the child in a seated position, but cradle swings where the child is lying flat or nearly flat are also considered infant swings. Other products that would be included in the staff-recommended standard are:

- 1) Travel swings, which are similar to traditional swings but lower to the ground; and
- 2) Gliders, which differ from traditional swings only in their type of motion.

Swings without a power mechanism, whether intended for infants or older children, would not be included under the staff-recommended final rule.

The Market for Swings

Infant swings are typically produced and/or marketed by juvenile product manufacturers and distributors. CPSC staff estimates that currently, there are at least nine domestic manufacturers and one domestic importers supplying infant swings to the U.S. market.¹⁷ Infant swings from five of the 10 firms have been certified as compliant with the ASTM voluntary standard F2088 - 11b by the Juvenile Products Manufacturers Association (JPMA), the major U.S. trade association that represents juvenile product manufacturers and importers.¹⁸ Two additional firms claim compliance with F2088 - 11b.

Information on annual sales of infant swings can be approximated using information from the 2005 survey conducted by the American Baby Group (*2006 Baby Products Tracking Study*).¹⁹ About 79 percent of new mothers own at least one infant swing—61 percent own full-sized infant swings, and 33 percent own smaller travel infant swings. Approximately 31 percent of full-sized infant swings and 26 percent of travel infant swings were handed down or purchased secondhand.²⁰ Thus, about 69 percent of full-sized infant swings, and 74 percent of travel infant swings were acquired new. This suggests annual sales of about 2.7 million infant swings to households ($.69 \times .61 \times 4.1$ million births per year + $.74 \times .33 \times 4.1$ million births per year).²¹

Typically, infant swings are used for only a few months early in a child's life. Therefore, we have estimated the risk of injury based on the number of infant swings in the households of new mothers. Based on data from the *2006 Baby Products Tracking Study*, approximately 3.9 million infant swings are owned by new mothers (0.61 percent own full-size \times 4.1 million births + 0.33 percent own travel size \times 4.1 million births). This suggests that at least 3.9 million infant swings may be available to children during the first year of their lives. According to Epidemiology (EPI) staff, there were an estimated 1,900 emergency department-treated injuries to children under age 5 related to infant swings during 2011. Consequently, there would have been about 4.9 emergency department-treated injuries annually for every 10,000 infant swings available for use in the households of new mothers.

¹⁷ Determinations were made using information from Dun & Bradstreet and ReferenceUSAGov, as well as firm websites. Since the February 2012 NPR, a few firms have stopped or started supplying infant swings to the U.S. market.

¹⁸ JPMA typically allows 6 months for products in their certification program to shift to a new standard once it is published. F2088-12a, the voluntary standard upon which the staff-recommended final rule is based, will become effective for JPMA certification purposes in March 2013.

¹⁹ The data collected for the *Baby Products Tracking Study* does not represent an unbiased statistical sample. The sample of 3,600 new and expectant mothers is drawn from *American Baby* magazine's mailing lists. Also, since the most recent survey information is from 2005, it may not reflect the current market.

²⁰ The data on secondhand products for new mothers was not available. Instead, data for new mothers and expectant mothers was combined and broken into first-time mothers and experienced mothers. Data for first-time mothers and experienced mothers have been averaged to calculate the approximate percentage that was handed down or purchased secondhand.

²¹ U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), National Center for Health Statistics, National Vital Statistics System, "Births: Final Data for 2009," *National Vital Statistics Reports* Volume 60, Number 1 (November 2011): Table I. The number of births in 2009 is rounded from 4,130,665.

Reason for Agency Action and Legal Basis for the Staff-Recommended Final Rule

The Danny Keysar Child Product Safety Notification Act of the CPSIA requires the CPSC to promulgate a mandatory standard for infant swings that is substantially the same as, or more stringent than, the voluntary standard. CPSC staff has worked closely with ASTM to improve the requirements, and test procedures that have been added to the voluntary standard F2088 - 12a.

Requirements of the Staff-Recommended Final Rule

CPSC staff recommends adopting the voluntary ASTM standard for infant swings, F2088 - 12a, with one modification. Some of the more significant requirements of ASTM F2088 - 12a are listed below. The requirements that have been added to the ASTM voluntary standard since the NPR are in italics:

- Stability test—intended to prevent tip over. Swing models that rotate about the lateral axis are positioned on an inclined surface with the swing facing forward and then facing backward. Swings that do not rotate about the lateral axis are tested in the position most likely to fail. *This was modified in F2088 - 12 to clarify the test procedure, as proposed by the Commission in the February 2012 NPR.*
- Test to prevent unintentional folding—intended to ensure that any locking/latching mechanisms remain functional after testing.
- Tests on restraint system—intended to prevent slippage and breakage during regular use.
- Requirements for cradle swing orientation—intended to ensure that the surface remains relatively flat both while in motion and while at rest.
- Requirements for *electrically powered* swings—intended to prevent leakage and otherwise protect consumers. *These requirements originally applied only to battery operated swings, but were expanded in F2088 - 12 to encompass all electrically powered swings as proposed by the Commission in the February 2012 NPR. ASTM F2088 - 12a extends the compliance requirements of all AC adaptors and includes a list of accepted national safety standards. There are also some editorial differences between the NPR and F2088 - 12a.*
- Requirement for toy mobiles—intended to ensure that toys within a child's reach do not detach when pulled on. This requirement was new to the 2011a standard *and was modified for the 2012 standard to prevent detachment when pulled horizontally as well (as proposed in the February 2012 NPR).*
- Shoulder strap requirement—they would be required for swing seats with angles greater than 50 degrees. Directorate for Health Sciences (HS) staff believes that this requirement, new to the 2011a standard, will greatly reduce the number of injuries resulting from falls.²² *The seat back angle measurement procedure has been updated since the February 2012 NPR. It now addresses the issues that the CPSC proposed to*

²² Memorandum from Stephanie Marques and Suad Wanna-Nakamura, Division of Health Sciences, Directorate for Health Sciences, dated November 29, 2011, Subject: Infant Swing-Related Deaths and Injuries.

address with the seat deflection test included in the NPR. It now addresses seats that fold up or tilt by limiting the severity of angles created by the seat and seat back or requiring shoulder straps as part of the restraint system.

- Dynamic and static load requirements—intended to ensure that the infant swing can handle these loads without breaking. *The dynamic load test procedure was modified in F2088 - 12 to mirror proposed changes in the February 2012 NPR, including increasing the number of times the weight is dropped.*

The voluntary standard also includes: (1) torque and tension tests to assure that components cannot be removed; (2) requirements for several infant swing features to prevent entrapment and cuts (minimum and maximum opening size, small parts, exposed coil springs, protective components, hazardous sharp edges or points, and edges that can scissor, shear, or pinch); (3) requirements for the permanency and adhesion of labels; (4) a leg opening test to assure that occupants cannot slide out; (5) requirements for instructional literature; and (6) restraint system requirements. Additionally, all testing must be performed without adjusting or repositioning the swing, and swings with multiple seat configurations must be placed in the most disadvantageous position for testing.

In the February 2012 NPR, the Commission requested public comments on the warning statement regarding the risk of slump-over deaths. As a result of the comments received, Division of Human Factors (HF) staff recommends modifying the existing warning label to clarify the hazard and its potential consequences, as well as specifying the ages of children at risk.²³ EPI staff identified three slump-over deaths in the original NPR analysis.²⁴ Changes to warning labels are not expected to have a significant impact on suppliers. However, one firm that we contacted said that their warning and label development processes are more intensive than most, involving several levels of approval. They also said that warning label replacement on products is more expensive for the pressure sensitive labels used on plastic or metal.

Issues Raised by Public Comments

There were two issues raised by public comment in response to the initial regulatory flexibility analysis. These include concerns about the impact of product recalls on firms whose products are not in compliance with the voluntary standard, and suggestions for collecting additional data. These comments and their responses are presented in their entirety in Appendix A.

Additionally, several comments were received in response to the Commission's query regarding the adequacy of the slump-over warning. In response to these comments, HF staff has modified the warning to reflect the affected age group better, as well as the actual hazard and its consequence.

²³ Memorandum from Timothy P. Smith, Division of Human Factors, Directorate for Engineering Sciences, dated June 7, 2012, Subject: Human Factors Staff Response to NPR Comments and Revised Warning Requirements for Infant Swings.

²⁴ Chowdhury, 2011.

Other Federal or State Rules

The Commission is in the process of implementing sections 14(a)(2) and 14(i)(2) of the Consumer Product Safety Act (CPSA), as amended by the CPSIA. Section 14(a)(2) of the CPSA requires every manufacturer of a children's product that is subject to a product safety rule to certify, based on third party testing, that the product complies with all applicable safety rules. Section 14(i)(2) of the CPSA requires the Commission to establish protocols and standards (i) for ensuring that a children's product is tested periodically and when there has been a material change in the product, (ii) for the testing of representative samples to ensure continued compliance, (iii) for verifying that a product tested by a conformity assessment body complies with applicable safety rules, and (iv) for safeguarding against the exercise of undue influence on a conformity assessment body by a manufacturer or private labeler.

Because infant swings will be subject to a mandatory standard, they will also be subject to the third party testing requirements of section 14(a)(2) of the CPSA when the mandatory standard and the notice of requirements become effective.

Impact on Small Businesses

As noted earlier, there are approximately ten domestic firms currently known to be producing or selling infant swings in the United States. Under U.S. Small Business Administration (SBA) guidelines, a manufacturer of infant swings is small if it has 500 or fewer employees and an importer is considered small if it has 100 or fewer employees. Based on these guidelines, five domestic manufacturers are small firms. The remaining firms are four large domestic manufacturers and one large domestic importer. There may be additional unknown small manufacturers and importers operating in the U.S. market.

Small Manufacturers

The expected impact of the staff-recommended final rule on small manufacturers will differ based on whether their infant swings are compliant with ASTM F2088 - 11b. Firms whose infant swings meet the requirements of F2088 - 11b are generally expected to continue to do so as new versions are published, typically within 6 months, which is the amount of time JPMA allows for products in their certification program to shift to a new standard. Many of these firms are active in the ASTM standard development process, and compliance with the voluntary standard is part of an established business practice. Therefore, it is likely that firms supplying infant swings that comply with ASTM F2088 - 11b (which went into effect for JPMA certification purposes in May 2012) would also comply with F2088 - 12a by March 2013, even in the absence of a mandatory standard.

The direct impact on the three known small domestic manufacturers whose infant swings are compliant with ASTM F2088 - 11b is not expected to be significant. Each firm will need to modify the slump-over warning label for their infant swings. This is not generally expected to be costly, although some firms may experience larger costs than others, depending upon their label

development process and where the warning labels are affixed on their products. One firm estimates that the one-time cost of changing their labels, including development time and materials, would be approximately \$1,000 per model.

Meeting ASTM F2088 - 12a's requirements could necessitate product redesign for some infant swings not believed to be compliant with F2088 - 11b. The redesign would be minor if most of the changes involve adding straps and fasteners or using different mesh or fabric; but the redesign could be more significant if changes to the frame are required. Consequently, the staff-recommended rule could potentially have a significant direct impact on the two small manufacturers of infant swings that are not believed to have conformed to F2088 - 11b, regardless of how they choose to meet the staff-recommended warning label requirement. One manufacturer estimated that a complete infant swing redesign would cost approximately \$400,000, not including significant overhead costs, such as engineering time, which at \$100 per hour could easily increase overall redesign costs by \$100,000 or more. However, a complete product redesign is unlikely to be necessary in most cases, and any direct impact may be mitigated if costs are treated as new product expenses that can be amortized.

It is possible that the two firms whose infant swings are neither certified as compliant nor claim compliance with F2088 - 11b are, in fact, compliant with the standard. CPSC staff has identified many such cases with other products. To the extent that these firms may supply compliant infant swings and have developed a pattern of compliance with the voluntary standard, the direct impact of the staff-recommended final rule will be less significant than described above.

Although the direct impact of the staff-recommended final rule should not be significant for most small manufacturers, there are indirect impacts as well. These impacts are considered indirect because they do not arise directly as a consequence of the infant swing rule's requirements. Nonetheless, these indirect costs could be significant. Once the final rule becomes effective and the notice of requirements is in effect, all manufacturers will be subject to the additional costs associated with the third party testing and certification requirements. This will include the physical and mechanical test requirements specified in the final rule; lead and phthalates testing is already required and hence not included here.²⁵

Based on information provided by manufacturers, additional industry input, and information obtained when staff was developing the third party testing rule, third party testing costs for ASTM F2088 - 12a (including toy testing which is part of the infant swings voluntary standard) are estimated to be around \$900 per model sample. Testing overseas could potentially reduce third party testing costs, but that may not always be practical.

On average, each small domestic infant swing manufacturer supplies 6 models of infant swings to the U.S. market annually. Therefore, if third party testing was conducted every year, third party testing costs for each manufacturer might add about \$5,400 annually to the manufacturer's costs, assuming only one sample of each model had to be tested. Based on a review of firm revenues, the impact of third party testing to ASTM F2088 - 12a is unlikely to be

²⁵ Infant swing suppliers already must third party test their products to the lead and phthalate requirements. Therefore, these costs already exist and will not be affected by the final infant swings standard.

significant for small manufacturers unless a large number of samples had to be tested for each model.

Small Importers

Staff was unable to identify any small importers currently operating in the U.S. market. However, if any exist they would need to find an alternate source of infant swings if their existing supplier does not come into compliance with the requirements of the staff-recommended final rule. They could also discontinue importing any non-complying infant swings, possibly replacing it with another juvenile product. As is the case with manufacturers, importers will be subject to third-party testing and certification requirements, and consequently, would experience costs similar to those for manufacturers if their supplying foreign firm(s) does not perform third-party testing.

Alternatives

Under the Danny Keysar Child Product Safety Notification Act, one alternative that would reduce the impact on small entities would be to make the voluntary standard mandatory with no modifications. However, while this alternative would eliminate any additional costs associated with the staff-recommended labeling change, firms supplying non-compliant infant swings could still require substantial product redesign in order to meet the voluntary standard. Because of the frequency and severity of the incidents associated with slump-over incidents,²⁶ staff does not recommend this alternative.

A second alternative would be to set an effective date later than the staff-recommended 6 months. This would allow suppliers additional time to modify and/or develop compliant infant swings and spread the associated costs over a longer period of time. CPSC staff generally considers 6 months sufficient time for suppliers to come into compliance with a mandatory standard; it is common in the industry, representing the amount of time the JPMA allows for products in their ASTM certification program to shift to a new standard.

²⁶ Chowdhury, 2012.

Appendix A: Response to Public Comments

Presented below are the responses to comments directed toward the initial regulatory flexibility analysis for infant swings.

Comment

One commenter said that the regulatory flexibility analysis should consider the effect that a product recall would have on firms "...that are not known to be in compliance with the voluntary standard." The commenter goes on to say that the Commission should "...consider extending the effective date to one year to help minimize a possibility of a substantial loss of revenue from the potential product recalls on the small manufacturers and importers."

Response

The Regulatory Flexibility Act requires an evaluation of the likely economic impacts of conforming to the standard that is being proposed, not the economic impact of violating the standard. If firms comply with the standard, recalls related to non-conformance would be avoided.

Comment

One commenter said that staff should try "to obtain a more accurate number of manufacturers who do not meet the ASTM standard" and suggested that staff "count those manufacturers that sell at major retailers that require ASTM compliance" as well. The commenter said that because "just ten firms are making or importing swings, CPSC could easily get direct information that would more clearly identify costs."

Response

Staff has attempted to obtain accurate estimates of small firms that do not conform to the ASTM voluntary standard for infant swings, and information on the likely costs of conformance. Further effort would not change the results of the analysis. Nor is it necessarily easy for firms to prospectively estimate the economic impact a regulation will have on their costs.

TAB F: *Federal Register* Notice of Final Rulemaking to establish a Safety Standard for Infant Swings

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Billing Code 6355-01-P

CONSUMER PRODUCT SAFETY COMMISSION

16 CFR Part 1223

CPSC Docket No. CPSC-2012-0011

RIN 3041-AC90

Safety Standard for Infant Swings

AGENCY: Consumer Product Safety Commission.

ACTION: Final Rule.

SUMMARY: Section 104(b) of the Consumer Product Safety Improvement Act of 2008 (CPSIA), part of the Danny Keysar Child Product Safety Notification Act, requires the United States Consumer Product Safety Commission (Commission, CPSC, or we) to promulgate consumer product safety standards for durable infant or toddler products. These standards are to be “substantially the same as” applicable voluntary standards or more stringent than the voluntary standard if the Commission concludes that more stringent requirements would further reduce the risk of injury associated with the product. In this final rule, the Commission is issuing a safety standard for infant swings, as required under section 104(b) of the CPSIA.

DATES: The rule is effective [INSERT DATE 6 MONTHS AFTER PUBLICATION IN FEDERAL REGISTER] and applies to products manufactured on or after that date. The incorporation by reference of the publication listed in this rule is approved by the Director of the Federal Register as of [INSERT DATE 6 MONTHS AFTER PUBLICATION IN FEDERAL REGISTER].

FOR FURTHER INFORMATION CONTACT: Keysha L. Watson, Office of Compliance and Field Operations, U.S. Consumer Product Safety Commission, 4330 East West Highway, Bethesda, MD 20814; telephone (301) 504-6820; e-mail: kwatson@cpsc.gov.

SUPPLEMENTARY INFORMATION:

A. Background: Section 104(b) of the CPSIA

The CPSIA was enacted on August 14, 2008. Section 104(b) of the CPSIA, part of the Danny Keysar Child Product Safety Notification Act, requires the Commission to promulgate consumer product safety standards for durable infant and toddler products. These standards are to be “substantially the same as” applicable voluntary standards or more stringent than the voluntary standard if the Commission concludes that more stringent requirements would further reduce the risk of injury associated with the product. The term “durable infant or toddler product” is defined in section 104(f)(1) of the CPSIA as a durable product intended for use, or that may be reasonably expected to be used, by children under the age of 5 years. Infant swings are one of the products specifically identified in section 104(f)(2)(K) of the CPSIA as a durable infant or toddler product.

In the *Federal Register* of February 29, 2012, the Commission published a notice of proposed rulemaking (NPR) that proposed incorporating by reference ASTM F2088 - 11b, *Standard Consumer Safety Specification for Infant Swings*, with several modifications to strengthen the standard. 77 FR 7011. In this document, the Commission is issuing a safety standard for infant swings, which incorporates by reference, the new voluntary standard developed by ASTM International (formerly the American Society for Testing Materials), ASTM F2088 - 12a, *Standard Consumer Safety*

Specification for Infant Swings, with the addition of a labeling modification to strengthen the standard.

We summarize the final rule (including differences between the proposal and the final rule) in section F of this preamble. The information discussed in this preamble comes from CPSC staff's briefing package for the infant swing rule, which is available on the CPSC's website at [INSERT LINK LATER].

B. The Product

1. Definition

ASTM F2088 - 12a, and its predecessors, ASTM F2088 - 11b and ASTM F2088 - 12, define an "infant swing" as "a stationary unit with a frame and powered mechanism that enables an infant to swing in a seated position. An infant swing is intended for use with infants from birth until a child is able to sit up unassisted." ASTM F2088 - 12a, and its predecessors, ASTM F2088 - 11b and ASTM F2088 - 12, also address "cradle swings," which are defined as "an infant swing which is intended for use by a child lying flat" and "travel swings," which are defined as "a low profile, compact swing having a distance of 6 in. or less between the underside of the seat bottom and the support surface (floor) at any point in the seat's range of motion." The standard was developed in response to incident data supplied by CPSC staff to address hazards such as: swings tipping over or collapsing, structural failures, entanglement in the restraints, and entrapment in leg holes.

2. The Market

Based on a 2005 survey conducted by American Baby Group, titled, "2006 Baby Products Tracking Study," and Centers for Disease Control and Prevention birth data, we

estimate that approximately 2.7 million infant swings are sold in the United States each year. We estimate that there are at least 10 manufacturers or importers supplying infant swings to the U.S. market. Eight firms are domestic manufacturers, and two are domestic importers with a foreign parent company.

The Juvenile Products Manufacturers Association (JPMA) is the major U.S. trade association that represents juvenile product manufacturers and importers. The JPMA provides a certification program that allows manufacturers and importers to use the JPMA seal if they voluntarily submit their products for testing to an independent laboratory to determine if their products meet the most current ASTM voluntary standard. Currently, there are five manufacturers that sell JPMA-certified infant swings.

C. Incident Data

1. Introduction

The preamble to the NPR (77 FR 7012 through 7013) summarized the data for incidents with infant swings from January 1, 2002, through May 18, 2011. In this section, we discuss CPSC staff's analysis of incidents collected between May 19, 2011 and May 23, 2012. During that period, 351 new infant swing-related incidents were reported to the CPSC. Almost all were reported to have occurred between 2009 and 2012. The majority (333 out of 351 or 95 percent) of the reports were submitted to the CPSC by retailers and manufacturers through the CPSC's "Retailer Reporting System." The remaining 18 incident reports were submitted to the CPSC from various sources, such as the CPSC Hotline, Internet reports, newspaper clippings, medical examiners, and other state/local authorities. Two of the 351 incidents were fatal, and 349 were nonfatal; 24 of the nonfatal incidents resulted in injuries.

2. Fatalities

Of the two decedents in the fatal incidents, one was a 2-month-old who died when a blanket placed in the swing obstructed his airway, and the other was a 3-month-old who died when she rolled over to a prone position onto the soft surface of the infant swing. The report did not state whether a restraint was in use at the time of the latter incident.

3. Nonfatal Incidents

There were 24 injuries reported among the 349 nonfatal incidents. Among the injured, 79 percent were 6 months old or younger; the remaining injured infants were 7 and 8 months of age. Some reports specifically mentioned the type of injury, while others only mentioned an injury with no specifics. Among the injuries specified, bumps, bruises, and lacerations were common. None required hospitalization. Most of the injuries were related to various product-related issues, such as swing seat, structural integrity, or restraint, similar to those reported and addressed in the NPR and the latest version of the voluntary standard.

4. National Injury Estimates¹

There were an estimated total of 1,900 injuries (sample size=73, coefficient of variation=0.18) related to infant swings that were treated in U.S. hospital emergency departments during 2011. Although this reflects a decrease from the 2010 estimate of 2,200 injuries, the change was not statistically significant. Comparing with national

¹ The source of the injury estimates is the National Electronic Injury Surveillance System (NEISS), a statistically valid injury surveillance system. NEISS injury data is gathered from emergency departments of hospitals that are selected as a probability sample of all the U.S. hospitals with emergency departments. The surveillance data gathered from the sample hospitals enable CPSC staff to make timely national estimates of the number of injuries associated with specific consumer products.

injury estimates from the prior years, no statistically significant trend was observed over the 2002–2011 period.

No deaths were reported through the NEISS. About 78 percent of the injured were 6 months of age or younger, and about 91 percent were 12 months or younger. For the emergency department-treated injuries related to infant swings, the following characteristics occurred most frequently:

- Hazard – falls (78%); a majority of the reports did not specify the manner or cause of fall;
- Injured body part – head (62%);
- Injury type – internal organ injury (59%); and
- Disposition – treated and released (97%).

5. Hazard Pattern Characterization Based on Incident Data

The hazard patterns identified among the 351 new incident reports were similar to the hazard patterns that were identified among the incidents considered for the NPR. Most of the issues were determined to be product related. They are grouped as follows (in descending order of frequency of incidents):

- *Swing seat issues*, either seat design or seat failure, were the most commonly reported hazard, accounting for 25 percent of the 351 incident reports and four (17 percent) injuries. Seat design issues caused the seats to lean to one side, or tilt forward or backward. Seat failures resulted in seats folding up on the infant, seat pads not staying in place, or seats falling off with no other apparent component failure. With seats that leaned to one side, the infant bumped into the swing frame; with the seat failures, the infant almost always fell out of the swing.

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- ***Broken, detached, or loose components of the swing housing***, such as the arm, leg, motor housing, or hardware, were the next most commonly reported problems. They accounted for 24 percent of the 351 incident reports and five (21 percent) injuries.
- ***Restraint issues***, either the inadequate design of the restraint or the failure of the restraint, were reported in 23 percent of the 351 reported incidents. These issues resulted in the highest proportion of injuries (10 injuries or 42 percent). Common restraint-design scenarios included: (1) infant falling (or nearly falling) out of the seat when leaning forward or sideways; and (2) infant putting more weight toward the back of the seat, causing the seat to tilt back and the restraint failing to prevent the infant from sliding out on his/her head. Common restraint-failure scenarios included buckles or straps breaking or detaching from the product altogether.
- ***Electrical or battery-related issues*** were reported in 15 percent of the 351 reports. Overheating of the motor housing was the most common scenario. However, there were no injuries reported related to this issue.
- ***Instability of the swing*** was reported in 5 percent of the incident reports. In most of these cases, the swing was described as lifting up one leg when swinging, or tipping over completely. The latter scenario resulted in one injury.
- ***Other product-related issues***, such as inadequate clearance between seat and swing frame, broken or detached toys and mobiles, and problems with swing speed, seat fabric, and assembly instructions were reported in 6 percent of the 351 incidents. One injury was reported.

- *Miscellaneous other issues* accounted for the remaining 2 percent of the 351 incident reports. This category includes the two fatalities, which were determined to be non-product-related. Also in this category were five reports with insufficient information to characterize any specific hazard, and one report of product misuse, such as the intentional removal of the restraint; these nonfatal incidents resulted in three injuries.

D. Response to Comments on the Proposed Rule

Below, we describe and respond to the comments on the proposed rule. A summary of each of the commenter's topics is presented, and each topic is followed by our response. Each "Comment" is numbered to help distinguish between different topics. The number assigned to each comment is for organizational purposes only, and it does not signify the comment's value, or importance, or the order in which it was received. We received 24 comments. All of the comments can be viewed on www.regulations.gov, by searching under the docket number of the rulemaking, CPSC-2012-0011.

1. Slump-over warning label

(Comment 1) Sixteen comments recommend that the text of the warning specify or clarify the hazard or the consequences of not avoiding the hazard. Comments about the need to specify the consequences of not avoiding the hazard generally recommend that the warning state explicitly that there is a risk of serious injury, death, or both. Comments about the need to clarify the hazard suggest explicit references to "asphyxiation" or "choking," or suggest references to the slump-over position or to a

hunched position with the “chin touching chest.” Several of the comments recommend that the warning specify the ages of the children at risk.

(Response 1) We believe that the current warning language requirements pertaining to the slump-over hazard are insufficient and agree that the warning should be revised to clarify the hazard and the consequences of exposure to the hazard if the consumer cannot avoid it. The current warning statement does not describe the slump-over hazard, and the formatting of the warning implies that using the swing in the most reclined seat position is an additional measure intended to address the potential for the infant user to fall or strangle in the straps. In addition, one could argue that the warning statement does not describe the probable consequences of not avoiding the slump-over hazard because the warning’s reference to “serious injury or death” is specific to falls and strangulations.

The final rule separates the warning statement pertaining to the slump-over hazard from the warnings about falls and strangulations and strengthens this warning statement as follows:

Keep swing seat fully reclined until child is at least 4 months old AND can hold up head without help. Young infants have limited head and neck control. If seat is too upright, infant’s head can drop forward, compress the airway, and result in DEATH.

2. Warning concerning use of cradle swing

(Comment 2) Five comments recommend that the warning should state that infants who cannot hold up their heads unassisted should use only cradle swings. One comment states that such a change would not substantially reduce the risk.

(Response 2) The proposed revisions to the slump-over warning statement already improve the relevant warning statement in ASTM F2088 - 12a, by describing the hazard more explicitly, the consequences of exposure to the hazard, and the infants who are most

at risk. The language, “*Keep swing seat fully reclined* until child is at least 4 months old AND can hold up head without help” (emphasis added) is the part of the revised slump-over warning intended to communicate the appropriate hazard-avoidance behavior.

Several comments recommend that the highlighted portion of this statement be replaced with one that instructs consumers to use only cradle swings.² The effectiveness of this change, therefore, depends upon whether the use of a cradle swing with these children would address more incidents than fully reclining the seat back on non-cradle swings.

As noted in the staff’s briefing package for the NPR, all known swing fatalities occurred when the child was in the infant seat mode rather than the cradle mode. However, CPSC staff concluded that, for infant swings having an adjustable seat recline with a seat back angle greater than 50 degrees, fully reclining the seat back until the infant can hold up his or her head unassisted also would address the slump-over hazard. Thus, we doubt that a warning that tells consumers to use only cradle swings will be more effective than one that tells consumers to recline the seat fully.

3. Warning on all swings

(*Comment 3*) Five comments request that all infant swings, not just reclining models with a seat back angle greater than 50 degrees, bear a warning related to the slump-over hazard. One of these comments recommends that all reclining swings, regardless of the seat back angle, warn about placing the seat in the most reclined position for infants who are younger than 3 months or who cannot hold up their heads without assistance. The remaining comments recommend that certain swings bear a warning prohibiting their use with infants who are younger than 3 months or who cannot hold up their heads without

² Section 3.1.2 of ASTM F2088 – 12a defines a “cradle swing” as “an infant swing which is intended for use by a child lying flat.”

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assistance. Of these, one recommends that such a warning be present on all infant swings that do not lie “flat”; one recommends displaying the warning for all reclining swings, regardless of the seat back angle; two recommend that such a warning be present on all non-reclining models; and one of these two comments also recommends displaying the warning for all reclining models with seat back angles less than 50 degrees.

(Response 3) As far as the Commission knows, all infant swings currently on the market are either cradle swings or reclining swings with a maximum seat back angle greater than 50 degrees from horizontal when measured in accordance with the ASTM standard. We are unaware of any reclining swings with a maximum seat back angle less than 50 degrees from horizontal. Therefore, all reclining infant swings would bear the warning label recommending that the seat be placed in the most reclined position for infants who are younger than 4 months or who cannot hold up their heads without assistance. As noted earlier, CPSC staff has concluded that fully reclining the seat back on reclining swings with a seat back angle greater than 50 degrees addresses the slump-over hazard. Thus, although the final rule would not prevent manufacturers from including the warning on reclining swings with a maximum seat back angle less than 50 degrees from horizontal, we do not believe that mandating such a warning on these products is necessary. Cradle swings would not require the warning label because the seat back angle on these swings is not inclined enough to create the slump-over hazard.

4. Use of pictures or visual aids

(Comment 4) Two comments recommend the use of pictures or visual aids to clarify the warning message. One of these comments suggests that this recommendation was

intended for parents whose primary language is not English, or who are not familiar with measurements described in degrees.

(Response 4) We acknowledge that well-designed graphics might be useful to illustrate the appropriate orientation of the seat back when the infant swing is used with children 3 months old and younger. However, we are not convinced that a graphic is necessary to convey this message to most consumers, and CPSC staff's prior analyses of the incident data associated with infant swings has not revealed a pattern of incidents involving people who were not literate in English. Moreover, the design of effective graphics can be difficult. Some seemingly obvious graphics are poorly understood and can give rise to interpretations that are opposite the intended meaning (so-called "critical confusions"). Thus, although the Commission may take action in the future if it believes graphic symbols are needed to reduce further the risk of injury associated with these products, the rule permits, but does not mandate, such supporting graphics.

Lastly, although the slump-over warning statement would be required on infant swings that have an adjustable seat recline with a seat back angle greater than 50 degrees, the warning statement itself is not required to reference this 50-degree measurement. The final rule does not include any revisions to the slump-over warning statement that would introduce reference to "degrees."

5. Age recommendations to recline settings

(Comment 5) One comment recommends that the infant swing recline settings include age recommendations. However, this commenter also acknowledges that developmentally delayed infants may be endangered when the parent or caregiver follows the age-recommended settings.

(Response 5) The new warning label wording in the final rule explicitly directs consumers to use the swing in the most reclined position until the infant is 4 months of age and can hold their head up without help. Once the infant is able to do this, the swing can be used in any of the other settings. Therefore, adding age recommendations to the swing settings is not necessary.

6. Additional languages on warning labels

(Comment 6) One comment recommends that the slump-over warning be required to be printed in languages in addition to English. The comment suggests that the warning should be in English and Spanish at least.

(Response 6) The Commission does not dismiss the potential usefulness of providing the slump-over warning and other warning information in Spanish and other non-English languages, and it recognizes that adding Spanish versions of the warnings most likely would improve warning readability among the U.S. population more than adding any other language. Nevertheless, as noted in the response to comment 4 above, CPSC staff's prior analyses of the incident data associated with infant swings has not revealed a pattern of incidents involving people who were not literate in English. Thus, although the final rule does not prohibit manufacturers from providing the required warnings in languages other than English, the available information provides no basis for mandating that manufacturers do so.

7. Additional warning on the label

(Comment 7) Two comments state that the product should include warnings about the importance of using the restraint system. One of these comments recommends the use of the phrase: "DO NOT PLACE INFANT IN SWING WITHOUT SECURING

RESTRAINTS.” The other comment states that the warnings should “address the risks associated with a caregiver’s failure to properly employ the use of restraints while the swing is in use.” One additional comment uses “failing to use the restraint system” as an example of product misuse, which should be warned against.

(Response 7) Section 8.3.1 of ASTM F2088–12a already warns about the potential for “serious injury or death from infants falling or being strangled in straps” and instructs consumers: “[a]lways secure infant in the restraint system provided.” In addition, the latter statement is nearly identical to the specific phrase recommended in the first comment cited in the comment summary. Thus, we believe that the current warning statements about this hazard are sufficient.

We do not believe that the product should include warnings about general product misuse. Consumers are less likely to read numerous warnings, especially about hazards that are highly unlikely. Therefore, warning about general product misuse or about numerous instances of product misuse that, individually, are very rare, would increase the likelihood that consumers will not receive the most important hazard information for the product.

8. Warnings against sleeping in swings

(Comment 8) Three comments state that the product should warn against allowing infants to sleep in the swing. One of the comments suggests that the following language be added to the warning: “Do not use the swing for routine sleep.”

(Response 8) We do not believe that warning statements about not allowing infants to sleep in the swing should be added. CPSC staff’s prior review of the available incident data suggests that the angle of the seat back is more relevant to the potential for slump-

over deaths and that adjusting the seat back to the most reclined position would have addressed these incidents. The warnings already include a statement about adjusting the seat back to the most reclined position for those children most at risk of slumping over, and the final rule revises the warning statement to clarify this message. Thus, we believe that warnings about not sleeping in infant swings are unlikely to reduce further the incidence of slump-over deaths; additionally, the data do not support mandating such a warning.

9. Warnings limiting swing use

(Comment 9) One comment recommends that there be warnings about limiting the amount of time that infants spend in the swing for “health and developmental concerns,” namely, positional/deformational plagiocephaly and developmental delays from a lack of “tummy time.”

(Response 9) Warnings are safety communications intended to inform consumers about hazards, with the ultimate goal of reducing injuries and deaths. Thus, while there may be exceptions, one generally should not provide a warning, unless a significant hazard exists. We are not aware of any reported incidents of positional/deformational plagiocephaly involving infant swings. Even if one presumes that such an association exists, CPSC staff has confirmed that this condition does not pose a hazard to infants. Similarly, developmental delays from a lack of “tummy time” are not hazards *per se*, and they do not directly lead to injuries or deaths. Consequently, we do not believe that this issue rises to the level that such a mandatory warning on the product is necessary.

10. Seat deflection warning

(Comment 10) One comment recommends that swings supported by a single arm include a warning about the increased likelihood of seat deflection.

(Response 10) We do not believe that a warning about an increased likelihood of seat deflection is necessary for single-arm infant swings. Since publication of the NPR, CPSC staff has worked with the ASTM Subcommittee on Infant Swings to develop new, improved performance requirements intended to address seat deflection. We believe that these requirements, which are part of the final rule, will effectively address the risk associated with seat deflection, and therefore, eliminate the need for a warning.

11. Electrical cord strangulation warning

(Comment 11) One comment recommends that all swings with AC or electrical power cords include a warning label on the cords similar to that in the baby monitor standard, which warns about the strangulation hazard that such cords pose.

(Response 11) We do not believe that mandating a strangulation warning on the AC or electrical power cords that might accompany certain infant swings is appropriate at this time. The recently published voluntary standard for baby monitors, ASTM F2951 - 12, *Standard Consumer Safety Specification for Baby Monitors*, does require strangulation warnings on the cords of baby monitors, but specifies different warnings, depending on whether the product is intended to be attached to a crib or not. For transmitters that are not intended to be attached to a crib, the warning instructs consumers to keep the cord more than 3 feet away from the child. For transmitters that are intended to be attached to a crib—a situation more analogous to an infant swing that holds the infant and has an electrical power cord attached—the warning instructs consumers to use the manufacturer-supplied protective cord covering at all times. However, infant swings are not required to

provide protective coverings for electrical power cords, so it is unclear how consumers would comply with such a warning.

A general warning about the risk of strangulation from these cords when the child is in the product might be more reasonable. However, we are not aware of any incidents associated with this hazard scenario involving infant swings, which suggests that this hazard does not rise to the level that a mandatory warning is necessary. Manufacturers of infant swings with cords are free to include strangulation warnings on their cords, and we can revisit the possibility of mandating such warnings if future incident data show that doing so would be appropriate.

12. Dynamic and static tests

(Comment 12) One comment states that the CPSC-proposed rule would require the tester to use a 75-lb weight and to drop it 500 times on the swing seat. The comment questions the new test method's predictive ability to replicate real-world conditions and injuries, because, the commenter states, the ASTM standard required a 25-lb weight dropped 50 times onto the seat. Next, the comment suggests that the total number of drops could be increased beyond the current 500 drops. The total number of drops could be based on a consumer survey, asking parents how many times a day they put their baby in the swing and whether they used it for one or more babies. Lastly, the comment states that it is unclear why the test involves dropping. The force of an impact, especially with a drop mass of 75 lbs repeated 500 times, could weaken the infant swing at an unreasonable and unrepresentative rate. The comment recommends instead that the test should measure the effect of a static mass placed in the seat over a period of time. Another comment

questions the 75-lb requirement in the static load test and requests the justification for this requirement.

(Response 12) The current ASTM standard, F2088-12a, has adopted the CPSC staff recommendation to increase the number of drops from 50 to 500 in the dynamic load test. The additional cycles were based on CPSC staff testing, which included life cycle testing. We believe a cyclic test of 500 drops is an appropriate test to evaluate the potential for structural failure in an infant swing. Continued testing beyond 500 cycles did not reveal any new issues, and it may place an unnecessary burden on the manufacturers and test labs. Additionally, the dynamic test specifies a 25-lb load not a 75-lb load, as suggested by the comment. The 25-lb load is the approximate weight of a 95th percentile 10- to 12 month-old child, and we agree with the rationale listed in the appendix of ASTM F2088-12a. The static load test included in the standard is the only test that calls for the application of a 75-lb load in the seat. The 75-lb static load has been part of the voluntary standard since its inception in 2001; this is not something newly added by the CPSC.

Finally, the dynamic test drop height is 1 inch. We consider the forces applied from this drop to be consistent with actual forces associated with swing use. Performing the dynamic test as specified in the standard ensures consistent, repeatable testing results. Together, these tests are intended to evaluate the structural integrity of the infant swing, and we believe they are sufficient to address structural issues that would occur over the life of the product.

13. Product misassembly

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(Comment 13) One comment states: “Because of the constant use/storage/lending use pattern of swings, we recommend that CPSC consider including additional requirements in the standard for infant swings, such as the provisions in the crib standard that seek to reduce hardware loss or misassembly. This could include requiring hardware that doesn’t back out or become loose, captive hardware, performance requirements to avoid misassembly, and a method to make sure instructions stay with the product.”

(Response 13) The CPSC has considered or addressed misassembly issues in the standards for bassinets, play yards, and cribs, based on reported incidents and known usage patterns. We are aware of these hazard patterns in other juvenile product incidents, but we have concluded that ASTM has sufficiently addressed these issues by requiring that all threaded fasteners connecting structural components have a locking mechanism, such as lock washers, self-locking nuts, or other features designed to prevent detachment due to vibration. A product evaluation by CPSC staff revealed that many current swing designs use other means, such as Valco-type (push) button fasteners, which are permanently attached to the respective component. In most swing designs, misassembly of a swing would make the frame overtly unstable or result in an unnatural appearance that would be obvious to the consumer. The addition of a misassembly requirement would add a testing requirement for an incident pattern that is not evident among the incidents reported and that is addressed by the existing standard.

14. Seat deflection

(Comment 14) Multiple comments question the seat deflection test and how it relates to injury reduction. Individual comments suggest including a second test to account for the potential of increased deflection over the life of the product. Another comment states

that the CPSC did not explain why the agency chose 4 inches as its performance requirement.

(Response 14) Seat deflection is a design issue that should be addressed during the product's development and verified with standard testing. The seat deflection test proposed by the Commission was a preliminary test procedure under development at the time of the NPR. CPSC staff has continued to work with ASTM to refine the seat deflection test for infant swings. ASTM's latest standard includes a new test methodology and performance requirements that measure various seat angles, as was suggested by one commenter, and it addresses satisfactorily the seat deflection issues raised by CPSC staff.

15. Electrical requirements

(Comment 15) One comment states that infant swings are not designed to be operated by children. Instead, the comment states that infant swings are designed to be *used* by children, but they are designed to be *operated* by adults. Therefore, the comment asserts that infant swings are not subject to 16 CFR part 1505, *Requirements for electronically operated toys or other electrically operated articles intended for use by children*.

According to the comment, third party laboratories have been interpreting 16 CFR part 1505 in this manner for many years. Adding a new interpretation to 16 CFR part 1505, the comment suggests, would create confusion and would be inconsistent with test protocols currently employed.

(Response 15) While the NPR proposed that swings operating from an a/c power source be required to conform to 16 CFR 1505, ASTM reworded the provision in ASTM F2088 - 12a to address the issue of assuring that AC adapters meet all national safety standards.

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We agree with the new language contained in ASTM F2088 – 12a, which is being incorporated into the final rule. Therefore, it is unnecessary to include any reference to part 1505 in the final rule.

16. Compliant product marking

(Comment 16) One comment recommends that the CPSC consider adding a marking on products that are manufactured after the effective date so that consumers can clearly identify new products that meet the new mandatory standard.

(Response 16) A date code is already required to be on the product under section 8.1.3 of ASTM F 2088 - 12a and under the requirements for consumer registration of durable infant or toddler products in 16 CFR §1130.3. In addition, future changes to the standard may come into effect. Because it is not practicable to delineate every change to the standard through a new mark on the product, we decline to take such action.

17. Regulation coverage

(Comment 17) One comment states: “. . . the pre-existing voluntary standards unaddressed by the new regulation is [sic] the sweeping definition that places all infant swings in the same category for children up to the age of five.”

(Response 17) The proposed rule and the voluntary standard both indicate that the infant swings are “*intended for use with infants from birth until a child is able to sit up unassisted.*” The comment may have misunderstood the reference in the *Federal Register* notice, where the “*definition of a 'durable infant or toddler product' is defined in section 104(f)(1) of the CPSIA as a durable product intended for use, or that may be reasonably expected to be used, by children under the age of 5 years.*”

18. The Regulatory Flexibility Act

(Comment 18) One comment states that CPSC staff should try “to obtain a more accurate number of manufacturers who do not meet the ASTM standard” and suggests that we “count those manufacturers that sell at major retailers that require ASTM compliance” as well. The comment states that because “just ten firms are making or importing swings, CPSC could easily get direct information that would more clearly identify costs.”

(Response 18) We have attempted to obtain accurate estimates of small firms that do not conform to the ASTM voluntary standard for infant swings and information on the likely costs of conformance. Further effort would not change the results of the analysis. Nor is it necessarily easy for firms to estimate prospectively the economic impact that a regulation will have on their costs.

(Comment 19) One commenter states that the regulatory flexibility analysis should consider the effect that a product recall would have on firms “. . . that are not known to be in compliance with the voluntary standard.”

(Response 19) The Regulatory Flexibility Act requires an evaluation of the likely economic impacts of conforming to the standard that is being proposed, not the economic impact of violating the standard. If firms comply with the standard, recalls related to nonconformance would be avoided.

E. ASTM Voluntary Standard

ASTM F2088, “*Standard Consumer Safety Specification for Infant Swings,*” is the voluntary standard that was developed to address the identified hazard patterns associated with the use of infant swings. Section 104(b) of the CPSIA requires the Commission to assess the effectiveness of the voluntary standard in consultation with representatives of consumer groups, juvenile product manufacturers, and other experts. We have consulted

with these groups regarding the ASTM voluntary standard, ASTM F2088, throughout its development. The standard was first approved in 2001, and revised in 2003, 2008, 2009, twice in 2011, and twice in 2012. ASTM F2088 - 11b was the version of the standard referenced in the NPR. In response to the proposed rule, the ASTM Subcommittee on Infant Swings, in collaboration with CPSC staff, approved and published two versions of the standard since publication of the NPR, including, ASTM F2088 - 12a (approved on September 1, 2012, and published in September 2012), which mainly incorporates the proposed modifications in the proposed rule, with a few clarifications and modifications that strengthen the standard. ASTM F2088 - 12a contains more stringent requirements than its predecessor, ASTM F2088 - 11b, and would reduce further the risk of injury associated with infant swings.

F. Assessment of the Voluntary Standard and Description of the Final Rule

1. Changes to Requirements of the ASTM F2088 Voluntary Standard

In the NPR, the Commission proposed safety standards for infant swings based on the voluntary standard for infant swings, ASTM F2088 - 11b. We proposed additional requirements that were intended to strengthen the voluntary standard. *See* 77 FR 12182. Since the publication of this notice, ASTM has published two newer versions of the standard, ASTM F2088 - 12 and ASTM F2088 12a. The newest version, ASTM F 2088 - 12a, includes additional changes that were not addressed previously, modifies the CPSC proposed language, or adopts the proposal, with some differences.

The final rule incorporates by reference ASTM F2088 - 12a as a mandatory standard, with one modification. Some of the more significant requirements of ASTM

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F2088 - 12a are listed below. The requirements that have been added to the ASTM voluntary standard since the NPR are in italics:

- Stability test—intended to prevent tip over. Swing models that rotate about the horizontal axis are positioned on an inclined surface with the swing facing forward and then facing backward. Swings that do not rotate about the horizontal axis are tested in the position most likely to fail. *This was modified in ASTM F2088 - 12 to clarify the test procedure, as proposed by the Commission in the NPR.*
- Test to prevent unintentional folding—intended to ensure that any locking/latching mechanisms remain functional after testing.
- Tests on restraint system—intended to prevent slippage and breakage during regular use.
- Requirements for cradle swing orientation—intended to ensure that the surface remains relatively flat both while in motion and while at rest.
- Requirements for *electrically powered* swings—intended to prevent leakage and otherwise protect consumers. *These requirements originally applied only to battery-operated swings but were expanded in ASTM F2088 - 12 to encompass all electrically powered swings, as proposed by the Commission in the NPR. ASTM F2088 - 12a extends the compliance requirements of all AC adaptors and includes a list of accepted national safety standards. There are also some editorial differences between the NPR and ASTM F2088 - 12a.*
- Requirement for toy mobiles—intended to ensure that toys within a child's reach do not detach when pulled. This requirement was new to the 2011a

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standard *and was modified for the 2012 standard to prevent detachment when pulled horizontally as well (as proposed in the February 2012 NPR).*

- Shoulder strap requirement—In the NPR, we proposed that shoulder straps be required for swing seats with angles greater than 50 degrees. *The seat back angle measurement procedure has been updated since the NPR. Now it addresses the issues that the CPSC proposed to address with the seat deflection test included in the NPR. Now it now addresses seats that fold up or tilt, by limiting the severity of angles created by the seat and seat back, or by requiring shoulder straps as part of the restraint system.*
- Dynamic and static load requirements—intended to ensure that the infant swing can support these loads without breaking. *The dynamic load test procedure was modified in F2088 - 12 to mirror proposed changes in the February 2012 NPR, including increasing the number of times the weight is dropped.*

The voluntary standard also includes: (1) torque and tension tests to ensure that components cannot be removed; (2) requirements for several infant swing features to prevent entrapment and cuts (minimum and maximum opening size, small parts, exposed coil springs, protective components, hazardous sharp edges or points, and edges that can scissor, shear, or pinch); (3) requirements for the permanency and adhesion of labels; (4) a leg opening test to ensure that occupants cannot slide out; (5) requirements for instructional literature; and (6) restraint system requirements. Additionally, all testing must be performed without adjusting or repositioning the swing, and swings with multiple seat configurations must be placed in the most disadvantageous position for

testing. The following is a discussion of how the new standard addresses the issues raised in the NPR.

a. Seat Deflection

The Commission proposed a preliminary test procedure to address the seat deflection issue and specifically asked for comments on the proposed test method in the NPR. In addition, the CPSC continued to work with ASTM to refine the seat deflection test for infant swings. ASTM F2088 - 12a includes new language that contains a more comprehensive requirement based on maximum seat angle specifications, which includes additional seat back angle measurements or shoulder strap requirements. We believe this requirement addresses more adequately the incidents where a child falls out of the seat due to seat deflection.

b. Stability testing

We raised two issues in the NPR regarding stability testing and both are addressed in ASTM F2088 - 12a. ASTM F2088 - 12a has added the requirement for testing of alternative swing designs in the worst-case orientation, as recommended by the Commission. So now not only are traditional horizontal access swings tested for stability, but also nontraditional, alternative designs with other than a horizontal axis of swing motion must also be tested to the new requirements.

The second stability issue the CPSC raised was intended to refine the testing on swings with “L-” shaped cantilevered legs. The CPSC raised the issue out of concern that a test lab could interpret this test to require that the force be applied at the end of the “L-” shaped leg that is not in the vertical plane of the latch. In this case, the maximum force normally associated with folding is at the end of the leg vertically under the latch.

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However, after further discussions with ASTM, we have concluded that the current wording allows testing to be performed as stated in the NPR, and the proper testing location for this design is readily apparent to all involved. Therefore, the infant swing unintentional folding test statement proposed in the NPR, as a clarification to the existing test procedure, is not included in the final rule.

c. Electrical overload requirements

The NPR proposed electrical testing requirements to reduce the likelihood of overloading electrical components, battery leakage, or electrical failures that could lead to fire. As part of these requirements, ASTM F2088 - 12a does not include the following statement: “The test shall be conducted using a new swing.” However, the testing on swing samples is done largely independent of the electrical components. Therefore, the electrical components on a swing sample normally can be considered “new,” even after other components have been tested. By accepting deletion of that statement, the number of samples required to complete a test is reduced. We accept the electrical overload requirement—as stated in ASTM F2088 - 12a—as sufficient.

d. Dynamic drop test cycles

The NPR proposed increasing the dynamic drop test cycles from 50 to 500 cycles to improve structural integrity and reveal potential structural issues of the swing components. Increasing the number of dynamic impact cycles to which the swing will be tested will reduce the possibility of structural failures, and it is expected to lead to a decrease in the number and severity of injuries. ASTM included this change in ASTM F2088 - 12a.

e. Modify mobile and toy retention requirements

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The NPR proposed modifying mobile and toy retention requirements to allow the force to be applied in any direction at or below the horizontal plane, in the orientation most likely to fail. This change is contained in ASTM F2088 - 12a.

f. Other changes to ASTM F2088 - 12 and 12a

In addition to the changes discussed above, in response to the NPR, ASTM made two other changes to ASTM F2088 - 12 and 12a, which we find acceptable. One change deals with the seat back recline fixture. ASTM accepted CPSC staff's recommendation to use steel plates—as opposed to wood boards—for the seat back recline fixture and then added more design changes to adjust the center of gravity of the fixture to approximate more accurately the weight distribution of an actual child. The device is now identified as the “Hinged Weight Gage–Infant,” and a drawing of the figure is included in the ASTM standard. This change will improve the accuracy of testing, and therefore, improve the safety of the standard. This change was not proposed in the NPR, but it was developed with the participation of CPSC staff.

The other issue ASTM addressed was a clarification to the AC adapters supplied with the product. ASTM F2088 - 12 states: “*6.1.5 AC adapters supplied with the product must be compliant with the appropriate current national standard for AC adapters.*” ASTM received a number of comments after ASTM F2088 - 12 was published, asking for clarification of what “appropriate current national standard” meant in the requirement. ASTM added new wording and a note to make this clearer, and ASTM F2088 - 12a includes those changes. We find these changes to be acceptable.

2. Description of the Final Rule

a. Section 1223.1 - Scope

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Section 1223.1 of the final rule states that part 1223 establishes a consumer product safety standard for infant swings. We received no comments on this provision and are finalizing it without change.

b. Section 1223.2 – Requirements for Infant Swings

Section 1223.2(a) of the final rule provides language to incorporate by reference ASTM F2088 - 12a, *Standard Consumer Safety Specification for Infant Swings*. Section 1223.2(a) also provides information on how to obtain a copy of the ASTM standard or to inspect a copy of the standard at the CPSC or National Archives and Records Administration. We received no comments on this provision, but we are changing the language in the incorporation in the final rule to refer to ASTM F2088 - 12a, the current version of the standard.

In the NPR, § 1223.2(b) proposed to add two new requirements to ASTM F2088 - 11b to make the standard more stringent than the current voluntary standard and to reduce the risk of injury associated with infant swings: (1) a performance requirement and test method to address electrical overload in infant swing motors and batteries, as well as an accessible component temperature requirement and a requirement to ensure that swings that run on a/c power are safe; and (2) a performance requirement and test method to address seat deflection. We also proposed two major modifications to ASTM F2088 - 11b that would make the standard more stringent than the voluntary standard at that time and would reduce the risk of injury associated with infant swings: (1) an increase in the number of test cycles used in the dynamic load test, from 50 cycles to 500 cycles, and (2) a modification to the mobile test to account for mobiles that can be pulled in downward directions other than straight down vertically. Finally, in proposed § 1223.2(b) of the

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NPR, we proposed to clarify the test methods for the dynamic load test, the stability test, the unintentional folding test, and the seat back angle measurement method.

As discussed in the previous section of this preamble, the additional requirements in proposed § 1223.2(b) either have been incorporated into ASTM F2088 - 12a, or we are satisfied with ASTM's changes from the proposal or explanations regarding why some proposals were not necessary. Therefore, the language in proposed § 1223.2(b) of the NPR is no longer necessary.

Finally, as discussed previously in the response to comment 1 in section D of this preamble, we received many comments regarding the inadequacy of the slump-over warnings in section 8.3 of ASTM F2088 - 11b. Section 8.3 of ASTM F2088 - 12a contains the identical slump-over warning contained in section 8.3 of ASTM F2088 - 11b that we proposed in the NPR. We agree that the current warning language requirements pertaining to the slump-over hazard in ASTM F2088 - 12a are insufficient and that the warning should be revised to clarify the hazard and the consequences of exposure to the hazard if the consumer cannot avoid it. The warning statement required in ASTM F2088 - 12a does not describe the slump-over hazard, and the formatting of the warning implies that using the swing in the most reclined seat position is an additional measure intended to address the potential for the infant user to fall or strangle in the straps. In addition, one could argue that the warning statement does not describe the probable consequences of not avoiding the slump-over hazard because the warning's reference to "serious injury or death" is specific to falls and strangulations.

Therefore, in place of the language proposed in § 1223.2(b) of the NPR, § 1223(b)(1) of the final rule requires that infant swings must comply with the ASTM

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F2088 - 12a standard with one exception. Instead of complying with section 8.3.1 of ASTM F 2088-12a, infants swings are required to have warning statements for products that have an adjustable seat recline with a maximum seat back angle greater than 50 degrees from horizontal, measured in accordance with 7.13 of ASTM F 2088 - 12a, that address the following:

Keep swing seat fully reclined until child is at least 4 months old AND can hold up head without help. Young infants have limited head and neck control. If seat is too upright, infant's head can drop forward, compress the airway, and result in DEATH.

Additionally, swings must have a warning statement to prevent serious injury or death from infants falling or being strangled in straps:

- Always secure infant in the restraint system provided.
- Never leave infant unattended in swing.
- Discontinue use of swing when infant attempts to climb out.

Finally, travel swings are required to have a warning indicating: "Always place swing on floor. Never use on any elevated surface."

G. Effective Date

The Administrative Procedure Act (APA) generally requires that the effective date of the rule to be at least 30 days after publication of the final rule. 5 U.S.C. 553(d). The preamble to the proposed rule indicated that the standard would become effective 6 months after publication of the rule in the *Federal Register*. We sought comment on how long it would take infant swing manufacturers to come into compliance. We received one comment stating that the Commission should "... consider extending the effective date to one year to help minimize a possibility of a substantial loss of revenue from the potential product recalls on the small manufacturers and importers." Almost all of the

requirements proposed in the NPR were incorporated into ASTM F2088 - 12a, and the final rule differs from the proposed rule only in the requirement that an additional warning label regarding use has been added. Therefore, we believe that an effective date of 6 months after publication of the final rule is sufficient to allow for review of the new requirements thoroughly and to ensure that new infant swings manufactured or imported after that date are in compliance with the new requirements. The 6-month effective date is consistent with the effective date established in most other rules issued under section 104 of the CPSIA. Accordingly, the final rule will be effective 6 months after publication in the *Federal Register*, unchanged from the proposed rule.

H. Testing and Certification

Once there is a safety standard in effect for infant swings, it will be unlawful for anyone to manufacture, distribute, or import an infant swing into the United States that is not in conformity with this standard. 15 U.S.C. 2068(1).

In addition, section 14(a)(2) of the CPSA, 15 U.S.C. 2063(a)(2), imposes the requirement that products subject to a children's product safety rule must be tested by a third party conformity assessment body accredited by the Commission to test the product. As discussed in section A of this preamble, section 104(b)(1)(B) of the CPSIA refers to standards issued under this section as "consumer product safety standards." Under section 14(f)(1) of the CPSA, 15 U.S.C. 2063(f)(1), the term "children's product safety rule" includes all standards enforced by the Commission. Thus, the infant swing standard will be a children's product safety rule, subject to third party testing and certification.

The Commission is required to issue a notice of requirements (NOR) to explain how laboratories can become CPSC-accepted third party conformity assessment bodies to

test infant swings to the new safety standard. On May 24, 2012, the Commission published in the *Federal Register* the proposed rule, *Requirements Pertaining to Third Party Conformity Assessment Bodies*, 77 FR 31086, which, when finalized, would establish the general requirements and criteria concerning testing laboratories, including a list of the children's product safety rules for which the CPSC has published NORs for laboratories. The Commission proposed a new NOR for the safety standard for infant swings in that proposed rule. *See* 77 FR at 31113. The final NOR for the safety standard for infant swings will be issued once the final rule for *Requirements Pertaining to Third Party Conformity Assessment Bodies* is published in the *Federal Register*. That final rule will address the issuance of the NOR for infant swings.

I. Regulatory Flexibility Act

1. Introduction

The Regulatory Flexibility Act (RFA) requires that final rules be reviewed for their potential economic impact on small entities, including small businesses. Section 604 of the RFA requires that the Commission prepare a final regulatory flexibility analysis when it promulgates a final rule. The final regulatory flexibility analysis must describe the impact of the rule on small entities and identify any alternatives that may reduce the impact. Specifically, the final regulatory flexibility analysis must contain:

- a succinct statement of the objectives of, and legal basis for, the rule;
- a summary of the significant issues raised by public comments in response to the initial regulatory flexibility analysis, a summary of the assessment of the agency of such issues, and a statement of any changes made in the proposed rule as a result of such comments;

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- a description of, and, where feasible, an estimate of, the number of small entities to which the rule will apply;
- a description of the projected reporting, recordkeeping, and other compliance requirements of the rule, including an estimate of the classes of small entities subject to the requirements and the type of professional skills necessary for the preparation of reports or records; and
- a description of the steps the agency has taken to reduce the significant economic impact on small entities, consistent with the stated objectives of applicable statutes, including a statement of the factual, policy, and legal reasons for selecting the alternative adopted in the rule, and why each one of the other significant alternatives to the rule considered by the agency, which affect the impact on small entities, was rejected.

The NPR for infant swings was based on the voluntary ASTM standard for infant swings ASTM F2088 - 11b. The Commission proposed several modifications, additions, and clarifications at that time. Most of the proposed changes have been incorporated into ASTM F2088 - 12a, which the final rule incorporates by reference, along with one additional change, modifying the slump-over warning.

2. The Market for Swings

Infant swings are typically produced and/or marketed by juvenile product manufacturers and distributors. We estimate that currently, there are at least 9 domestic manufacturers and one domestic importer supplying infant swings to the U.S. market. Infant swings from five of the 10 firms have been certified as compliant with the ASTM voluntary standard ASTM F2088 - 11b by JPMA, the major U.S. trade association that

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represents juvenile product manufacturers and importers. Two additional firms claim compliance with F2088-11b.

Information on annual sales of infant swings can be approximated using information from the 2005 survey conducted by the American Baby Group (*2006 Baby Products Tracking Study*). About 79 percent of new mothers own at least one infant swing—61 percent own full-sized infant swings, and 33 percent own smaller travel infant swings. Approximately 31 percent of full-sized infant swings and 26 percent of travel infant swings were handed down or purchased secondhand. Thus, about 69 percent of full-sized infant swings, and 74 percent of travel infant swings were acquired new. This suggests annual sales of about 2.7 million infant swings to households ($.69 \times .61 \times 4.1$ million births per year + $.74 \times .33 \times 4.1$ million births per year).

Typically, infant swings are used for only a few months early in a child's life. Therefore, we have estimated the risk of injury based on the number of infant swings in the households of new mothers. Based on data from the *2006 Baby Products Tracking Study*, approximately 3.9 million infant swings are owned by new mothers (0.61 percent own full-size x 4.1 million births + 0.33 percent own travel size x 4.1 million births). This suggests that at least 3.9 million infant swings may be available to children during the first year of their lives. During 2011, there were an estimated 1,900 emergency department-treated injuries to children under age 5 related to infant swings. Consequently, there would have been about 4.9 emergency department-treated injuries annually for every 10,000 infant swings available for use in the households of new mothers.

3. Impact of the Standard on Small Businesses

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As noted earlier, there are approximately 10 domestic firms currently known to be producing or selling infant swings in the United States. Under U.S. Small Business Administration (SBA) guidelines, a manufacturer of infant swings is small if it has 500 or fewer employees, and an importer is considered small if it has 100 or fewer employees. Based on these guidelines, five domestic manufacturers are small firms. The remaining firms are four large domestic manufacturers and one large domestic importer. There may be additional unknown small manufacturers and importers operating in the U.S. market.

Small Manufacturers

The expected impact of the final rule on small manufacturers will differ based on whether their infant swings are compliant with ASTM F2088 - 11b. Firms whose infant swings meet the requirements of ASTM F2088 - 11b are generally expected to continue to do so as new versions of the standard are published, typically within 6 months, which is the amount of time JPMA allows for products in their certification program to shift to a new standard. Many of these firms are active in the ASTM standards development process, and compliance with the voluntary standard is part of an established business practice. Therefore, it is likely that firms supplying infant swings that comply with ASTM F2088 - 11b (which went into effect for JPMA certification purposes in May 2012) would also comply with ASTM F2088 - 12a by March 2013, even in the absence of a mandatory standard.

The direct impact on the three known small domestic manufacturers whose infant swings are compliant with ASTM F2088 - 11b is not expected to be significant. Each firm will need to modify the slump-over warning label for their infant swings. This is not generally expected to be costly; although some firms may experience larger costs than

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others, depending upon their label development process, and where the warning labels are affixed on their products. One firm estimates that the one-time cost of changing their labels, including development time and materials, would be approximately \$1,000 per model.

Complying with ASTM F2088 - 12a's requirements could necessitate product redesign for some infant swings believed not to be compliant with ASTM F2088 - 11b. The redesign would be minor if most of the changes involve adding straps and fasteners or using different mesh or fabric; but the redesign could be more significant if changes to the frame are required. Consequently, the final rule potentially could have a significant direct impact on the two small manufacturers of infant swings that are believed not to have conformed to ASTM F2088 - 11b, regardless of how they choose to meet the staff-recommended warning label requirement. One manufacturer estimated that a complete infant swing redesign would cost approximately \$400,000, not including significant overhead costs, such as engineering time, which at \$100 per hour, easily could increase overall redesign costs by \$100,000 or more. However, a complete product redesign is unlikely to be necessary in most cases, and any direct impact may be mitigated if costs are treated as new product expenses that can be amortized.

It is possible that the two firms whose infant swings are neither certified as compliant, nor claim to be compliant with ASTM F2088 - 11b, in fact, are compliant with the standard. We have identified many such cases with other products. To the extent that these firms may supply compliant infant swings and have developed a pattern of compliance with the voluntary standard, the direct impact of the final rule will be less significant than described above.

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Although the direct impact of the final rule should not be significant for most small manufacturers, there are indirect impacts as well. These impacts are considered indirect because they do not arise directly as a consequence of the requirements of the final rule. Nonetheless, these indirect costs could be significant. Once the final rule becomes effective, and the notice of requirements is in effect, all manufacturers will be subject to the additional costs associated with the third party testing and certification requirements. This will include the physical and mechanical test requirements specified in the final rule; lead and phthalates testing is already required, and hence, it is not included here.³

Based on information provided by manufacturers, additional industry input, and information obtained when staff was developing the third party testing rule, third party testing costs for ASTM F2088 - 12a (including toy testing, which is part of the infant swings voluntary standard) are estimated to be around \$900 per model sample. Testing overseas potentially could reduce third party testing costs, but that may not always be practical.

On average, each small domestic infant swing manufacturer supplies six models of infant swings to the U.S. market annually. Therefore, if third party testing was conducted every year, third party testing costs for each manufacturer might add about \$5,400 annually to the manufacturer's costs, assuming only one sample of each model had to be tested. Based on a review of firm revenues, the impact of third party testing to ASTM F2088-12a is unlikely to be significant for small manufacturers unless a large number of samples had to be tested for each model.

Small Importers

³ Infant swing suppliers already must third party test their products to the lead and phthalate requirements. Therefore, these costs already exist and will not be affected by the final infant swings standard.

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CPSC staff was unable to identify any small importers currently operating in the U.S. market. However, if any exist, they would need to find an alternate source of infant swings if their existing supplier does not come into compliance with the requirements of the staff-recommended final rule. They could also discontinue importing any noncomplying infant swings, possibly replacing them with another juvenile product. As is the case with manufacturers, importers will be subject to third party testing and certification requirements; consequently, they would experience costs similar to those for manufacturers, if their supplying foreign firm(s) does not perform third party testing.

i. Alternatives

Under section 104 of the CPSIA, one alternative that would reduce the impact on small entities would be to make the voluntary standard mandatory with no modifications. However, while this alternative would eliminate any additional costs associated with the slump-over label change in the final rule, firms supplying noncompliant infant swings could still require substantial product redesign in order to meet the voluntary standard. Because of the frequency and severity of the incidents associated with slump-over incidents, we do not recommend this alternative.

A second alternative would be to set an effective date later than 6 months. This would allow suppliers additional time to modify and/or develop compliant infant swings and spread the associated costs over a longer period of time. We generally consider 6 months sufficient time for suppliers to come into compliance with a mandatory standard; it is common in the industry, representing the amount of time that the JPMA allows for products in their ASTM certification program to shift to a new standard.

J. Paperwork Reduction Act

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This rule contains information collection requirements that are subject to public comment and review by U.S. Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3520). The preamble to the proposed rule (77 FR 7021 through 7022) discussed the information collection burden of the proposed rule and specifically requested comments on the accuracy of our estimates. We did not receive any comments from the public concerning the information collection burden of the proposal. However, in response to a comment made by OMB, the final rule makes a modification regarding the information collection burden. OMB noted that all 10 firms identified should be considered when accounting for the labeling burden.

As indicated in the NPR (77 FR 7021 through 7022), there are 10 known firms supplying infant swings to the U.S. market. In the NPR, we estimated that five of the 10 firms already made product labels that comply with ASTM F2088. We revise our burden estimate to assume that all 10 firms already use labels on both their products and packaging, but they might need to make some modifications to their existing labels. Based on this revision, our revised burden estimate is as follows: The estimated time required to make these modifications is about 1 hour per model. Each of these firms supplies an average of five different models of infant swings; therefore, the estimated burden hours associated with labels is 1 hour x 10 firms x 5 models per firm = 50 annual hours.

We estimate that hourly compensation for the time required to create and update labels is \$28.36 (U.S. Bureau of Labor Statistics, “Employer Costs for Employee Compensation,” September 2011, Table 9, total compensation for all sales and office workers in goods-producing private industries: <http://www.bls.gov/ncs/>). Therefore, the

estimated annual cost associated with the proposed requirements is \$1,418 (\$28.36 per hour x 50 hours = \$1,418).

We have applied to OMB for a control number for this information collection, and we will publish a notice in the *Federal Register* providing the number when we receive approval from OMB.

K. Preemption

Section 26(a) of the Consumer Product Safety Act (CPSA), 15 U.S.C. 2075(a), provides that where a consumer product safety standard is in effect and applies to a product, no state or political subdivision of a state may either establish or continue in effect a requirement dealing with the same risk of injury unless the state requirement is identical to the federal standard. Section 26(c) of the CPSA also provides that states or political subdivisions of states may apply to the Commission for an exemption from this preemption under certain circumstances. Section 104(b) of the CPSIA refers to the rules to be issued under that section as “consumer product safety rules,” thus implying that the preemptive effect of section 26(a) of the CPSA would apply. Therefore, a rule issued under section 104 of the CPSIA will invoke the preemptive effect of section 26(a) of the CPSA when the rule becomes effective.

H. Environmental Considerations

The Commission’s regulations provide a categorical exclusion for the Commission’s rules from any requirement to prepare an environmental assessment or an environmental impact statement because they “have little or no potential for affecting the human environment.” 16 CFR 1021.5(c)(2). This final rule falls within the categorical

exclusion, so no environmental assessment or environmental impact statement is required.

List of Subjects in 16 CFR Part 1223

Consumer Protection, Imports, Incorporation by Reference, Infants and Children, Labeling, Law Enforcement, Safety and Toys.

Therefore, the Commission amends Title 16 of the Code of Federal Regulations by adding part 1223 to read as follows:

PART 1223-SAFETY STANDARD FOR INFANT SWINGS

Sec.

1223.1 Scope.

1223.2 Requirements for infant swings.

Authority: The Consumer Product Safety Improvement Act of 2008, Pub. L. 110-314, § 104, 122 Stat. 3016 (August 14, 2008).

§ 1223.1 Scope.

This part establishes a consumer product safety standard for infant swings.

§ 1223.2 Requirements for Infant Swings.

(a) Except as provided in paragraph (b) of this section, each infant swing must comply with all applicable provisions of ASTM F2088 - 12a, Standard Consumer Safety Specification for Infant Swings, approved on September 1, 2012. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. You may obtain a copy from ASTM International, 100 Bar Harbor Drive, P.O. Box 0700, West Conshohocken, PA 19428; <http://www.astm.org>. You may inspect a copy at the Office of the Secretary, U.S. Consumer Product Safety

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Commission, Room 820, 4330 East West Highway, Bethesda, MD 20814, telephone 301-504-7923, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

(b) Instead of complying with section 8.3.1 of ASTM F2088 - 12a, comply with the following:

(1) 8.3.1 The warning statements shall address the following at a minimum:

(2) 8.3.1.1 Products having an adjustable seat recline with a maximum seat back angle greater than 50 degrees from horizontal measured in accordance with 7.13 shall address the following:

Keep swing seat fully reclined until child is at least 4 months old AND can hold up head without help. Young infants have limited head and neck control. If seat is too upright, infant's head can drop forward, compress the airway, and result in DEATH.

(3) 8.3.1.2 To prevent serious injury or death from infants falling or being strangled in straps:

(1) Always secure infant in the restraint system provided.

(2) Never leave infant unattended in swing.

(3) Discontinue use of swing when infant attempts to climb out.

(4) Travel swings (see 3.1.11) shall address the following:

Always place swing on floor. Never use on any elevated surface.

Dated: _____.

Todd A. Stevenson,
Secretary, Consumer Product Safety Commission