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

BALLOT VOTE SHEET

Date: AUG 14 2009

TO : The Commission
Todd Stevenson, Secretary

THROUGH: Maruta Budetti, Executive Director MZB

FROM : Cheryl Falvey, General Counsel CAF
Philip L. Chao, Assistant General Counsel, RAD
Patricia M. Pollitzer, Attorney PMP

SUBJECT : Notice of Proposed Rulemaking for Bath Seats under Section 104(b) of the Consumer Product Safety Improvement Act

Ballot Vote Due: AUG 20 2009

Section 104(b) of the Consumer Product Safety Improvement Act ("CPSIA") directs the Commission to issue safety standards for durable infant or toddler products. Attached is a staff briefing memorandum recommending that the Commission issue a notice of proposed rulemaking ("NPR") proposing a rule under section 104(b) of the CPSIA for infant bath seats that is substantially the same as the applicable voluntary standard, ASTM F 1967-08a, with certain modifications. The Office of the General Counsel is forwarding separately a draft NPR for your consideration.

The direction in section 104(b) of the CPSIA supersedes the Commission's previous rulemaking concerning bath seats under the Federal Hazardous Substances Act ("FHSA"). Therefore, a draft notice terminating the previous FHSA bath seat rulemaking is also attached.

Please indicate your vote on the following options.

A. Bath Seat Proposed Rule

I. Approve the draft NPR proposing a standard for bath seats as drafted.

_____ _____
Signature Date

Note: This document has not been reviewed or accepted by the Commission.
Initials RH Date 8/14/09

CPSA 6(b)(1) CLEARED for PUBLIC 8/14/09
CONSUMERS PRVTLBLRS OR PRODUCTS IDENTIFIED
ACCEPTED BY: PETITION RULEMAKING ADMIN. PRCDG
WITH PORTIONS REMOVED:

II. Approve the draft NPR proposing a standard for bath seats with changes (please specify changes):

_____

_____

_____

_____ _____

Signature Date

III. Do not approve the draft NPR proposing a standard for bath seats.

_____ _____

Signature Date

IV. Take other action (please specify):

_____

_____

_____

_____ _____

Signature Date

B. Termination of FHSA Rulemaking

I. Approve the draft notice terminating the FHSA rulemaking for bath seats as drafted.

_____ _____

Signature Date

II. Approve the draft notice terminating the FHSA rulemaking for bath seats with changes (please specify changes):

_____

_____

_____

_____ _____

Signature Date

III. Do not approve the draft notice terminating the FHSA rulemaking for bath seats.

_____ _____

Signature Date

IV. Take other action (please specify):

_____

_____

_____

_____ _____

Signature Date

NOTICE OF PROPOSED RULEMAKING FOR BABY BATH SEATS BRIEFING PACKAGE

August 2009

For Further Information, Contact:

Patricia L. Edwards
Directorate for Engineering Sciences
(301) 504-7577

Note: This document has not been reviewed or accepted by the Commission.
Initials RH Date 8/14/09

CPSA 6(b)(1) CLEARED for PUBLIC
NO MFRS PRVTLBLD OR PRODUCTS IDENTIFIED 8/14/09
ACCEPTED BY: PETITION RULEMAKING ADMIN. PRCDG
WITH PORTIONS REMOVED:

TABLE OF CONTENTS

ATTACHMENTS

UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

Memorandum

DATE:

TO: The Commission
Todd Stevenson, Secretary

THROUGH: Cheryl Falvey, General Counsel CAF
Maruta Budetti, Executive Director MB

FROM: Robert J. Howell, Assistant Executive Director RJH
Office of Hazard Identification and Reduction
Patricia Edwards, Project Manager PE
Directorate for Engineering Sciences

SUBJECT: Notice of Proposed Rulemaking (NPR) for Baby Bath Seats

I. INTRODUCTION

Section 104 of the Consumer Product Safety Improvement Act (CPSIA), *Standards and Consumer Registration of Durable Nursery Products*, requires the U.S. Consumer Product Safety Commission (CPSC, or Commission) to study and develop safety standards for certain infant and toddler products. The list of products in section 104 includes: full-size and non-full-size cribs; toddler beds; high chairs, booster chairs, and hook-on chairs; bath seats; gates and other enclosures for confining a child; play yards; stationary activity centers; infant carriers; strollers; walkers; swings; and bassinets and cradles. The Commission is charged with examining and assessing the effectiveness of any voluntary consumer product safety standards and for promulgating mandatory consumer product safety standards for these products.

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 voluntary standards. This consultation process commenced in October 2008 during the ASTM International (formally known as the American Society for Testing and Materials) subcommittee meeting regarding the ASTM bath seat voluntary standard, in which CPSC staff participated. Consultations with members of the ASTM subcommittee are ongoing.

This briefing package assesses the effectiveness of the baby bath seat voluntary standard and recommends that the Commission publish a notice of proposed rulemaking (NPR) to address potential hazards.

CPSA 6(b)(1) CLEARED for PUBLIC
NO MFRS/PRVTLBLRS OR PRODUCTS IDENTIFIED 8/14/09
EXCEPTED BY: PETITION
RULEMAKING ADMIN. PRCDG

[illegible] REMOVED: _____

II. BACKGROUND

A. The Product

A baby bath seat is a product intended to be placed into a bathtub, sink, or similar bathing enclosure to provide support to a seated infant while being bathed by an adult caregiver. The product is intended for use only with an infant who is capable of sitting upright unassisted and who cannot yet pull to a standing position.

B. Regulatory Activities

In 1994, the Commission voted against opening rulemaking for baby bath seats. Following that decision and because of continuing deaths associated with bath seats, the Commission was petitioned by nine consumer groups in 2000 to consider banning baby bath seats. The petition was granted and an advance notice of proposed rulemaking (ANPR) was published in the Federal Register (66 Fed. Reg. 39,692) on August 1, 2001, initiating rulemaking for bath seats under the Federal Hazardous Substance Act (FHSA).

On December 29, 2003, the Commission published a notice of proposed rulemaking (NPR) on baby bath seats in the Federal Register (68 Fed. Reg. 74,878). Rather than a ban, the NPR proposed requirements for leg openings to address submersion fatalities associated with occupants who slipped down into the seats and became entrapped, and stability requirements to address hazards associated with bath seats that tipped over and spilled the children into the water. The NPR also contained labeling requirements to address children climbing out of bath seats and drowning. That rulemaking currently remains open.

C. ASTM Voluntary Standard Overview

The voluntary standard that was developed to address the identified hazard patterns associated with the use of bath seats is ASTM F1967 *Standard Consumer Safety Specification for Infant Bath Seats*. The standard was first published in 1999. After the NPR was issued by the Commission, the ASTM standard was revised several times to include all three of the proposed requirements found in the 2003 NPR. The first revision was in 2003 to include the NPR leg openings requirement, followed by a revision in 2004 to include the NPR stability requirement, and again in 2007 when the NPR labeling requirement was included. Besides including the three NPR requirements, other changes were made to the ASTM standard in the same timeframe. Appendix A of this memo outlines all the requirements specified in the standard and when they were included.

As a result of the changes made to the standard in 2003 and 2004, two manufacturers made significant design changes to their products, in order to meet the new requirements. The new designs utilized an arm that clamped onto the side of the bath tub. In 2007, ASTM revised the stability requirements to make them stricter, to address incidents reported to CPSC staff involving these new designs. Only one manufacturer made modifications to their bath seat design to account for the revised requirements. Also in 2007, ASTM revised the standard to exclude bath tub products. This affected any products that were a combination bath seat and bath tub, removing them from the scope of the standard.

The current voluntary standard for bath seats, ASTM F1967-08a, was published in December 2008. The requirements for stability and leg openings and the warning label wording have not changed from the 2007 version to the current version of the standard.

The Juvenile Products Manufacturers Association (JPMA) has a certification program for a variety of juvenile products, including baby bath seats. To obtain JPMA certification, manufacturers submit their products to an independent test laboratory for conformance testing to the most current ASTM voluntary standard. Currently, there is only one bath seat on the market that is JPMA certified to ASTM F1967-08a.

III. DISCUSSION

A. Incident Data (Tab A)

From 1983 through 2008, CPSC staff has reports of 295 non-fatal bath seat incidents. A potential submersion[1] hazard was identified in 151 of these non-fatal incidents, of which 116 were actual submersion incidents. The remaining 144 reports were non-submersion hazards such as lacerations, limb entrapments, etc. There have been 171[2] reported fatalities involving bath seats for this same timeframe. All of these fatalities were submersions. None of the identifiable products involved in the fatal bath seat incidents was certified to meet ASTM F1967-08a or its predecessor, ASTM F1967-07. Two of the non-fatal incidents involved products certified to ASTM F1967-07; neither incident involved a submersion hazard, and neither was life threatening.

Of the 171 fatal incidents, 20 involved products that were identified as being certified to the 2004 version of the ASTM standard. Two of the 20 were due to the arm of the bath seat disengaging from the bath tub; and 17 were due to other causes, such as: the child was slumped over the side of the bath seat (4 incidents), the child was found out of the bath seat in the water (7 incidents), mis-use of the product, such as consumers not attaching the clamp to the tub side (4 incidents), and overflowing bathtubs (2 incidents). In one incident, the cause was unknown.

Fifty-one of the non-fatal incidents involved bath seats certified to the 2004 version of the ASTM voluntary standard. Fifteen of these non-fatal incidents involved a bath seat that was the subject of a safety alert issued in 2005 due to component failures occurring when the bath seat was installed on non-traditional tubs, such as Jacuzzi style bath tubs. Of the remaining 36 incidents, five were considered submersion hazards and thus could have resulted in a fatality had a caregiver not been present. These five included three bath seat arm disengagements, one entrapment where the child's torso slipped completely into one leg opening, and one incident in which a child was found out of the bath seat and in the water. In addition, there was another

[1] Submersion is defined as the act of placing or the condition of being under the surface of a liquid. For this reason and since a considerable number of children are injured or do not die immediately, the term "submersion" better defines the hazard and will be used instead of the term "drowning."

[2] Fatality reporting is not considered complete for 2006, 2007 and 2008.

recent torso entrapment incident reported to CPSC staff in 2009 that was not included in the incident count found in Tab A. There were also an additional four non-fatal incidents reported that were associated with a combination bath seat and bath tub product that was certified to the 2004 standard.

B. Testing of Current Product (Tab B)

A search of local retail stores was recently conducted, and three products meeting the definition of a bath seat (as defined by the ASTM standard) were found. Two of the bath seats (not JPMA certified) used suction cups on the bottom of the seat to provide stability. The third seat primarily used a clamping mechanism located on an arm that secured to the side of the bath tub. This bath seat is currently listed as being certified by JPMA.

All three products were tested to the current version of the bath seat standard, ASTM F1967-08a. Initial testing results indicated that all three products failed the stability test requirements. The two non-certified seats that used only suction cups for stability could not affix themselves to the non-skid test surface and, therefore, failed.

During testing of the JPMA certified bath seat, the clamping mechanism lifted up from the top surface of the side of the tub. The product was still clamped on to the tub side, but the bath seat tilted (leaned rearward) from the installed and presumed "manufacturer's intended use position." A strict interpretation of the pass-fail criteria suggests that this bath seat, as tested by CPSC staff, also does not meet the standard. However, the clamp, while askew from the initial position, still remained clamped to the side of the bath tub, which could be interpreted as meaning that the product did not tip over and did not disengage from the platform. For this reason, staff considers the pass/fail criteria to be ambiguous and recommends that it be changed. CPSC staff recommends incorporating a test procedure to measure any tilt that occurs to the bath seat during the test to determine whether it moves from the intended use position.

The current ASTM standard requires that a soapy test solution "thoroughly saturate the coverage area" which is defined in the standard as any internal surface of the tub well or tub bottom that makes contact with the product. Staff found that during the testing, spraying the soap solution on the top and outer surface contact points of the bath tub as well as the interior surfaces affected the final position of the bath seat and thus could affect the results of the test. Thus, to account for the worst case possibility of soapy water being splashed on the outer surfaces of the tub, staff recommends that the test solution also be applied to those areas.

C. Assessment of the Current Voluntary Standard, ASTM F1967-08a

Based on the testing and a review of the incidents involving certified bath seats, CPSC staff believes that the requirements in the current voluntary standard are not adequate to address some of the known hazards. Therefore, staff is recommending the following changes to ASTM F1967-08a for a new proposed mandatory rule.

1) ***Staff Recommendations for Definition of a Bath Seat***

In 2003, CPSC staff defined a baby bath seat as an article that is used in a bath tub, sink, or similar bathing enclosure that provides support, at a minimum, to the front and back of a seated infant during bathing by a caregiver. CPSC staff prefers this definition over that used in the ASTM standard, which does not define the type of support.

2) ***Staff Recommendations for Leg Opening Requirements***

As discussed in Tab A, there have been two recent incidents where children have fit both legs and their hips through a single leg hole of a bath seat that complies with the current ASTM standard. CPSC staff recommends that the shape of the leg opening probe (to be referred as the "torso probe" for the remainder of this memo) specified in the ASTM standard be changed to create one that is more analogous to the human infant in a bathing environment (See Tab C). Modeling the pliable features of a child's torso is not practical, but CPSC staff believes that the same effect can be achieved by decreasing the size of the current rigid wood torso probe and using a larger radius on the corners. Therefore, staff recommends changing the torso probe's dimensions as shown in Tab C. CPSC staff does not recommend any changes to the shoulder probe currently used in ASTM F1967-08a.

Additional recommended changes involve the current procedure in the ASTM standard to insert the torso probe "...in the most adverse orientation into each opening." This language is open to interpretation and may not always be intuitive as to what may be "the most adverse orientation." Therefore, CPSC staff recommends the wording be changed to say that the torso probe needs to be inserted "in all orientations to determine if any position can create a slip through and/or entrapment hazard."

3) ***Staff Recommendations for Stability Requirements***

CPSC staff recommends four changes to the current ASTM stability requirements. Two are changes to the test procedures to help perform the stability test, one is a clarification to remove any misinterpretation of the pass/fail criteria, and the last is a change to one of the preparatory steps that would make the requirement stricter. These changes are discussed below.

Test Procedure Changes

To address testing of products that can "float" in the water when not occupied, staff suggests the following wording be added when flooding the test platform to the designated depth: "For the purpose of measuring the water level, the product's seating surface can be temporarily weighed down to prevent the seat from floating."

The ASTM standard currently lists the test procedure steps for the stability performance requirement in the wrong order. CPSC staff recommends the procedure be revised with the steps in the correct order in which they should be performed. This will help clarify that the product should be installed after the flooding of the test platform.

Clarification of the Pass/Fail Criteria

The standard includes the following statement: "In addition, if any attachment point disengages from (is no longer in contact with) the test platform and then fails to return to its manufacturer's intended use position after being tested in accordance with 7.4, it fails the requirement."

As described above, during the staff's conformance testing, the clamping mechanism lifted from the tub side and the product continued to tilt backwards as force was applied, but the bath seat did not tip over. To prevent possible misinterpretation of the pass/fail criteria, CPSC staff recommends an additional requirement to address units that may tilt but neither tip over nor return to the "intended use position" after the force has been applied. The new requirement would add the following: "If anytime during the application of force the bath seat is no longer in the initial 'intended use position' and is tilted at an angle of 12-degrees or more from its initial starting position, it shall be considered a failure." In addition, staff recommends that a requirement be added to measure the tilt angle of the bath seat, including procedures for making such measurements.

Revision of Preparatory Step

In 2007, the stability requirements in the ASTM standard were strengthened to address incidents that occurred when certified bath seats that were clamped onto the side of a tub slipped off. The standard was modified to require the application of a soap solution to any internal surface of the bath tub platform or the tub bottom where the product makes contact. This requirement did not address situations where the outside of the tub may be wet. Therefore, CPSC staff recommends strengthening the stability requirements so that the soap solution is applied to all test platform surfaces above the water line where the product makes contact or could possibly make contact.

D. Potential Small Business Impact

Based on Small Business Administration definitions, there are two small businesses that are likely to be affected by the proposed standard, a small domestic manufacturer and a small domestic importer described in the Directorate for Economic Analysis memo (See Tab D). Neither complies with the current voluntary standard for baby bath seats. Based on available information, modifying existing bath seats to achieve compliance with the proposed standard would result in one-time product development costs and possible increased costs of production that could amount to approximately $5 to $10 per bath seat. A price increase associated with these modifications will likely reduce the quantity of bath seats demanded and hence unit sales. In addition, there will be incremental costs associated with the staff's recommended changes to the voluntary standard. These costs are unknown put are probably small.

Alternatively, it is possible that manufacturers may not be able to (or may choose not to) produce a commercially viable bath seat that meets the proposed standard. For the small domestic manufacturer, the economic impact of discontinuing baby bath seat production is unlikely to be substantial, because bath seats represent only a small proportion of the products it produces. For

the small importer, the effect of the regulation would be felt indirectly, requiring a shift in suppliers rather than the design and production of a different product. The impact on the small domestic importer is also expected to be small. It would most likely respond by discontinuing the import of its non-complying bath seat, either replacing it with a complying product or another juvenile product.

Even if the cost of developing a compliant product proves to be a barrier for individual small firms, the loss of bath seats as a product category is expected to be minor and would likely be mitigated by increased sales of competing products, such as multi-stage baby bath tubs, or entirely different juvenile products.

IV. STAFF RECOMMENDATIONS

CPSC staff recommends that the Commission proceed with the rulemaking process for baby bath seats by publishing an NPR as drafted by the Office of General Counsel and submitted separately from this briefing package. CPSC staff also recommends an effective date of six months after publication of the final rule.

The requirements outlined in the draft NPR are substantially the same as those in ASTM F1967-08a, *Standard Consumer Safety Specification for Infant Bath Seats,* with several modifications including:

- Changing the definition of a bath seat to match what was presented in the 2003 bath seat NPR.
- Changing "the most adverse position" as found in the leg opening requirement to read "in all orientations" to eliminate possible ambiguity.
- Changing the dimensions of the torso probe used in the leg opening requirement to match Figure 2 in Tab C. This change results in a more stringent leg opening requirement to address torso entrapment incidents recently reported to CPSC staff.
- Changing the stability requirements to address products that neither tip over nor return to a manufacturer's recommended use position. This change would clarify the pass/fail criteria by failing any product that has shifted 12 degrees or more as a result of the test.
- Changing the procedure in the stability requirements for measuring the water level to account for bath seats that tend to float when unoccupied.
- Changing the preparation of the test platform for the stability requirements to be more stringent. This change will address incidents where water may be present on the outside of the tub.
- Clarifying the order of the steps involved in preparing the test platform.

UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

Memorandum

Date: July 31, 2009

TO : Patricia Edwards, Project Manager
Division of Mechanical Engineering

THROUGH: Russell Roegner, Ph. D.
Associate Executive Director
Directorate for Epidemiology

Kathleen Stralka
Director
Division of Hazard Analysis

FROM : Kevin Gipson
Mathematical Statistician
Division of Hazard Analysis

SUBJECT : Hazard Analysis Memorandum for Bath Seat NPR Briefing Package

This memorandum records the number of fatal and non-fatal incidents[1] (1983 – 2008[2]) related to bath seats and bath rings reported to CPSC staff as of February 2009. A characterization of the reported hazards related to bath seats or bath rings since the publication of major revisions, in 2004 and 2007, to the voluntary standard for bathseats-ASTM F 1967, *Standard Consumer Safety Specification for Infant Bathseats*-is also presented. Finally, the number of bath seat- and bath ring-related submersion fatalities reported to CPSC staff from 2004 – 2008 is presented along with the frequency of reported submersion fatalities for other infant bathing products. Appendix A describes the methodology for the data extraction and Appendix B gives classification definitions for submersion and the various infant bathing products developed by the staff data review team.

It is important to note that prior to 1999, the Ninth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-9) was used to categorize the cause of death. In 1999, the Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10) was implemented. This revision incorporated major changes to the Ecodes used to classify submersion fatalities that allowed much more reliable identification of the fatal

[1] Not all of these incidents are addressable by an action the CPSC could take; however, it was not the purpose of this memorandum to evaluate the addressability of the incidents, but rather to update fatalities and non-fatal incidents reported to CPSC staff.
[2] Italics indicate years for which reporting is ongoing (*2006*, *2007* and *2008*).

submersion location. For this reason, fatality data for the periods prior to, and from 1999 onwards, are not directly comparable.

In summary, for the years 1983 – 2008, bath seats or bath rings were associated with:

- 171 reported fatalities, all of which were submersions; and
- 295 non-fatal incidents of which approximately 40% were actual submersion incidents.

With respect to the 2004[3] revision of the ASTM F 1967 standard, for the years 2004 – 2008 there were:

- 44 reported fatalities and 67 non-fatal incidents associated with bath seats or bath rings. Of these 111 incidents, bath seats met the stability requirement of the 2004 standard for 71 incidents (20 fatalities and 51 non-fatality incidents);
- 20 incidents (2 fatalities and 18 non-fatal incidents) for which the bath seat arm disengaged from the tub side or broke; and
- 19 non-fatal entrapment incidents; 1 that presented a potential submersion hazard, 12 that did not present an apparent submersion hazard, and 6 where the reports had insufficient detail to allow staff to assess whether a potential submersion hazard was involved.

With respect to the 2007 revision of the ASTM F 1967 standard, for the years 2007 – 2008 there were:

- no reported fatalities and 2 non-fatal incidents associated with bath seats certified to the 2007 standard.

For the years 2004 – 2008, reported submersion fatalities of children 12 months of age and younger were associated with:

- a full-sized bathtub and no mention of an infant bathing product in 73% of the incidents;
- a bath seat or bath ring in 20% of the incidents; and
- infant bathtubs/infant bathing aides/other products in 7% of the incidents.

Analysis of bath seat incidents is complicated because numerous incidents involve older products (pre-2004 standard), major redesigns of the product certified to the 2004 standard, and more subtle changes to the voluntary standard and product in 2007 and 2008.

[3] Incidents that met the stability requirements of this 2004 standard but may not have met the labeling requirements are counted as meeting the 2004 standard for the purposes of the memorandum.

In addition to bath seats and bath rings, there is also a class of products that is multi-functional and could be used as either a bath seat or bath tub depending on the configuration. For these combination bath tub/bath seat products there were:

- 49 incidents (20 for the product in the bath seat configuration) during the 1983 – 2008 time period, but the first incident reported to CPSC staff did not occur until 1997. Of the 20 incidents (2 fatalities and 18 non-fatal incidents), there were 5 submersions and 1 incident with submersion potential;
- 11 incidents (6 for the product in the bath seat configuration) occurred during the 2004 – 2008 timeframe. Of the 6 bath seat configuration incidents (2 fatalities and 4 non-fatal incidents), 3 were submersions;
- 2 combination products were certified to the 2004 standard. There were no combination products certified to the 2007 standard;
- 5 incidents (1 fatality and 4 non-fatal incidents) were reported involving combination products certified to the 2004 standard during the 2004 – 2008 time period. The 1 fatality had the combination product in the bath seat configuration and 3 of the 4 non-fatal incidents were also in the bath seat configuration.

Incidents associated with combination products are not included in tabulated frequencies but are discussed in the text or a footnote, as appropriate.

Reports of Incidents to CPSC Staff Related to Bath Seats and Bath Rings

Reported Fatalities

For 1983 – 2008, the CPSC staff has reports of 171 fatal incidents related to bath seats or bath rings. All of these fatalities were the result of submersion. Table 1 provides a chronology of these fatalities showing the total number of reports received by CPSC staff by year. When comparing the percentage of reports for the 171 fatalities, the majority of incidents (97%) occurred since 1990, 55% occurred since 2000, and 26% occurred since 2004.

Table 1
Fatalities Reported to CPSC Staff
Involving Bath Seats or Bath Rings by Year
1983 – 2008

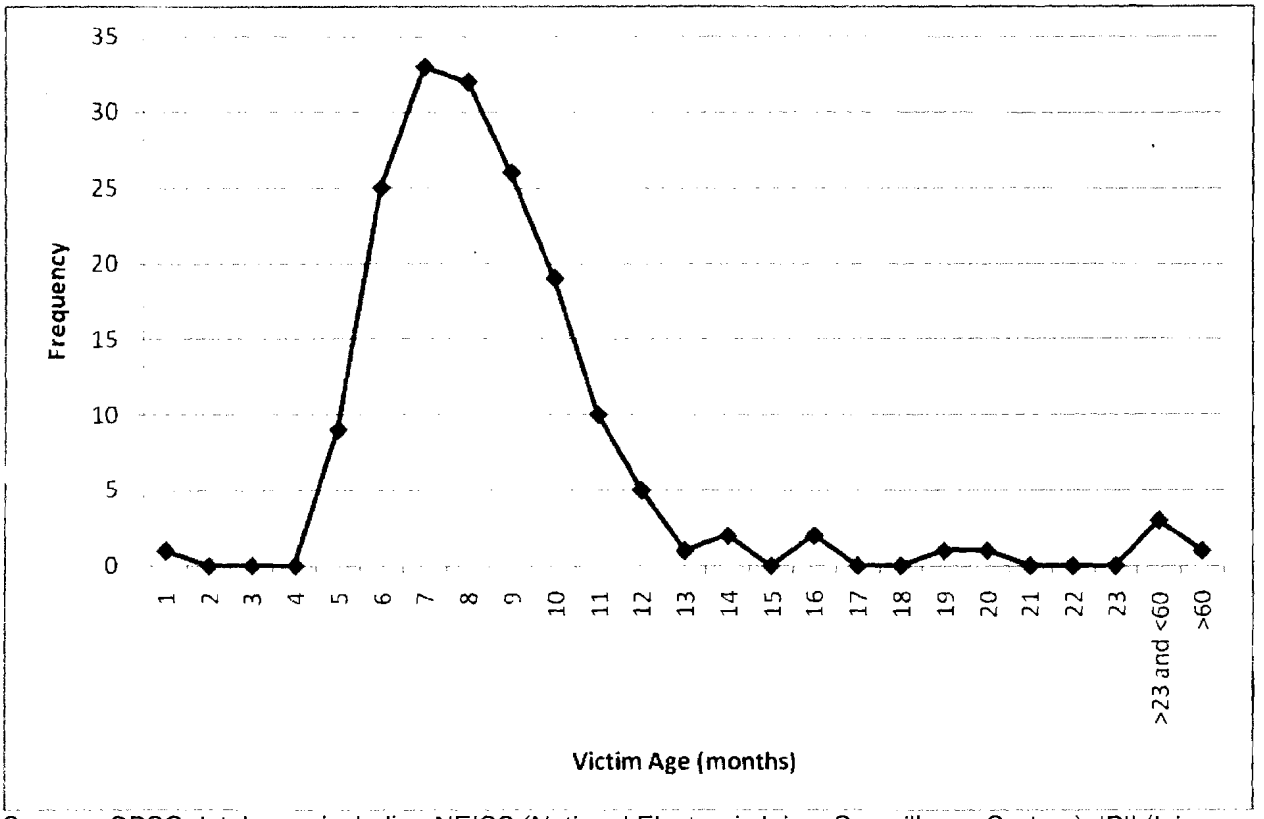
Year	Bath Seats or Bath Rings
2008	*3*
2007	*9*
2006	*11*
2005	11
2004	10
2003	16
2002	5
2001	15
2000	14
1999[4]	7
1998	8
1997	10
1996	10
1995	13
1994	9
1993	3
1992	5
1991	6
1990	1
1989	1
1988	0
1987	0
1986	1
1985	2
1984	0
1983	1
Total	**171**

Source: CPSC databases including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths) and INDP (In Depth Investigations). Italics indicate years for which fatality reporting is ongoing (*2006*, *2007* and *2008*). Appendix A details the methodology for data extraction.

Figure 1 shows a frequency distribution of fatalities by victim age for reported fatalities associated with bath seats and bath rings for 1983 – 2008. The majority of the fatalities (93%) involve children between the ages of 5 and 12 months with 68% involving children aged 6 to 9 months. The frequency peaks at a victim age of 7 months.

[4] Beginning in 1999, death certificates were coded under the Tenth Revision of the International Classification of Diseases (ICD –10). Fatality data for years prior to 1999 are not directly comparable.

Figure 1
Fatalities Reported to CPSC Staff
Involving Bath Seats or Bath Rings by Victim Age
1983 – 2008



Source: CPSC databases including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths) and INDP (In Depth Investigations). Fatality reporting is ongoing for *2006*, *2007* and *2008*. Appendix A details the methodology for data extraction.

Reported Non-Fatal Incidents

For 1983 – 2008, the CPSC staff has reports of 295 non-fatal incidents related to bath seats or bath rings. A submersion hazard was identified in 151 of these non-fatal incidents, of which 116 involved the actual submersion of victims. The remaining 144 reports were non-submersion hazards such as entrapments, pinches, cuts and scratches. Table 2 shows the total number of reports received by CPSC staff by year and provides a breakdown of the reported incidents by "injury", "no injury", and "unknown". The majority of the 295 non-fatal incidents (89%) occurred since 1990, 50% occurred since 2000, and 23% occurred since 2004.

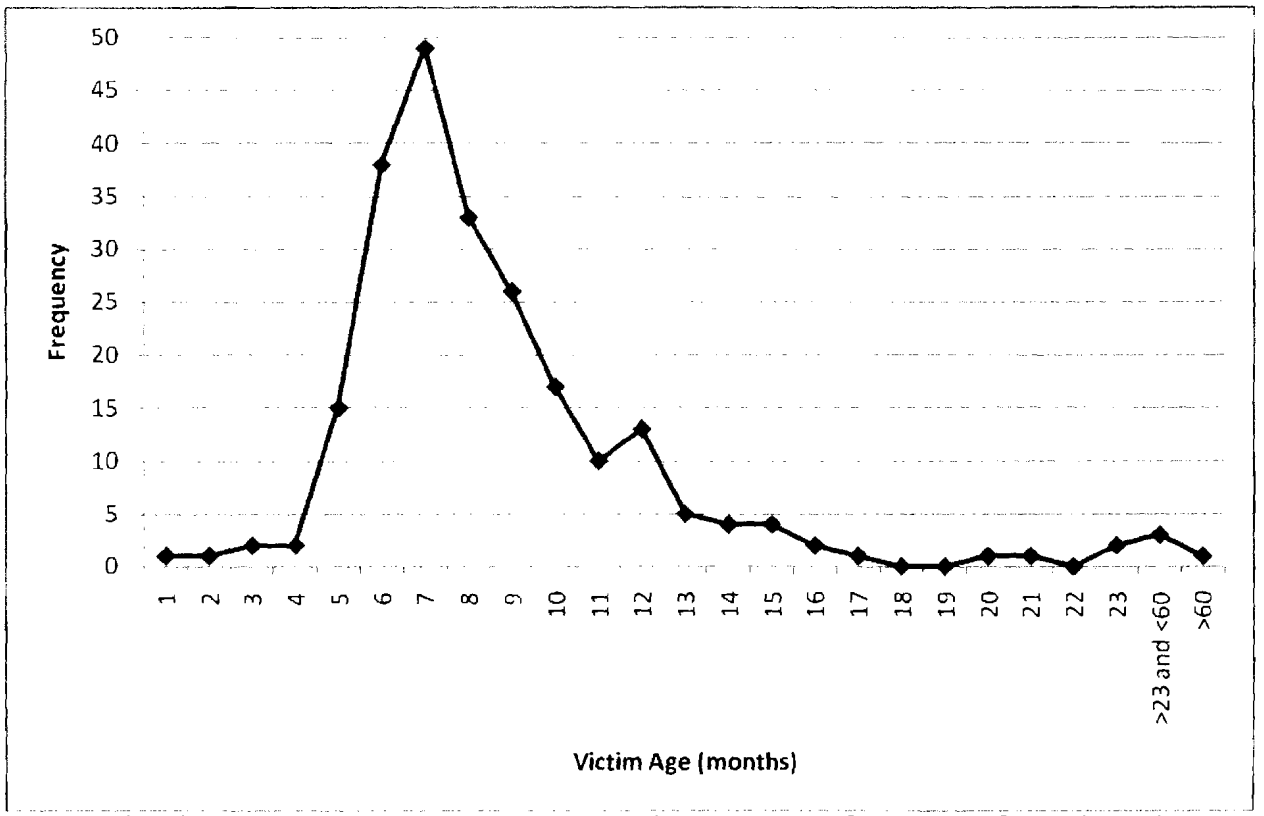
Table 2
Non-Fatal Incidents Reported to CPSC Staff
Involving Bath Seats or Bath Rings by Year
1983 – 2008

Year	Injury	No Injury	Unknown	Year Total
2008	*5*	*0*	*0*	***5***
2007	*11*	*2*	*0*	***13***
2006	*8*	*4*	*0*	***12***
2005	12	2	2	**16**
2004	3	17	1	**21**
2003	4	8	0	**12**
2002	10	9	0	**19**
2001	8	15	0	**23**
2000	10	15	2	**27**
1999	16	9	1	**26**
1998	6	3	1	**10**
1997	3	4	1	**8**
1996	3	1	0	**4**
1995	6	3	1	**10**
1994	4	1	2	**7**
1993	3	1	3	**7**
1992	3	1	6	**10**
1991	6	2	16	**24**
1990	3	1	6	**10**
1989	1	1	5	**7**
1988	1	1	3	**5**
1987	2	2	1	**5**
1986	0	0	5	**5**
1985	1	0	3	**4**
1984	1	2	0	**3**
1983	1	0	1	**2**
Total	**131**	**104**	**60**	**295**

Source: CPSC databases including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), and INDP (In Depth Investigations). Italics indicate years for which reporting is ongoing (*2006*, *2007* and *2008*). Appendix A details the methodology for data extraction.

Figure 2 presents a frequency distribution by victim age for non-fatal bath seat and bath ring incidents reported to the CPSC. For the 26 year time period, the majority (68%) of the reported non-fatal bath seat and bath ring incidents involved victims aged from 5 months to 12 months with 49% involving children 6 to 9 months of age. The frequency peaks at a victim age of 7 months. The age distribution for non-fatal incidents is similar to that observed for reported fatalities.

Figure 2
Non-Fatal Incidents Reported to CPSC Staff
Involving Bath Seats or Bath Rings by Victim Age
1983 – 2008



Source: CPSC databases including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), and INDP (In Depth Investigations). Reporting is ongoing for *2006, 2007* and *2008.* Appendix A details the methodology for data extraction.

Hazard Patterns Reported Since 2004/2007 ASTM Voluntary Standard

In 1999, in response to the growing numbers of fatalities and non-fatal incidents associated with bath seats or bath rings, ASTM developed the voluntary standard ASTM F 1967, *Standard Consumer Safety Specification for Infant Bathseats.* Relatively minor revisions to the standard were published in 2001 and 2003 (ASTM F 1967-01 and ASTM F1967-03, respectively). ASTM continued work to develop a more stringent bath seat standard. In anticipation of substantial changes to the standard, some manufacturers totally redesigned the bath seat's stability features and sold these products in late 2003 and early 2004 before the July 2004 revision of ASTM 1967 was published. From investigations, it appears that some products manufactured before July 2004 (ASTM F 1967-04[5]) and up to February 2005, possibly later, were certified to the 2003 standard based on use of the 2003 wording for the warning label. Warning

[5] Section 8.5 of this standard gives the developmental milestones of a child able to sit up unassisted (approximately 5 months) to a child able to pull up to a standing position (approximately 10 months) as a guideline for the approximate recommended age range for bath seats.

labels on products certified to the 2004 standard reflect further required changes to the warning label. The Juvenile Product Manufacturers Association (JPMA) added bath seats to their certification program in 2005, using the 2004 version of ASTM F 1967 as the certification standard. Three products commercially available were certified to the 2004 standard, 2 of which were combination bath tub/bath seat products. A further revision to ASTM 1967 was made in 2007, and the latest revision of the standard was published in 2008 (ASTM F 1967-08). Currently, there is only 1 certified product commercially available. The manufacturer of the certified seat changed their design to meet the updated 2007 standard. Production of the new certified product started around October 2007 and marketing began around December 2007.

Table 3 shows bath seat or bath ring incidents reported to CPSC staff for the 2004 – 2008 time period by certification status. Forty-five percent of the fatalities and 76 percent of the non-fatal incidents were certified to or met the stability requirements of the 2004 standard.

Table 3
Reported Fatalities and Non-Fatal Incidents
Involving Infant Bath Seats or Bath Rings by 2004 Certification
2004 – 2008

	Fatalities	Non-Fatal Incidents
Pre-2004 Standard	**19**	**11**
Certified to 2004 Standard or Met 2004 Stability Requirements	**20**[6]	**51**[7]
Unknown	**5**	**5**
Total	**44**	**67**

Source: CPSC databases including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths) and INDP (In Depth Investigations). Reporting is ongoing for *2006, 2007* and *2008*. Appendix A details the methodology for data extraction.

Table 4 presents the frequency of bath seat incidents reported to CPSC staff by hazard scenario for those incidents that involved products certified to the 2004 edition of ASTM F 1967.

[6] There was 1 additional fatal incident in a combination bath tub/bath seat product certified to the 2004 standard which is not included in this count. Combination products are no longer manufactured.
[7] There were 4 additional non-fatal incidents in combination bath tub/bath seat products certified to the 2004 standard which are not included in this count. Combination products are no longer manufactured.

Table 4
Hazard Scenarios for Reported Fatalities and Non-Fatal Incidents
Involving Infant Bath Seat Products[8] Which are Confirmed as Meeting the
Stability Requirements of ASTM F 1967-04 (2004 Standard)
2004 – 2008

Hazard Scenario	Fatalities[9]	Non-Fatal Incidents and Complaints	Total Number of Incidents
Product Loss of Integrity, Breakage	**0**	**17**	**17**
Plastic Arm Breakage	0	15	**15**
Other Plastic Part Breakage	0	2	**2**
Functional Failure, No Breakage	**2**	**3**	**5**
Arm Disengaged from Tub Side	2	3[10]	**5**
Potential Product Design Issues	**0**	**30**	**30**
Entrapment/Potential Submersion (body)	0	1[11]	**1**
Entrapment/No Potential Submersion (limb)	0	12	**12**
Entrapment/Unknown Potential Submersion	0	6	**6**
Pinching	0	4	**4**
Scratch or Cut	0	6[10]	**6**
Other[12]	0	1	**1**
No Obvious Failure or Design Issue	**17**	**1**	**18**
Overflow	2	0	**2**
Not Used According to Directions[13]	4	0	**4**
Victim Found in Water	7	1	**8**
Victim Slumped Over in Water, Partially Out of Seat	4	0	**4**
Unknown	**1**	**0**	**1**
Total Incidents	**20**	**51**	**71**

Source: CPSC databases including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths) and INDP (In Depth Investigations). Reporting is ongoing for *2006, 2007* and *2008.* Appendix A details the methodology for data extraction.

[8] There were no bath ring products certified to the 2004 standard.
[9] Appendix C gives more details about the 20 fatalities.
[10] There was 1 additional non-fatal incident in a combination bath tub/bath seat product certified to the 2004 standard which is not included in this hazard scenario category count.
[11] In addition to this 1 incident, a virtually identical incident was reported to CPSC staff in 2009.
[12] There was also 1 fatality and 2 non-fatal incidents in a combination bath tub/bath seat product certified to the 2004 standard which is not included in this hazard scenario other category count.
[13] These incidents involve cases where the bath seat was not attached properly (clamp not employed) or the product had been modified, for example, by removing the arm or even deliberately cutting it off.

Table 4 shows that there were several issues related to the arm attachments during 2004 – 2008. In the product loss of integrity hazard category, there were 15 non-fatal incidents reported that involved the product's arm breaking. These breakage incidents related to the product's arm led to a safety alert[14] and redesign of the arm. The functional failure hazard category had 2 reported fatalities and 3 non-fatal complaints related to the arm disengaging from the side of the tub. The arm disengaging from the tub side hazard resulted in a 2007 change to the voluntary standard[15].

Hazards related to potential product design issues were attributed to 30 non-fatal incidents. Nineteen of the 30 incidents resulted in entrapments while 11 incidents presented pinching, scratching or cutting, or other hazards.

The 19 reported incidents involving potential product design hazards that resulted in entrapments were classified into 1 of 3 categories: potential submersion where the child's body (torso) was entrapped; no potential submersion where a limb(s) was entrapped and unknown submersion potential.

The 1 entrapment hazard that is of greatest concern is body entrapment that presents a submersion hazard. For this hazard, CPSC staff is aware of 1 incident in the 2004 – 2008 timeframe (plus a second similar incident in 2009). In this incident, during bathing with a caregiver present, both of the child's legs entered a single leg hole, and near simultaneously, the child rotated onto his/her stomach as the body slipped through the leg hole to become entrapped at waist level.

Several entrapment incidents (12 entrapment/no potential submersion) clearly did not present a potential high severity injury scenario related to submersion. One case involved an arm entrapment; in 10 cases, the infants clearly had both or 1 leg inserted into the smaller rear holes rather than the leg holes; and 1 case appeared to involve a child who had outgrown the seat and the parent had difficulty removing her from the bath seat.

There were also several entrapment incidents (6 entrapment/unknown potential submersion) where details were not clear about the submersion potential. Four of these reports indicate the child had become stuck in the seat but contain insufficient detail to allow staff to determine how the child was positioned when entrapped, i.e., whether the child's legs were in separate leg holes, separate rear holes, 1 leg and 1 rear hole (none of which present an obvious submersion hazard) or both in a single hole (where the possibility of submersion cannot be ruled out). Details of 2 other entrapment incidents are not clear and inclusion of report descriptors "resulted in being stuck face down" and "pinned in up to her waist" do not allow staff to rule out the possibility that these entrapments may have presented a submersion hazard.

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[14] Release #05-219, July 6, 2005, U.S. Consumer Product Safety Commission.
[15] The new requirement was added to ASTM F 1967 - 07a to address the detachment from the bathtub.

It is noteworthy that in 9 of these 19 entrapment incidents, parents called emergency responders (firefighters and paramedics) to free their child. In 11 incidents, either the parents or emergency responders cut or broke the product in order to free the child.

There were 17 fatalities and 1 non-fatal incident in the no obvious failure or design issue hazard category. In these cases, there was either evidence to suggest that the product was not used according to instructions or there was no clear evidence to relate the incident to the product. For the 4 fatalities that indicated the product was not used according to directions, caregivers did not properly attach the arm or deliberately disconnected the arm from the bath seat.

For *2007 – 2008,* there were 12 fatalities and 18 non-fatal incidents involving bath seats or bath rings reported to CPSC staff. For the fatalities, 6 incidents involved products that met the 2004 standard only. Products associated with 3 fatalities did not meet either the 2004 or 2007 standard, and for the remaining 3 is it unclear if the products met the 2004 standard. For non-fatal incidents during this time period, the bath seats were certified to both the 2004 and 2007 standards in 2 incidents, certified to the 2004 standard only in 14 incidents, and not certified to either the 2004 or 2007 standard in 2 incidents. The 2 non-fatal incidents where the product was certified to the 2004 and 2007 standards had scratch or cut as their hazard scenario.

Reported Submersion Fatalities for Bath Seats/Rings and Other Bathing Products

As noted in the introduction, and detailed earlier, the year 2004 represents an important transition date for bath seat data because it is the year that ASTM F1967-04 was published which incorporated more stringent stability requirements resulting in radical changes to the design of certified bath seat products available at retail. The submersion hazard is the primary hazard of concern with any infant bathing product. This section compares submersion fatalities for bath seats or bath rings to other infant bathing products for the 2004 – 2008 time period.

There were 219 submersion fatalities in children 12 months of age and younger reported to CPSC staff for 2004 – 2008 that were related to selected infant bathing products (bath seats/rings, combo bath tub/seat, infant bathtubs, infant bath aids, full-sized bathtubs). The majority (160 or 73%) of these fatalities occurred in full-sized bathtubs with no apparent involvement of an infant bathing product noted in incident documentation available to staff. This is followed by the bath seat or ring category (20%) and the remaining fatalities (7%) were among the remaining product categories. Table 5 below shows annual counts for reported fatalities across these infant bathing products.

Table 5
Reported Fatal Submersions Involving Selected Infant Bathing Products
for Children 12 Months of Age and Younger by Year
2004 – 2008

Year	Bath Seats or Rings	Combination (Tubs/Seats)	Infant Bathtubs	Infant Bath Aids[16]	Bathtubs (full-sized)[17]
2008	*3*	*1*	*0*	*0*	*26*
2007	*9*	*0*	*3*	*2*	*28*
2006	*10*[18]	*0*	*2*	*0*	*33*
2005	11	1	2	0	36
2004	10	1	3	1	37
Total	**43**	**3**	**10**	**3**	**160**

Source: CPSC databases including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths) and INDP (In Depth Investigations). Italics indicate years for which fatality reporting is ongoing (*2006, 2007* and *2008).* Appendix A details the methodology for data extraction.

Table 6 records the frequency of reported submersion fatalities by victim age for reports received by CPSC staff from 2004 – 2008. A distribution of victim age is provided for each of 5 bathing product categories. The majority (89%) of the reported full-sized bathtub related fatalities occurred when the child was between 7 and 12 months of age. Of the 43 submersion fatalities involving a bath seat or bath ring, all but 1 of the victims were between the ages of 5 to 12 months, and 33 were between 6 and 9 months old. The victims were 4, 7, and 9 months of age for the 3 incidents associated with combination bath tub/seat products. For the 10 submersion fatalities involving infant bathtubs, the victims ranged from 4 to 11 months of age. The victims' ages in incidents related to infant bathing aids were 2, 3 and 7 months of age.

[16] Based on the information provided in the source document, staff categorized the product as a bathing aid.
[17] Fatalities that occurred in full-sized bathtubs with few details about the incident could have potentially involved an infant bathing product as well.
[18] There was 1 additional fatality during this time period in a bath seat involving a 2 year old with a developmental disability.

Table 6
Reported Fatal Submersions Involving Selected Infant Bathing Products
for Children 12 Months of Age and Younger by Victim Age[19]
2004 – 2008

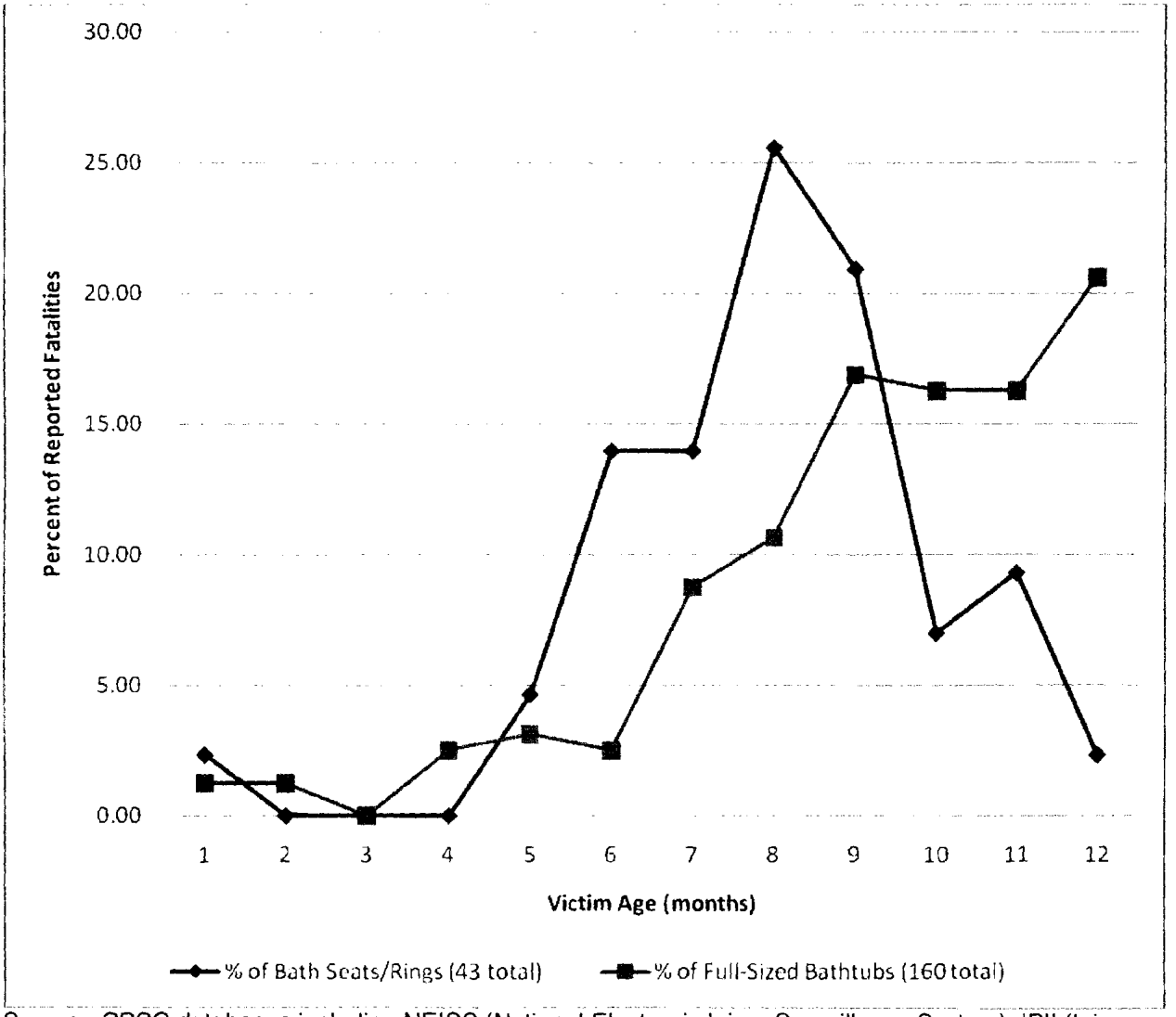
Victim Age (months)	Bath Seats or Rings	Combination (Tubs/Seats)	Infant Bathtubs	Infant Bath Aids[20]	Bathtubs (full-sized)[21]
1	1	0	0	0	2
2	0	0	0	1	2
3	0	0	0	1	0
4	0	1	2	0	4
5	2	0	3	0	5
6	6	0	0	0	4
7	6	1	1	1	14
8	11	0	2	0	17
9	9	1	1	0	27
10	3	0	0	0	26
11	4	0	1	0	26
12	1	0	0	0	33
Total	**43**	**3**	**10**	**3**	**160**

Source: CPSC databases including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths) and INDP (In Depth Investigations). Reporting is ongoing for *2006, 2007* and *2008*. Appendix A details the methodology for data extraction.

Figure 3 illustrates the percentage of fatalities by victim age for bath seats/rings and for full-sized bathtubs. The mean and median age for reported bath seat victims is 8 months old, whereas the mean and median victim ages for full-sized bathtubs are 9.3 and 10 months, respectively. It is important to note that in this time period approximately half the fatalities (19) were associated with bath seats or bath rings not meeting the stability requirements of the 2004 standard. Two of the 3 combination bath tub/seat incidents also involved product that was not certified to the 2004 standard. For the 20 fatalities associated with bath seats that were certified to the 2004 standard, 2 could be categorized as a functional failure due to arm disengagement from the tub side. There was also a new standard in 2007 and redesign of the product which make it difficult to determine any further conclusions.

[19] There were no submersion fatalities reported for victims aged 13 months to 23 months for this time period except for full-sized bathtubs (74).
[20] Based on the information provided in the source document, staff categorized the product as a bathing aid.
[21] Fatalities that occurred in full-sized bathtubs with few details about the incident could have potentially involved an infant bathing product as well.

Figure 3
Percent of Reported Fatal Submersions for Bath Seats or Rings and Bathtubs (full-sized) for Children 12 Months of Age and Younger by Victim Age
2004 – 2008



Source: CPSC databases including NEISS (National Electronic Injury Surveillance System), IPII (Injury and Potential Injury Incidents), DTHS (Deaths) and INDP (In Depth Investigations). Reporting is ongoing for *2006, 2007* and *2008*. Appendix A details the methodology for data extraction.

Appendix A: Methodology for extracting data

CPSC has 4 epidemiological databases: National Electronic Injury Surveillance System (NEISS), Injury and Potential Injury Incidents (IPII), Deaths (DTHS), and In Depth Investigations (INDP). NEISS data is from a probability based sample. Sampling weights are used to project the cases from NEISS hospitals to national estimates provided the sample counts are large enough. Due to the small number of bath seat- and bath ring-related cases in NEISS, the NEISS cases were not projected nationally but rather used as case counts. IPII is a mixture of various types of information including newspaper clippings, consumer complaints, and reports from other government agencies such as medical examiners/coroners. Information is voluntarily submitted to IPII, so staff cannot be sure that information on all the fatalities and non-fatal incidents has been received. DTHS contains death certificates received from each state, and INDP collects investigations which have been conducted to gather additional information utilizing incident reports from other databases (NEISS, IPII, and DTHS) as a source. It should be noted that, for a given year, incidents are included on an ongoing basis for IPII and DTHS. In particular, additional reports are generally received for the most recent years.

Staff extracted data from CPSC's epidemiological databases for reports of incidents related to infant bathing products that occurred between January 1983 and December 2008. Bathtub submersion fatalities were also extracted for children younger than 2 years of age for the 2004 to 2008 time period. All incidents associated with bath seats/rings (product code 1557), baby bathtubs or bathinettes (product code 1544), and bathtubs (product codes 609, 610, 611 and 4030) were examined for inclusion in the infant bathing products database and counts. Incidents were also extracted for 1983 to 2008 from NEISS, IPII, DTHS, and INDP based on the incident summary narratives for the keywords 'BATHING', 'BATHED', 'SHOWERING', 'SHOWERED', 'BATHSEAT, 'BATH SEAT, 'BATHRING', 'BATH RING', 'BABY BATH', 'BATHINETTE' Source documents were checked to eliminate duplicate incident reports. A data review team[22] evaluated incident reports to make scope determinations and product classification determinations.

[22] Data review team consisted of CPSC staff from Hazard Analysis (Kevin Gipson), Engineering (Patricia Hackett and Troy Whitfield), Health Sciences (Sandra Inkster), Economic Analysis (Jill Jenkins), and Human Factors (Jonathan Midgett).

Appendix B: Definitions and Classifications for Infant Bathing Products

Drowning is defined as suffocation and death resulting from filling of the lungs with water or other substances or fluid, so that gas exchange becomes impossible. A near drowning is survival for any length of time after submersion in water and temporary suffocation. Submersion is defined as the act of placing or the condition of being under the surface of a liquid[23] . For this reason and since a considerable number of children are injured or do not die immediately, the term "submersion" better defines the hazard and will be used instead of the term "drowning."

The following product definitions and classifications were developed by the bath seat data review team in an effort to better clarify the incident data:

A) Bath seat: A product that contains a bottom for sitting. It is used for an occupant who is seated upright (80-110 degrees). It provides some level of rigid support to the occupant's back, sides, and/or front. It is not intended to retain water and is not inflatable. Design features may include the following:

1) Support arm - bath seat with an arm that hooks over the side of tub for stability.

2) Movable side - bath seat that has movable or folding sides used for allowing access to the child.

B) Bath ring: Similar to a bath seat, but with no integral seat bottom (a ring on top with columns that attach to the tub). If there is a seat bottom, it is removable and could be made of some foam type of material.

C) Infant bathtub: A rigid structure intended to retain water. It is not inflatable. Features may include the following:

1) Reclining - contains a built-in reclining side

2) Added support - contains something internal to the tub that provides some level of rigid support to the back, sides, and/or front.

3) Bucket/Pod – infant bathtub with high sides and small seating area. It is typically cylindrical in shape.

D) Bathing aids: Other miscellaneous devices not included above. This could include cushions (not inflatable) or other products used for bathing. Possible sub-categories are below:

1) Reclining sling - user is intended to be in a reclined position. It is not intended to retain water.

2) Inflatable - products that are intended to be inflated with air. Inflatables are available in the following forms: tub, ring, seat, and recliner.

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[23] *Dorland's Illustrated Medical Dictionary*, 30th Edition, Saunders, 2003.

E) Combination: A product that can be more than 1 of the above such as a bath seat/ infant bathtub product where, based on its configuration, it can be either.

F) Miscellaneous: Specialty products intended for children with special needs.

Appendix C: Summary Details of Fatal Incidents Involving Products Meeting ASTM-1967-04 Stability Requirements														
	Victims				Scenario					Bath Tub				
IDI No.	Age (m)	Sex	Height (in)	Weight (lbs)	Hazard Scenario	Time Left Unattended Per Caregiver Estimate (mins)	Seat Condition (based on photos, report), and Position	Child Position	Child Still In Seat	Bathtub Characteristics (per IDI report)	Tap Left On	Water At Bathtub Overflow	Water Level (in)	Other Child In Bath
040524HCN0631	10	M	27.5	18.5	arm disengaged from tub side	5 to 10	Intact, detached from tub side, overturned in tub	floating in tub, face down	unclear	standard shape - material not stated, smooth surface, no appliques	no	no	6.5	no
060203CNE0468	9	F	not stated	not stated	arm disengaged from tub side	2	intact, detached from tub side, overturned in tub	floating in tub	no	standard shape - material not stated	yes	possibly	unclear	no
060829HCC3832	8	F	28	24	overflow	15	intact- position not clear	floating in tub, face up	no	standard shape - material not stated	yes	yes	over-flowing	no
060306HWE5171	7	F	19.5	13	overflow	up to 60 (knocked out by fall)	intact, detached from tub side, overturned in tub	submerged, face up in tub	no	standard - porcelain coated - smooth	yes	yes	over-flowing	no
051110CCC3098	6.5	F	26	23	not used according to directions	2	modified seat (arm removed to fit tub), overturned in tub	in tipped seat, sideways with face in water	yes (modified seat)	oval tub, material not stated	no	no	7	no
060502HWE5320	6	F	26	18	not used according to directions	20	intact, detached from tub side, overturned in tub	submerged, lying on right side in tub	no	oval tub, arm not hooked over tub side	no	no	7.5	no
071004HCC3029	6	F	not stated	not stated	not used according to directions	few minutes to change diaper	not stated	in water - position not specified	not stated	utility tub	no	no	6	no
081217HCC3201	8	M	29.5	23	not used according to directions	3 to 4	intact, detached from tub side, overturned in tub	in flipped seat in tub, partially submerged	yes	standard shape - material not stated	yes	not stated	8.5	no
051110CCC1097	9.5	M	27.25	24	victim found in water	5	intact, position not stated	floating in tub, face down	no	not stated	yes	possibly	not stated	no
060403HNE0769	11	F	29	20	victim found in water	1 to 3	intact, attached to tub side	floating in tub, face up	no	standard shape, acrylic, smooth	no	no	11.5 to 12.0	no
061024HCC3037	11	F	28.5	16	victim found in water	10	intact, attached to tub side	floating in tub, face down	no	standard shape - material not stated	no	no	5 to 6	possibly 22 month old

IDI No.	Age (m)	Sex	Height (in)	Weight (lbs)	Hazard Scenario	Time Left Unattended Per Caregiver Estimate (mins)	Seat Condition (based on photos, report), and Position	Child Position	Child Still In Seat	Bathtub Characteristics (per IDI report)	Tap Left On	Water At Bathtub Overflow	Water Level (in)	Other Child Present In Bath
070705HCC3549	8	F	26	17	victim found in water	3 to 4	intact - position not stated	face down - not stated if floating or submerged	not stated	not stated	no	no	just over top ring of bathseat	no
071001HCC2001	10	F	31.1	21.6	victim found in water	counted to100 (1-2 min maybe)	unknown - seat Intact - child not in it	face down - not stated if floating or submerged	no	not stated	no	no	8 to 9	yes, 2 year old
071003HCC3005	8	M	28.5	30	victim found in water	not stated	likely Intact, attached to tub side	submerged, face down in tub	no	not stated	no	no	8	no
080903HCC3824	9	M	29	30	victim found in water	2 to 3	intact, attached to tub side	floating in tub, face up	no	standard shape, material not stated	yes	not stated	8 to 9	no
050927HCN0916	7.5	F	not stated	not stated	victim slumped over in water or partially out of seat	5	intact, attached to tub side	slumped forward over front edge of seat, face submerged, body leaning forward, partially out of seat but legs still in holes	yes- but moved forward - slumped over	standard shape, fiberglass	no	yes	6	no
070222HNE1976	8	F	28	23	victim slumped over in water or partially out of seat	5	intact, attached to tub side	slumped forward over front edge of seat, face submerged, body leaning forward	yes	standard shape - material not stated	no	no	9	no
080215HWE7194	9	F	not stated	not stated	victim slumped over in water or partially out of seat	did not leave; sitting on floor writing journal	intact, attached to tub side	slumped forward over front edge of seat, face submerged, body leaning forward	yes (most likely)	standard shape - material not stated	yes	not stated	about 3 inches from top of bath tub	no
070117HCC1253	24*	F	32.5	not stated	victim slumped over in water or partially out of seat	1 to 2	intact, attached to tub side	slumped forward over front edge of seat, face submerged, body leaning forward	yes	standard shape, fiberglass	no	not stated	6 to 8	No
070523HCC2511	10	M	29	23	unknown	not stated	unknown - seat intact	submerged, not stated if in seat or not	not stated	standard shape with whirlpool jets - material not stated	not stated	not stated	not stated	possibly 2.5 year old

* Victim had a disability

UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

Memorandum

Date: July 10, 2009

TO : Patricia L. Edwards, Project Manager, Baby Bath Seats

THROUGH: Hugh M. McLaurin, Associate Executive Director
Directorate for Engineering Sciences
Mark Kumagai, Director, Division of Mechanical Engineering

FROM : Troy Whitfield, Division of Mechanical Engineering

SUBJECT : Assessment of the ASTM Voluntary Standard for Infant Bath Seats, ASTM F 1967

Introduction and Background

Section 104 of the Consumer Product Safety Improvement Act (CPSIA), *Standards and Consumer Registration of Durable Nursery Products*, requires CPSC staff to assess the effectiveness of voluntary consumer product safety standards for durable infant or toddler products and to promulgate mandatory safety standards for these products. This memo assesses the effectiveness of the ASTM International (formally known as American Society for Testing and Materials) infant bath seat voluntary standard and recommends changes to be considered for the mandatory rule on bath seats.

On August 1, 2001 an advance notice of proposed rulemaking (ANPR) was published in the Federal Register (66 Fed. Reg. 39,692) to initiate rulemaking for baby bath seats. A review of fatal and non-fatal incidents identified three hazard scenarios associated with bath seats: 1) tip over of the bath seat due to instability[1], 2) entrapment in the leg/side openings of the bath seat, and 3) children escaping (coming out of) the bath seat. On December 29, 2003 a notice of proposed rulemaking (NPR) regarding bath seats was published in the Federal Register (68 Fed. Reg. 74,878). The NPR proposed stability and leg hole opening performance requirements to address the tip over and entrapment hazards as well as a proposed warning label requirement to address the escape issue.

Development of ASTM F 1967

The voluntary standard developed to address the identified hazard patterns associated with the use of bath seats is ASTM F 1967 *Standard Consumer Safety Specification for Infant Bath Seats*. The standard was first published in 1999 and has been through numerous revisions and republished in 2001, 2003, 2004, 2007 and 2008.

All three requirements proposed in the NPR were eventually added to the ASTM voluntary standard. The proposed NPR leg opening requirement was adopted in version ASTM F 1967-03.

[1] "Tip over" refers to the condition of the bath seat as discovered at the incident. No assumptions are made on how the bath seat tipped over because there were no witnesses to almost all the fatal incidents.

The 2004 version of the ASTM standard contained the stability requirements proposed in the NPR and the proposed NPR labeling requirement was adopted in ASTM F 1967-07 (it should be noted that a revised warning label relating the product to a drowning hazard was included in the 2004 version, but it was not the label proposed in the NPR). Since the inclusion of these three specific NPR requirements in the voluntary standard, only the stability requirement has undergone a significant revision, which occurred in 2007.

The significant changes to the 2007 version included the following:

- Revision of the stability requirement to test bath seats on a wet and soapy tub,
- Strengthening of the latching, locking durability requirement,
- Revision to the standard's scope to exclude tub-like products, and
- Enhanced warning label to match what was proposed in the NPR.

ASTM F 1967-07 was again revised in 2008 to harmonize the standard with a recently developed standard for infant bath tubs (ASTM F 2670). That revision was editorial in nature and did not significantly change any of the performance requirements. The current voluntary standard for bath seats, ASTM F 1967-08a, was published in December 2008 (see Appendix A for the history of this standard).

The Juvenile Products Manufacturers Association (JPMA), a national trade organization representing the interests of the prenatal to preschool products industry, provides certification programs for juvenile products. JPMA uses the most current version of the relevant ASTM standard in conducting its certification program. To obtain certification, manufacturers submit their products to an independent test laboratory for conformance testing to the most current voluntary standard. There were three bath seats JPMA certified to the 2004 ASTM standard. Currently, there is only one product on the market that is JPMA certified to ASTM F 1967-08a.

Current Performance Requirements of ASTM F 1967-08a

Leg/Side Openings

The 2003 and all subsequent versions of the bath seat standard contain leg/side opening performance requirements intended to prevent a child from sliding through a side or leg opening of a bath seat. There have been no reported fatalities due to a child sliding both legs though a leg opening in any bath seats that meet this leg opening requirement.

CPSC staff is aware of two recent non-fatal incidents involving young children slipping both legs and hips through a leg opening and becoming entrapped at the torso. These two entrapments were considered a submersion hazard (because the child's face either went underwater or could have if a caregiver had not intervened). To address these incidents, CPSC Human Factors staff is recommending changes to the leg opening requirement (See Tab C for details). Staff is also aware of entrapments involving legs inserted into the side/rear holes, though none presented a submersion hazard and only minor injuries were reported.

Stability

The current stability requirements in the ASTM standard are performed on a test platform (a ceramic coated steel bath tub) that contains two test surfaces: a smooth surface (the bare tub) and a slip-resistant surface (the bare tub with slip resistant strips applied). The requirement to

test on a slip-resistant surface was developed to address tip over of bath seats that depend on suction adhesion (suction cups) for all or part of their stability. Failure of the suction cups to adhere to the tub surface could result in an unstable bath seat that would increase the likelihood of the product tipping over. ASTM first adopted the slip-resistant stability performance requirements in ASTM F 1967-04.

In response to the new stability requirements of ASTM F 1967-04, two manufacturers redesigned their bath seats so that the stability did not rely wholly on suction cups. The new design contained an arm that is attached to the bath seat. The arm comes up and over the side of the bath tub and contains a spring-loaded clamp that secures onto the side of the bath tub to provide stability.

According to the CPSC Epidemiology staff (Table 4, Tab A), two fatal and three non-fatal incidents occurred in these newly designed bath seats where the bath seat tipped over when the clamp disengaged from the side of the tub. In response to these incidents, ASTM revised the stability requirement to take into account the wet and potentially soapy conditions of tub surfaces by requiring a soap solution be applied to parts of the test platform. This revision took effect in the 2007 version of the standard and is also in the current version, ASTM F 1967-08a.

Another fatal incident that occurred in a bath seat certified to the 2004 version of the standard involved an infant in a self-contained baby bath tub style product that also met the definition of a bath seat. The victim was left unattended and this combination product was found tipped over after it was placed inside a bath tub that contained about 6-8 inches of water. Since the product is a tub that is designed to contain water, the effect of placing it in a bath tub full of water made it unstable, similar to a boat on water. Staff is aware of at least four other similar fatal incidents where a self-contained infant bathing product (tubs only, not combination bath seats) was placed in a bath tub containing water. In response to these incidents, ASTM developed a new standard for Infant Bath Tubs, F 2670-09, which contains warning requirements regarding the placement of bath tubs inside other tubs. In addition, the 2007 version of the bath seat standard was revised to remove infant bath tubs from the scope of the standard.

CPSC staff is aware of two incidents that involved products that were certified to the 2007 or 2008 version of the ASTM standard. These two non-fatal incidents involved relatively minor injuries, i.e., scratches and cuts.

Testing of Current Product

A search of local retail stores conducted in late 2008 uncovered three products meeting the definition of a bath seat (as defined by the ASTM standard). Only one of the three was certified by JPMA to the 2008 standard. These three products were tested by CPSC staff to the current version of the bath seat standard, ASTM F 1967-08a. Initial testing results indicated that all three products failed the stability test requirements. The two non-certified seats contained suction cups that did not reliably affix themselves to the non-skid test surface, and thus failed.

While conducting the test protocol of the ASTM F 1967-08a standard on the JPMA certified bath seat, the clamping mechanism lifted up from the top surface of the side of the tub. The product was still clamped on to the tub side but the bath seat tilted (leaned rearward) from the installed and presumed 'manufacturer's intended use position'. A strict interpretation of the pass-fail criteria in the ASTM standard suggests that this bath seat, as tested by CPSC staff, also does not

meet the standard. However, the clamp, while askew from the initial position, still remained clamped to the test platform and thus one could conclude that the product did not tip over and did not disengage from the platform. For this reason, CPSC staff considers the pass/fail criteria to be ambiguous and believes it should be clarified to ensure that the strict interpretation is followed.

CPSC staff recommends measuring any tilt that occurs to the bath seat during the test to determine whether or not it moves from the intended use position. To determine the amount of allowable tilt, CPSC staff looked at other ASTM standards such as those for infant bouncer seats and toys which use a 10 degree table or tilt when testing for stability. In addition, testing was performed to determine the maximum level of tilt that might be expected solely due to the flexibility of the bath seat and its components. For the only JPMA certified bath seat, this was determined to also be 10 degrees. Thus, staff selected a tilt angle just above that level as the pass/fail criteria to insure passing products will remain in the 'manufacturer's intended use position.'

Staff tested additional samples of the JPMA certified bath seat with arm rest clamps to determine the repeatability of the test results associated with testing of the first sample. The current ASTM standard requires that the soapy test solution "thoroughly saturate the coverage area" which is defined in the standard as any internal surface of the tub well or tub bottom that makes contact with the product. Staff found that spraying the soap solution on the top and outer tub surface contact points as well as the interior surfaces affected the final position of the bath seat in terms of how much the product tilted during the test. Thus, to account for the worse case possibility of soapy water being splashed on the outer surfaces of the tub, staff recommends that the test solution also be applied to those areas.

In addition to the recommended changes outlined above, CPSC staff has two other editorial modifications to the stability requirement. They are included in Table 1 below.

Conclusions and Overview of Recommended Changes to the Current ASTM Bath Seat Standard

CPSC staff recommends adopting the requirements specified in ASTM F 1967-08a as the CPSC mandatory standard for bath seats along with additional requirements and edits as summarized below and detailed in Table 1:

Leg Opening Requirement

- CPSC HF staff is recommending a re-design of one of the probes used for this test. See Tab C of the briefing package for further details on this re-design and how it was developed.
- To remove language that is open to interpretation, CPSC staff recommends a change to the test procedure instruction on how to insert the Bath Seat Torso test probe.

Stability Requirements

- To address testing of products that can 'float' in the water when not occupied, staff is recommending for testing purposes only, that the bath seat can be temporarily weighed down in order to measure the correct water level.
- In addition, to address situations where the outside of the tub may be wet, CPSC staff recommends expanding the preparation of the test platform surfaces to require the soap

solution to be applied on **any** area where the bath seat makes contact, or might be expected to make contact during the test.

- To prevent misinterpretation of the pass/fail criteria, CPSC staff recommends that the pass/fail criteria be changed to reflect any tilting of the product measured during the test.
- CPSC staff recommends a re-ordering of the test procedure to clarify that the product should be installed after the flooding of the test platform.

TABLE 1: CPSC Staff Recommended Changes to ASTM F 1967-08a

(~~Strikeout~~ indicates current language that is recommended to be removed. **Bold** indicates additional language recommended. *Italics* is commentary to explain the recommendation.)

ASTM F1967 Section #	Recommended Change
6.1	**"If anytime during the application of force, the bath seat is no longer in the initial 'intended use position' and is tilted at an angle of 12-degrees or more from its initial starting position, it shall be considered a failure."**
7.4.1.1	~~"Immediately prior to installing the product on the test platform, the test surface shall be~~ **Prepare the test surface as follows:"** *The sections following should be renumbered accordingly.*
7.4.1.4	"Using a spray bottle containing a 1:25 mixture of test solution (see Table 1) to distilled water, **immediately before each test run** thoroughly saturate ~~the coverage area~~ **all test platform surfaces above the water line where the product makes contact and where contact might be expected**."
To follow the current 7.4.1.5	**"Install the product according to the manufacturer's instructions onto the test platform specified in 7.4.3".**
New Note near 7.4.1.5	**"For the purpose of measuring the water level, the product's seating surface can be temporarily weighed down to prevent the seat from floating."**
Between 7.4.2.2 and 7.4.2.3	**"Rigidly install an inclinometer to the test bar above the location where force is to be applied. The weight of the inclinometer and the fastening method shall be less than or equal to 2.2 pounds. The inclinometer shall have a measurement tolerance of less than or equal to 0.5 degrees. Measure and record the pre-test angle of the test bar."**
Between 7.4.2.3 and 7.4.2.4	**"Measure and record the maximum angle of the test bar, during the application of the 17.0 lbf load. Calculate the absolute value of the Change in Angle in degrees. Change in Angle = (Angle measured during test) – (Angle measured pre-test)."**
7.71	*Change Figure 4* (Bath Seat Torso Probe) *to probe figure recommended by CPSC HF staff (see Tab C)*
7.71	"... (see Fig. 4) in ~~the most adverse orientation~~ **all orientations** into each opening."
7.7.2	"... (see Fig. 6) in ~~the most adverse orientation~~ **all orientations** into each opening."

UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

Memorandum

Date: July 14, 2009

TO : Patricia L. Edwards, Project Manager, Bath Seats
Directorate for Engineering Sciences

THROUGH: Hugh McLaurin, Associate Executive Director HMM
Directorate for Engineering Sciences
Robert B. Ochsman, Ph.D. RBO
Director, Division of Human Factors (ESHF)

FROM : Jonathan D. Midgett, Ph.D. JDM
Engineering Psychologist

SUBJECT : Leg Opening Requirements in Bath Seats

In response to the Consumer Product Safety Improvement Act of 2008 (CPSIA), CPSC staff evaluated the standard for bath seats, ASTM F1967-08a, in preparation for adopting a mandatory rule.

Recent incident reports (090318HBB3440; 070416HCC3376) suggest that children are able to fit both legs and their hips through a single leg hole of a bath seat that complies with the current version of the voluntary standard. CPSC staff is recommending two revisions to the performance requirements for leg openings to address this entrapment/submersion hazard.

Human Factors (HF) staff was asked to address several issues regarding bath seats leg openings. This memo will review the following:

A) What probe dimensions and shapes would prevent leg opening entrapment/submersion hazards?
B) Will shrinking the leg opening size affect the utility of the product?

A. Probe Dimension Revisions

The leg-opening requirement in ASTM F1967-08a uses two hardwood test probes for performance tests of occupant retention. These performance tests were developed to address entrapment/submersion hazards, i.e., the hazards of children sliding (submarining) through leg holes, and torso-entrapment submersion incidents. The two probes test the interior dimensions of bath seats, restricting the seats to sizes and shapes in order to limit a child sliding down and getting trapped underwater. The probe used for testing the leg opening is called the "torso probe" in the ASTM standard. Based on the hip breadth and buttock depth of the smallest (5th percentile,

5- to 6-month olds) intended child occupants, this probe tests the leg openings of a bath seat with the purpose of preventing a small child from sliding through those openings (see Figure 1). If the torso probe cannot pass through the leg hole opening, the bath seat passes the test. The 5th percentile measurements[1] were chosen for the smallest intended users because those children are the most vulnerable. These measurements match ASTM's high chair probe in F404-07 *Standard Consumer Safety Specification for High Chairs.*

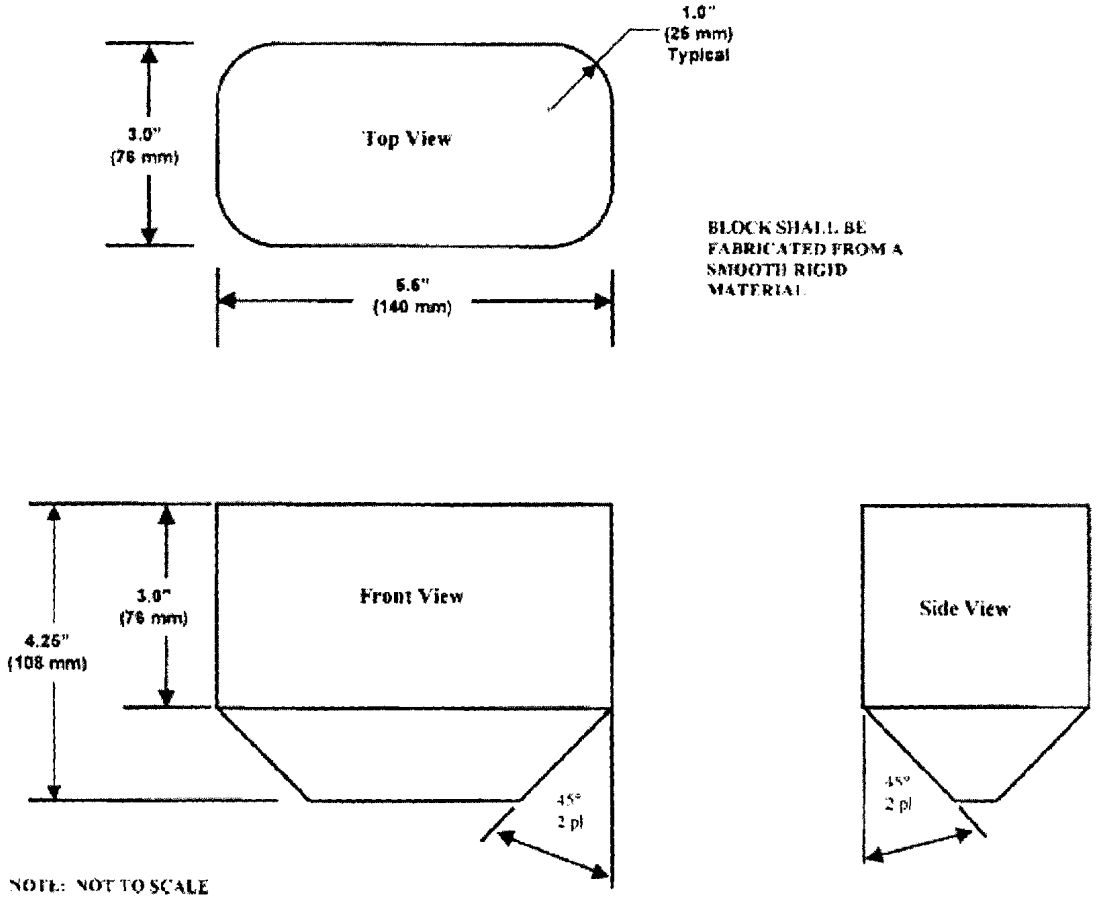

Figure 1: Bath Seat Torso Probe in ASTM F1967.08a

The shoulder probe test, based on the hip, shoulder, and hip-to-shoulder dimensions of the smallest intended child occupant (5th percentile, 5- to 6-month olds), restricts the expansiveness of the seating area, called the "occupant retention space," to prevent a child from slumping into the seating area and becoming entrapped in the reclined position. This hazard scenario is described in the Commission's previous Notice of Proposed Rulemaking (NPR) on baby bath seats as "entrapment and submersion." Three deaths and 18 non-fatal incidents were associated with these scenarios at that time. 68 Fed. Reg. 74878 (Dec. 29, 2003).

[1] The available data do not precisely match the age group needed for this analysis. The data are divided into 3- to 5-month old and 6- to 8-month old groups, either of which would be an appropriate choice for describing 5- to 6-month olds. The measurements for both age groups overlap, so the most stringent measurements were selected from either age category depending on which was the smallest. In the case of hip breadth, the 5th percentile 6- to 8-month old measurement was chosen because it is smaller, and therefore more stringent, than the next youngest age grouping available (3- to-5-month olds) (Snyder, et al, 1977).

The ASTM standard's torso probe that is meant for testing leg openings and was adopted from the high chair standard, is a rigid, rectangular block of wood with curved, upright sides and a wedge-shaped base. This probe is not analogous in shape or density to a child's body. Children are pliable and rounded. Thus a child's body, covered in soapy water, can more easily slide through openings than the rigid wooden probe. Failures seen with bath seats made to comply with this probe may not be found in high chairs because high chair use involves clothed, diapered, dry and un-soapy children.

Staff recommends creating a different probe, one with smaller dimensions than the torso probe, to account for these differences in the bathing environment. Modeling the pliable features of a child's torso is not practical, thus the recommendation is to decrease the size of the ASTM standard's rigid wood torso probe and to use a larger radius on the corners. Therefore, staff recommends decreasing the length of the vertical and horizontal axes of the current probe by about 5% and rounding the corners more (see Figure 2) which produces a perimeter of about 14 inches. The perimeter measurement of this probe more closely approximates the circumference of the child in IDI 090318HBB3440, measured tightly around the upper pelvis in such a manner as to compress the skin[2]. HF staff is not recommending any changes to the shoulder probe (not pictured) currently used in ASTM F1967-08a.

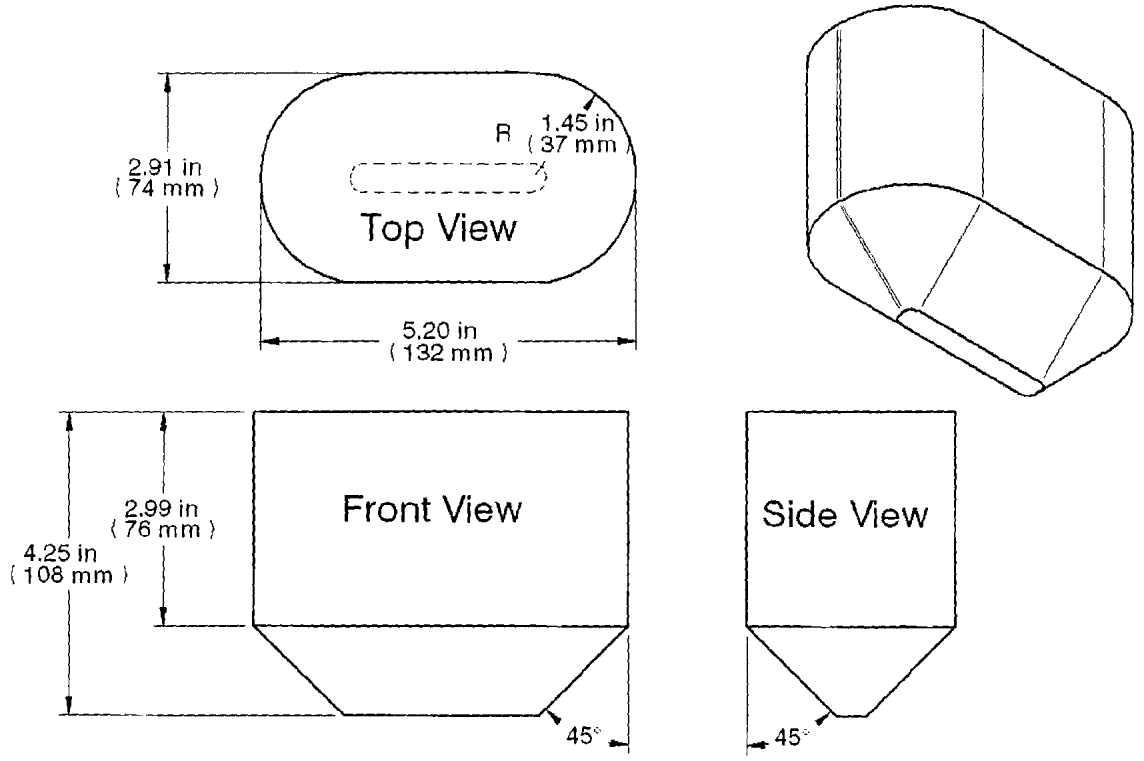

Figure 2: Modified Torso Probe

[2] HF staff contacted the victim's mother after the IDI was filed to get this measurement. The measurements were taken in two places around the victim's waist (13.5 inches) and around the hip region (15.25 inches).

B. Leg Openings and Product Utility

The torso probe dimensions are based on the breadth of a child's hips to prevent his/her whole body from going through a leg opening; therefore, a leg opening that passes the test using the modified torso probe could have sufficient space for the leg of a child up to twice the age of the oldest recommended users. The same is true of the shoulder probe, which is designed to prevent interior volumes within bath seats wide enough for a child to lie down. The probe's width and length are based on the shoulder breadth and torso length of a small child, and since these dimensions are much larger than the space required for a child to sit upright within, they allow older children to occupy the seat. A seating area that meets the test could hold the seated torso of the maximum 20- to 23-month old child (58.2 cm hip circumference (Snyder, et al. 1977)) with 35 cm to spare, circumferentially. The diameter of a seat with this circumference is about 30 cm. That is about 10 cm larger than the hip breadth of a maximum 20- to 23-month old child. This is due to significantly overlapping variation among the youngest and oldest bath seat users.

This may seem counter-intuitive because current designs of bath seats have perpendicular side-structural members and flat seat pans, which if made smaller, may not permit a larger child to easily get into them. The test probes, however, do not restrict the many possible designs for entry and egress of bath seats. The limits these probes place on the size of the occupant retention space will still allow manufacturers to make seats that accept large children. The two probes still allow designs that permit a child to be easily seated, removed, and washed. HF staff believes that this performance requirement will not limit the market of potential users for products that pass the test.

In conclusion, altering the leg opening requirement will help prevent entrapment/submersion incidents, but will still allow manufacturers to design bath seats that accept all of the intended user population. Utility does not have to be compromised. Both test probes allow openings sufficient to comfortably contain the thighs and pelvis of maximum-sized children up to and possibly over twice the age of the manufacturer's recommended users (5- to 7-months old).

C. Other Concerns

In addition to leg hole opening entrapments, ten incidents show that bath seat occupants can become entrapped in openings in structures surrounding the occupant space that were not intended to be leg openings. These entrapments sometimes require the occupant to be cut out of the seat, sometimes producing abrasions and/or bruises. CPSC Health Sciences (HS) staff notes that being entrapped in the seat has the potential for serious injury. Due to the low severity of incidents on record, staff has not prepared performance requirements to address non-leg hole openings, but will continue monitoring this concern.

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Available at http://www.itl.nist.gov/iaui/ovrt/projects/anthrokids/

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

Memorandum

Date: July 31, 2009

TO : Patricia Edwards
Project Manager for Baby Bath Seats

THROUGH: Gregory B. Rodgers, Ph.D., Associate Executive Director, GBR
Directorate for Economic Analysis
Deborah V. Aiken, Ph.D., Senior Staff Coordinator, GBR for DVA
Directorate for Economic Analysis

FROM : Jill L. Jenkins, Ph.D., Economist JLJ
Directorate for Economic Analysis

SUBJECT : Initial Regulatory Flexibility Analysis to Evaluate the Possible Economic Impact of the Proposed Standard for Baby Bath Seats on Small Businesses

Introduction

On August 14, 2008, the Consumer Product Safety Improvement Act (CPSIA) was enacted. Among its provisions, section 104 requires that Consumer Product Safety Commission (CPSC) staff evaluate the currently 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. Bath seats are among the durable products specifically named in section 104.

Upon review, CPSC staff proposes adopting the voluntary ASTM standard for bath seats (F 1967 – 08a) with a few modifications. The main provisions of the proposed standard include: 1) stability requirements, which would be updated to eliminate any possible misinterpretation of the pass/fail criteria; 2) requirements for restraint systems, depending upon whether they provide back restraint only or additional side and/or front support; 3) requirements that any suction cups remain attached to both the seat and the surface during use; 4) leg opening requirements intended to prevent children from slipping through them, which would be updated to use a modified torso probe that is more analogous to a human infant in a bathing environment; and 5) label requirements which specifically state that children have drowned in bath seats. The standard also includes various general requirements, including bans on hazardous sharp points or edges and the liberation of any small parts both before and after testing, among other things. CPSC staff also recommends modifying the ASTM section on *Surface Preparation and Product Installation* (7.4.1) to clarify the correct order of events for test installation, extending the portions of the test platform that must be saturated with the test solution mixture, and allowing for temporarily weighting the product to determine water level. Additionally, CPSC staff recommends clarifying

the scope of the voluntary standard to further define the type of support that defines a bath seat. These requirements apply to bath rings as well as infant bath seats.

The Regulatory Flexibility Act (RFA) requires that proposed rules be reviewed for their potential economic impact on small entities, including small businesses. Section 603 of the RFA requires that CPSC staff prepare an initial regulatory flexibility analysis and make it available to the public for comment when the general notice of proposed rulemaking is published. The initial regulatory flexibility analysis must describe the impact of the proposed rule on small entities and identify any alternatives that may reduce the impact. Specifically, the initial regulatory flexibility analysis must contain:

1. a description of and, where feasible, an estimate of the number of small entities to which the proposed rule will apply;
2. a description of the reasons why action by the agency is being considered;
3. a succinct statement of the objectives of, and legal basis for, the proposed rule;
4. a description of the projected reporting, recordkeeping, and other compliance requirements of the proposed 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. an identification, to the extent possible, of all relevant Federal rules which may duplicate, overlap, or conflict with the proposed rule.

Additionally, the initial regulatory flexibility analysis must contain a description of any significant alternatives to the proposed rule which accomplish the stated objectives of the proposed rule while minimizing the economic impact on small entities.

The Product

Infant bath seats and bath rings are marketed as an aid in bathing infants from the time they can sit up unassisted (around 5 months) to the time they begin pulling themselves into a standing position (around 10 months). The ages are only approximate; the behaviors are the guide to appropriate use. According to the Juvenile Products Manufacturers Association (JPMA), bath seat use is generally discontinued once children are able to stand up or escape from the product.[1] Bath seats are generally used in adult bathtubs and allow the child to be held in a seated position, thus freeing the caregiver from holding onto the child during bathing.

The Market for Bath Seats

Baby bath seats and bath rings are produced and/or marketed by juvenile product manufacturers and distributors. There are currently three manufacturers and one importer of baby bath seats active in the U.S. market. All known suppliers are members of the Juvenile Products Manufacturers Association (JPMA), the major U.S. trade association that represents juvenile

[1] "Initial Comments in Opposition by the Juvenile Products Manufacturers Association" in response to Petition HP00-4, October 23, 2000.

product manufacturers and importers. Bath seats are available in many countries besides the U.S., including Canada, Australia, the U.K., Italy, and Taiwan.[2] Although there are currently only four firms supplying bath seats to the U.S. market, any foreign manufacturer is a potential supplier. Of the four firms currently selling bath seats in the U.S. market, all but one qualifies as a small business according to standards set by the U.S. Small Business Administration (SBA). Each produces a variety of children's products, of which bath seats are only a small proportion.

In a 2005 survey conducted by the American Baby Group (*2006 Baby Products Tracking Study*),[3] 42 percent of new mothers[4] indicated that they owned a baby bath seat or ring. Of these, 15 percent were handed down or purchased second-hand. This suggests that about 85 percent of the bath seats were acquired new, indicating annual sales of about 1.5 million (.85 x .42 x 4.1 million births per year).[5] JPMA's estimate of annual sales, provided in 2000, was lower, about one million.[6]

In 2000, the JPMA also estimated that there may be up to two million baby bath seats in use.[7] This is somewhat higher than an estimate that can be derived from the most recent *Baby Products Tracking Study*. Since, in 2005, about 42 percent of new mothers said they owned baby bath seats or rings and there are about 4.1 million births per year, about 1.7 million bath seats were available for use for infants under the age of one year. From incident reports, we know that some baby bath seats are used with babies older than 1. According to the Directorate for Epidemiology, 93 percent of the fatal accidents involving bath seats occurred with children between the ages of 5 and 12 months.[8] Consequently, if we apply the ownership rates from the *2006 Baby Products Tracking Study* to the population of children up to 18 months old, the total number of bath seats available for use in 2005 could be as high as about 2.6 million.[9]

Reason for Agency Action and Legal Basis for the Draft Proposed Rule

Section 104 of the CPSIA requires CPSC to promulgate a mandatory standard for baby bath seats that is substantially the same as, or more stringent than, the voluntary standard. Based on

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[2] Health Canada is currently considering banning baby bath seats.

[3] 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 was performed in 2005, it may not reflect changes in the bath seat market that have occurred since the modifications to the voluntary standard in 2004.

[4] New mothers represent those who have recently given birth, as opposed to expectant mothers. Therefore, the application to annual births is appropriate.

[5] 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 2006," *National Vital Statistics Reports* Volume 57, Number 7 (January 7, 2009): 29 (Table 1). Number of live births in 2005 is rounded from 4,138,349. All other decimals are rounded as well.

[6] Ibid.

[7] Ibid.

[8] Memorandum from Kevin Gipson, Directorate for Epidemiology dated July 31, 2009, Subject: Hazard Analysis Memorandum for Bath Seat NPR Briefing Package.

[9] Including the entire population up to age 2 would likely cause an over-estimate of the units in use, since most children probably stop using bath seats when they can easily get out of them.

the pattern of injuries under the current voluntary standard, CPSC staff is recommending a few modifications to the current ASTM standard.

Compliance Requirements of the Draft Proposed Rule

In order to meet the requirements of the Consumer Product Safety Improvement Act (CPSIA), CPSC staff recommends adopting the voluntary ASTM standard for bath seats with three modifications. Key components of the current ASTM infant bath seats standard (F 1967 – 08a) include:[10]

- Torque/tension test for graspable components – ensures that component pieces such as those intended to protect children from sharp edges, points, or entrapment of fingers and toes cannot be removed by them.
- Accessible holes and openings tested for entrapment hazards – ensures that existing openings are large enough not to trap children's fingers and toes.
- Stability test for preventing tip-over – ensures that bath seats will not tip over in "worst case scenario" situations, including on tubs with safety tread strips to prevent slipping.
- Tests on restraint system (where required) – except for seats that provide only back support, sets requirements for passive crotch restraints to prevent children from sliding through the front or sides of the seat; also bars additional restraint systems from being used in conjunction with passive restraints to prevent a false sense of security on the caretaker's part.
- Scissoring, shearing, and pinching – ensures axes and fastening points are designed to prevent these types of injuries to children.
- Static load test to seat – intended to prevent incidents of product breakage.

The voluntary standard also requires that any suction cups used adhere both to the product and the attached surface. Additionally, the voluntary standard includes warning label language emphasizing that children have drowned while using bath seats.

The three ASTM infant bath seat requirements that CPSC staff recommends modifying are:

1. Leg openings
    - Change the shape of the torso probe to make it more analogous to a wet and slippery human infant. Specifically, decrease the length of the vertical and horizontal axes of the current probe by 5% and round the corners with a 1.45" radius rather than the current 1" radius to account for the pliability of child torsos.[11]

[10] JPMA, *ASTM Standards listed in JPMA Directory*, http://www.jpma.org/pdfs/JPMA_Directory_Final2008.pdf.
[11] Memorandum from Jonathan D. Midgett, Division of Human Factors, Directorate for Engineering Sciences dated July 14, 2009, Subject: Leg Opening Requirements in Bath Seats.

- Specify that the probe needs to be inserted in all orientations, rather than in only the most adverse orientation for each opening.[12]

2. Stability requirements
   - Add an additional requirement that addresses units that may tilt, but neither tip-over nor return to the "intended use position" after the specified force has been applied. The new requirement would state: "If the 10 s application of force is attained and the seat does not return to the initial 'intended use position' and remains tilted at an angle of 12-degrees or more with the test platform, it shall be considered a failure." This would clear up any possible misinterpretation of the pass/fail criteria.[13]
3. Surface preparation and product installation
   - Clarify the correct order of events for test installation (i.e., prepare the test platform, install the product, and then flood the test platform to the specified level).[14]

Additionally, CPSC staff recommends clarifying the scope of the voluntary standard to specifically state what constitutes "support" on a bath seat. The draft proposed standard would require that bath seats entering commerce meet the new requirements within six months of publication of the final rule. It would not be retroactive.

The majority of older bath seat designs that relied on suction cups for stability cannot meet this standard. When ASTM's performance requirements were modified in 2004 (F 1967 – 04), two major bath seat manufacturers (Safety 1st and The First Years) developed alternative seats that fasten to the sides of bathtubs for stability. Both were certified by JPMA as meeting the ASTM voluntary standard. The key change to the voluntary standard in 2004 was to require testing in an actual bathtub with both a smooth and non-slip surface. Another change to the 2004 standard was the warning label specifically tying drowning hazards to bath seats.

In response to additional safety concerns, the voluntary standard was further modified in 2007 to require that a soapy water solution be used during testing on any internal surface of the tub well or tub bottom that the bath seat is designed to contact. Safety 1st made the necessary modifications to comply with this new requirement and is currently the only manufacturer with an ASTM-compliant bath seat. Further enhancement of the warning label was also made in the 2007 version of the standard.

Other Federal Rules

CPSC staff has not identified any Federal or state rule that either overlaps or conflicts with the staff's draft proposed rule.

[12] Memorandum from Troy Whitfield, Division of Mechanical Engineering, Directorate for Engineering Sciences dated July 10, 2009, Subject: Voluntary Standard for Infant Bath Seats.
[13] Ibid.
[14] Ibid.

Impact on Small Businesses

There are four firms currently marketing baby bath seats in the United States. One is a large domestic manufacturer and another is a small foreign manufacturer. The impact on the remaining two small firms—a small domestic manufacturer and a small domestic importer—are the focus of this analysis. All of the bath seats supplied by these small firms are expected to require modifications to meet the proposed standard.

Modifying existing bath seats to achieve compliance with the draft proposed standard would result in one-time product development costs and possible increased costs of production. Product development costs involve costs associated with redesign of the product, including product testing and retooling of manufacturing equipment. Based on the retail price differential between the compliant and non-compliant bath seats, these costs could amount to approximately $5 to $10 per bath seat.[15]

It is not clear at this time whether manufacturers will choose to design baby bath seats that meet these proposed requirements. Subsequent to the 2004 ASTM standard redesign, unit sales of the manufacturers' conforming seats fell substantially and, since 2002, bath seat ownership has declined substantially as well, down 7 percent, from 49 percent in 2002 to 42 percent in 2005 (*2006 Baby Products Tracking Study*). Consequently, a price increase associated with meeting the requirements of the mandatory standard will likely reduce the quantity of bath seats demanded further and hence unit sales. The magnitude of such a reduction is unknown. Additionally, product demand may be affected by a number of other factors, including changes in the perceived usefulness of the product, the expected useful life of the product, the perceived risk associated with the product, and other variables such as the number of births, household incomes, and the availability of substitutes.

It is possible that manufacturers may not be able to (or may choose not to) produce a commercially viable bath seat that meets the draft proposed standard. The impact of discontinuing baby bath seat production for the small domestic manufacturer, with aggregate annual sales of approximately $5-10 million,[16] is unlikely to be large. They are currently producing approximately 78 other juvenile products, including several substitutes for baby bath seats, such as baby bath tubs, reclining seats, slings, etc.

Since importers do not manufacture bath seats, the effect of the regulation would be felt indirectly, requiring a shift in suppliers rather than the design and production of a different product.[17] The impact on the small domestic importer with annual sales of approximately $1 million,[18] is expected to be small as well. They would most likely respond by discontinuing the import of their non-complying bath seat, either replacing them with a complying product or another juvenile product. The option to import an alternative product is a reasonable and realistic

[15] The lowest available prices have been used here. However, there is substantial variation among retailers. It is not believed that the three additional modifications proposed to the voluntary standard will have a substantial impact on costs.
[16] ReferenceUSAGov. Hoover's puts estimated annual sales at $5.7 million.
[17] Or, alternatively, the discontinuation of production.
[18] ReferenceUSAGov.

alternative to offset the loss of revenue from bath seat sales. The firm is currently importing approximately 165 juvenile products of which 3 are substitutes for their imported bath seat.

Hence, even if the cost of developing a compliant product proves to be a barrier for individual small firms, the loss of bath seats as a product category is expected to be minor and would likely be mitigated by increased sales of competing products, such as multi-stage infant bathtubs, or entirely different juvenile products.

Alternatives

The initial regulatory flexibility analysis must contain a description of any significant alternatives which accomplish the stated objectives of the proposed rule while minimizing the economic impact on small entities. Under section 104 of the CPSIA, one alternative that would reduce the impact on small entities is to make the voluntary standard mandatory with no modifications. While this alternative would reduce the impact on the one large (and currently ASTM-compliant) domestic manufacturer, it is unlikely to substantially reduce the impact on the remaining small businesses.

Because the bath seats produced/imported by each of these small firms are not currently in compliance with the voluntary standard, they would require modification under either the proposed standard or the alternative standard. Since it is not believed that the three additional modifications to the voluntary standard would have a substantial impact on costs, it is unlikely that making the voluntary standard mandatory without any modifications will substantially reduce the impact on these small firms.

Draft *Federal Register* Notice
Safety Standard for Infant Bath Seats
Notice of Proposed Rulemaking (NPR)

[Billing Code 6355-01-P]
CONSUMER PRODUCT SAFETY COMMISSION

16 CFR Part 1215

Safety Standard for Infant Bath Seats: Notice of Proposed Rulemaking

AGENCY: Consumer Product Safety Commission.

ACTION: Notice of proposed rulemaking.

SUMMARY: Section 104(b) of the Consumer Product Safety Improvement Act of 2008 ("CPSIA") requires the United States Consumer Product Safety Commission ("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 is proposing a safety standard for infant bath seats in response to the direction under section 104(b) of the CPSIA.

DATES: Written comments must be received by **[insert date 75 days after publication in *Federal Register*].**

ADDRESSES: You may submit comments, identified by Docket No. [insert CPSC docket number], by any of the following methods:

Electronic Submissions

Submit electronic comments in the following way:

Federal eRulemaking Portal: http://www.regulations.gov. Follow the instructions for submitting comments.

To ensure timely processing of comments, the Commission is no longer accepting comments submitted by electronic mail (e-mail) except through www.regulations.gov.

Written Submissions

Submit written submissions in the following way:

Mail/Hand delivery/Courier (for paper, disk, or CD-ROM submissions), preferably in five copies, to: Office of the Secretary, Consumer Product Safety Commission, Room 502, 4330 East West Highway, Bethesda, MD 20814; telephone (301) 504-7923.

Instructions: All submissions received must include the agency name and docket number for this rulemaking. All comments received may be posted without change, including any personal identifiers, contact information, or other personal information provided, to http://www.regulations.gov. Do not submit confidential business information, trade secret information, or other sensitive or protected information electronically. Such information should be submitted in writing.

Docket: For access to the docket to read background documents or comments received, go to http://www.regulations.gov.

FOR FURTHER INFORMATION CONTACT: Patricia Edwards, Project Manager, Directorate for Engineering Sciences, Consumer Product Safety Commission, 4330 East West Highway, Bethesda, MD 20814; telephone (301) 504-7577; pedwards@cpsc.gov.

SUPPLEMENTARY INFORMATION:

A. Background and Statutory Authority

1. The Consumer Product Safety Improvement Act

The Consumer Product Safety Improvement Act of 2008 ("CPSIA", Pub. Law 110-314) was enacted on August 14, 2008. Section 104(b) of the 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 standard if the Commission concludes that more stringent requirements would further reduce the risk of injury associated with the product. Section 104(b)(2) of the CPSIA directs the Commission to begin rulemaking for two standards by August 14, 2009. In this document the Commission proposes a safety standard for bath seats. The proposed standard is

substantially the same as a voluntary standard developed by ASTM International (formerly known as the American Society for Testing and Materials), ASTM F 1967-08a, "Standard Consumer Safety Specifications for Infant Bath Seats," but the Commission is proposing some modifications to strengthen the standard.

2. Previous Commission Rulemaking Concerning Bath Seats

The Commission has been engaged in regulatory efforts for infant bath seats for several years. In July 2000, several consumer organizations petitioned the Commission to ban bath seats under the Federal Hazardous Substances Act ("FHSA"). The consumer organizations asserted that bath seats presented an unreasonable risk of injury and death due to drowning. On August 1, 2001, the Commission published an advance notice of proposed rulemaking ("ANPR") in the Federal Register initiating a rulemaking proceeding on bath seats (66 FR 39692). The Commission issued a notice of proposed rulemaking that was published in the Federal Register on December 29, 2003 (68 FR 74878) proposing requirements for stability, leg openings, and warnings. Elsewhere in this issue of the Federal Register, the Commission has issued a notice that the Commission has terminated the bath seat rulemaking proceeding that it

began under the FHSA because it has been superseded by this rulemaking required under section 104(b) of the CPSIA.

B. The Product

Infant bath seats are used in a tub or sink to support a seated infant while he or she is being bathed. They are marketed for use with infants between the age of approximately 5 months (the time at which infants can sit up unassisted) to the age of approximately 10 months (the time at which infants begin pulling themselves up to a standing position). Currently, there are three manufacturers and one importer of bath seats active in the United States. All are members of the Juvenile Products Manufacturers Association ("JPMA"), which is the major United States trade association representing juvenile product manufacturers and importers. All produce a variety of children's products in addition to bath seats.

The exact number of bath seats currently sold or in use is not known. A 2005 survey by the American Baby Group indicated annual sales of bath seats of about 1.5 million and about 1.7 million bath seats in use. In 2000, JPMA estimated annual sales of bath seats at about one million and estimated up to 2 million bath seats in use for infants under one year of age.

C. ASTM Voluntary Standard

ASTM F 1967, *"Standard Consumer Safety Specification for Infant Bath Seats,"* was first published in 1999. Between 2003 and 2007, the ASTM standard was subsequently revised several times to include requirements that the Commission proposed in its 2003 NPR and to exclude tub-like products.

In response to changes in the ASTM standard, product design changed significantly. The new designs use an arm that clamps onto the side of the bath tub rather than relying on suction cups for stability. The current voluntary standard for bath seats, ASTM F 1967-08a, was published in December 2008. The current version contains the same labeling, stability and leg opening requirements as the 2007 version.

JPMA provides certification programs for juvenile products, including bath seats. Manufacturers submit their products to an independent test laboratory to test the product for conformance to the ASTM standard. Currently only one bath seat model is certified to ASTM F 1967-08a.

The current ASTM standard includes performance requirements specific to bath seats to address the hazards of the bath seat tipping over or the child becoming entrapped and/or submerged in the leg openings. The

standard also contains labeling requirements to address the child coming out of the bath seat.

General requirements in the current ASTM standard, none of which the Commission is proposing to modify, include:

- Requiring compliance with CPSC's standards concerning sharp points and edges, small parts, and lead paint (16 CFR parts 1303, 1500.48, 1500.49, 1500.50, 1500.51, and 1501);
- Requirements for latching and locking mechanisms;
- Requirements to prevent scissoring, shearing and pinching;
- Entrapment testing for accessible holes and openings;
- Torque/tension test for graspable components; and
- A requirement that warning labels be permanent.

The ASTM Standard's requirements specifically related to hazards posed by bath seats (some of which the Commission is proposing to modify as discussed in part E of this preamble) include:

- Test for stability performed on a test platform containing both a slip resistant surface and a smooth surface to test whether the bath seat may tip over during use;

- Requirements for restraint systems requiring passive crotch restraint to prevent child from sliding through front or sides of the seat;
- Static load test to test whether the bath seat may break or become damaged during use;
- A requirement that suction cups (if used) adhere to the bath seat and the surface;
- A leg opening requirement to prevent children from sliding through these openings;
- A leg opening requirement restricting the expansiveness of the seating area to prevent the child from slumping and becoming entrapped in a reclined position; and
- Requirements for warning labels and instruction manual.

D. Incident Data

From 1983 through 2008, there were 295 non-fatal bath seat incidents reported to CPSC staff. A submersion hazard was identified in 151 of these non-fatal incidents of which 116 were actual submersion incidents. (Submersion is defined as the act of placing, or the condition of being, under water. A submersion hazard indicates that submersion is possible, as a direct result of the incident. An actual

submersion is when the victim actually became submerged as a result of the incident.) The remaining 143 reports were non-submersion hazards such as lacerations, limb entrapments, etc. There have been 171 reported fatalities involving bath seats for this same time frame, although more fatalities may have occurred because fatality reporting is not considered to be complete for 2006, 2007, and 2008. All of these fatalities were submersions. None of the identifiable products involved in the fatal bath seat incidents were certified to meet ASTM F 1967-08a or its predecessor, ASTM F 1967-07. Two of the non-fatal incidents involved products certified to ASTM F 1967-07, neither of which were submersion hazards, thus were not life threatening.

Of the 171 fatal incidents, 20 involved products that were identified as being certified to the 2004 version of the ASTM standard. Two of the 20 were due to the arm of the bath seat disengaging from the bath tub and 17 were due to other causes such as the child slumped over the side of the bath seat (4 incidents), children found out of the bath seat in the water (7 incidents), miscellaneous causes, such as consumers not attaching the clamp to the tub side (4 incidents), and overflowing bathtubs (2 incidents). There was also an unknown cause for one incident.

Fifty-one of the non-fatal incidents involved bath seats certified to the 2004 version of the ASTM voluntary standard. Fifteen of these non-fatal incidents involved a bath seat that was the subject of a safety alert issued in 2005 due to component failures occurring when the bath seat was installed on non-traditional tubs. Of the remaining 36 incidents, five were considered submersion hazards, and thus could have resulted in a fatality had a caregiver not been present. These five include three arm disengagements, one entrapment where the child's torso slipped completely into one leg opening, and one case where a child was found out of the bath seat in the water. In addition, there has been another recent torso entrapment incident reported to CPSC staff in 2009.

E. Assessment of Voluntary Standard ASTM F 1967-08a and Description of Proposed Changes and the Proposed Rule

1. Section 104(b) of the CPSIA: Consultation and CPSC Staff Review

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. This consultation process began in October 2008 during the ASTM subcommittee meeting regarding the ASTM infant bath seat

voluntary standard. Consultations between Commission staff and members of this subcommittee are still ongoing.

The Commission has reviewed the incident data and the ASTM F 1967-08a standard and conducted testing on bath seats to assess the ASTM standard. CPSC staff tested three products to the current version of ASTM F 1967-08a: two bath seats that use only suction cups to provide stability and a third that primarily uses a clamping mechanism located on an arm that secures the bath seat to the side of the tub. The bath seat with the arm was labeled as being certified by JPMA to the ASTM standard.

Initial testing results indicated that all three products failed the stability test requirements in ASTM F 1967-08a. The two non-certified seats that use only suction cups for stability could not affix themselves to the slip-resistant surface, and thus failed.

During the testing of the JPMA certified bath seat, the arm rest of the clamping mechanism lifted up from the top surface of the side of the tub. The clamp did not disengage from the tub, but the arm rest contact points were no longer in contact with the tub surface. The bath seat remained in a tilted position from the installed and presumed "manufacturer's intended use position." A strict interpretation of the pass-fail criteria suggests that this

bath seat, as tested by CPSC staff, also does not meet the standard, but the clamp, while not in the initial position, remained clamped to the side of the bath tub. Thus, one could assert that, because the product did not tip-over and did not disengage from the platform, the product complied with the standard. This result indicates that the pass/fail criteria are ambiguous and could result in passing a bath seat that could nevertheless pose a stability hazard to an infant.

The current ASTM standard requires that a soapy test solution "thoroughly saturate the coverage area" which is defined in the ASTM standard as any internal surface of the tub well or tub bottom that makes contact with the product. Staff found that spraying the soap solution on the top and outer surface contact points as well as the interior surfaces affected the final position of the bath seat and therefore could affect the results of the test.

Consistent with section 104(b) of the CPSIA, the Commission, through this proposed rule, would establish a new 16 CFR part 1215, "Safety Standard for Bath Seats." The new part would incorporate by reference the requirements for bath seats in ASTM F 1967-08a with certain changes to specific provisions to strengthen the ASTM standard as discussed below.

2. Proposed Changes to the ASTM Standard's Requirements

While most of the requirements of the current ASTM standard are sufficient to reduce the risk of injury posed by bath seats, the Commission concludes that several provisions should be modified to make them more stringent and further reduce the risk of injury and to clarify the test procedures.

To best understand the proposed standard, it is helpful to view the current ASTM F 1967-08a standard for bath seats at the same time as the Commission's proposed modifications. The ASTM standard is available for viewing for this purpose during the comment period through a link on the Commission's website at [**INSERT LINK**].

a. Definition of bath seat (proposed § 1215.2(b)(1))

The Commission's 2003 NPR defined a bath seat as an article that is used in a bath tub, sink, or similar bathing enclosure and that provides support, at a minimum, to the front and back of a seated infant during bathing by a caregiver. The Commission believes that this definition is preferable to that used by ASTM which does not define the type of support because the proposed definition better clarifies what is (or is not) a bath seat.

b. **Stability requirement**

Limiting the tilt of the bath seat (proposed § 1215.2(b)(2), (6) and (7)). As discussed above, during testing the Commission staff found that the clamping mechanism on one bath seat lifted from the side of the tub and continued to tip backward when force was applied, but it did not tip over. To prevent possible misinterpretation of the ASTM standard's pass/fail criteria, the Commission proposes a requirement that limits the allowable tilt angle of the bath seat during the stability test. This proposed modification would be added to sections 6.1, between sections 7.4.2.2 and 7.4.2.3, and between sections 7.4.2.3 and 7.4.2.4 of the ASTM standard. The Commission proposes that a bath seat capable of tilting 12 degrees or more during testing be considered a failure. This limit was determined after measuring, and allowing for the flexibility of, current products. Staff also considered other ASTM standards such as those for infant bouncer seats and toys. These use a 10 degree table or tilt when testing stability. The Commission is proposing a tilt angle just above that level.

Test solution application (proposed § 1215.2(b)(4)). The Commission recognizes that the outside of a tub may become wet and this may affect the ability of a bath seat's attachment arm to remain stable. Thus, the Commission

proposes that a test solution be applied to all areas where the product may make contact while in use.

Measuring water levels (proposed § 1215.2(b)(5)). When testing the stability of bath seats, Commission staff noted that it can be difficult to obtain accurate water level measurements because the unoccupied bath seat may float when the test platform is flooded. To address this, the Commission proposes to add a clarifying statement: "For the purpose of measuring the water level, the product's seating surface can be temporarily weighed down to prevent the seat from floating."

c. **Leg opening requirement (proposed § 1215.2(b)(8) through (10))**

In recent incident reports, children have fit both legs and their hips through a single leg hole of a bath seat that complies with the current ASTM standard. The torso probe specified in the current ASTM standard used to test the size of the leg openings is not sufficiently analogous to the human infant. This has resulted in a child's torso fitting through a leg hole when the ASTM torso probe does not. Because modeling the pliable features of a child's torso is not practical, the Commission proposes decreasing the size of the current rigid wood torso probe specified in the ASTM standard and

specifying a larger radius on the corners. The proposal would decrease the length of the vertical and horizontal axes of the current probe by approximately 5% and round the corners more resulting in a 1.45" radius rather than the current 1" radius. This proposed change is accomplished through modifications to Figure 4 in the ASTM standard that shows the torso probe. The Commission believes that changes in the test probe would not restrict the utility of the product, but would still allow many possible designs for bath seats, even that would accommodate large children.

An additional proposed change (at proposed § 1215.2(b)(8) and (9)) related to the torso probe concerns the ASTM standard's instruction in section 7.7.1 and 7.7.2 of the of the ASTM standard to insert the test probe "…in the most adverse orientation into each opening." This language is open to interpretation as it may not always be intuitive what 'the most' adverse position is. Therefore, the Commission proposes changing this wording to say that the probe needs to be inserted "in all orientations to determine if any position can create a slip through and/or entrapment hazard."

d. ***Editorial and clarifying changes (proposed § 1215.2(b)(3) and (5))***

Other proposed changes clarify the order of steps to be performed when conducting the stability test. For clarification of testing procedures, the Commission proposes re-ordering the steps specified in the ASTM standard for preparing the test surface and installing the bath seat. This change would clarify that the test platform should be flooded before installing the bath seat.

F. Request for Comments

The issuance of this proposed rule begins a rulemaking proceeding under section 104(b) of the CPSIA to issue a consumer product safety standard for infant bath seats. All interested persons are invited to submit comments on any aspect of the proposed rule. Comments should be submitted in accordance with the instructions in the ADDRESSES section at the beginning of this notice.

G. Effective Date

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. Id. 553(d). To allow time for bath seats to come into compliance the Commission proposes that the standard would become effective 6 months after publication of a final rule.

H. Regulatory Flexibility Act

The Regulatory Flexibility Act ("RFA") generally requires that agencies review proposed rules for their potential economic impact on small entities, including small businesses. 5 U.S.C. 603.

Four firms currently market infant bath seats in the United States: a large domestic manufacturer, a small foreign manufacturer, a small domestic manufacturer, and a small domestic importer. All of these companies' bath seats are expected to require modifications to meet the proposed standard.

Modifying existing bath seats to meet the proposed standard would result in one-time product development costs and possible increased costs of production that could amount to approximately $5 to $10 per bath seat. A price increase associated with these modifications will likely reduce the quantity of bath seats demanded and hence unit sales. Alternatively, it is possible that manufacturers may not be able to (or may choose not to) produce a commercially viable bath seat that meets the proposed standard. For the small domestic manufacturer, the impact of discontinuing baby bath seat production is unlikely to be large since bath seats make up only a small portion of its juvenile products.

Since importers do not manufacture bath seats, the effect of the regulation on them would be felt indirectly, requiring a shift in suppliers rather than the design and production of a different product. The impact on the small domestic importer is expected to be small. The small domestic importer would most likely respond by discontinuing the import of its non-complying bath seat, either replacing the bath seat with a complying product or another juvenile product.

Hence, even if the cost of developing a compliant product proves to be a barrier for individual small firms, the loss of bath seats as a product category is expected to be minor and would likely be mitigated by increased sales of competing products, such as multi-stage infant bathtubs, or entirely different juvenile products.

I. Environmental Considerations

The Commission's regulations provide a categorical exemption for the Commission's rules from any requirement to prepare an environmental assessment or an environmental impact statement as they "have little or no potential for affecting the human environment." 16 CFR 1021.5(c)(2). This proposed rule falls within the categorical exemption.

J. Paperwork Reduction Act

The Commission is not proposing any collections of information in this rulemaking. Therefore, the Paperwork Reduction Act, 44 U.S.C. 3501-3520, does not apply.

List of Subjects in 16 CFR 1215

Consumer protection, Imports, infants and children, Labeling, Law enforcement, and Toys.

Therefore, the Commission proposes to amend Title 16 of the Code of Federal Regulations by adding part 1215 to read as follows:

PART 1215 - SAFETY STANDARD FOR BATH SEATS

Sec.

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

§ 1215.1 Scope.

This part 1215 establishes a consumer product safety standard for bath seats manufactured or imported on or after (insert date 6 months after date of publication in the FEDERAL REGISTER).

§ 1215.2 Requirements for bath seats.

(a) Except as provided in paragraph (b) of this section, each bath seat shall comply with all applicable provisions of ASTM F 1967-08a, Standard Consumer Safety Specification for Infant Bath Seats, approved November 1, 2008. 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 Int'l, _____; www.astm.org. You may inspect a copy at the Office of the Secretary, U.S. Consumer Product Safety Commission, Room 502, 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) The following provisions replace, or are added to, the indicated sections of the ASTM F 1967-08a standard.

(1) Instead of section 3.1.1: "*Bath seat, n* -- an article that is used in a bath tub, sink, or similar bathing enclosure and that provides support, at a minimum, to the front and back of a seated infant during bathing by a caregiver. This does not include products that are

designed or intended to retain water for bathing."

(2) Instead of section 6.1: "*Stability* – For bath seats which provide support for an occupant's back and support for the sides or front of the occupant, or both, the geometry and construction of the product shall not allow for any parts of the product to become separated from it, shall not sustain permanent damage, and shall not allow the product to tip over after being tested in accordance with 7.4. In addition, if any attachment point disengages from (is no longer in contact with) the test platform and then fails to return to its manufacturer's intended use position after being tested in accordance with 7.4, it fails the requirement. This test shall be conducted after the Mechanisms Durability test in 7.1.3. If any time during the application of force, the seat is no longer in the initial 'intended use position' and is tilted at an angle of 12 degrees or more from its initial starting position, it shall be considered a failure."

(3) Instead of section 7.4.1.2: "Prepare the test surface as follows:"

(4) Instead of section 7.4.1.4: "Using a spray bottle containing a 1:25 mixture of test solution (see table Z) to distilled water, immediately before each test run, thoroughly saturate all test platform surfaces above the

water line where the product makes contact and where contact might be expected."

(5) Instead of section 7.4.1.5: "Flood the test platform with clear water that is at an initial temperature of 100 to 105° F (37.8 to 10.6° C) and a depth of 2 in. (51 mm) above the highest point of the occupant seating surface. Install the product according to the manufacturer's instructions onto the test platform specified in 7.4.3. For the purpose of measuring the water level, the product's seating surface can be temporarily weighed down to prevent the seat from floating."

(6) Between section 7.4.2.2 and section 7.4.2.3: "Rigidly install an inclinometer to the test bar above the location where force is to be applied. The weight of the inclinometer and the fastening method shall be less than or equal to 2.2 pounds. The inclinometer shall have a measurement tolerance of less than or equal to 0.5 degrees. Measure and record the pre-test angle of the test bar."

(7) Between section 7.4.2.3 and section 7.4.2.4: "Measure and record the maximum angle of the test bar during the application of the 17.0 lbf load. Calculate the absolute value of the Change in Angle in degrees. Change in Angle = (Angle measured during test) - (Angle measured pre-test)."

(8) Instead of section 7.7.1: "With the bath seat in each of the manufacturer's recommended use position(s), insert the tapered end of the Bath Seat Torso Probe (see Fig. 4a) in all orientations into each opening. The probe should be inserted from the direction of the occupant seating surface. Gradually apply a force of 15 lbf (67 N) in the direction of the major axis of the probe within a period of 5s. Maintain this force for an additional 10s (see Fig. 5)."

(9) Instead of section 7.7.2: "With the bath seat in each of the manufacturer's recommended use position(s), insert the tapered end of the Bath Seat Shoulder Probe (see Fig. 6) in all orientations into each opening. The probe should be inserted from the direction of the occupant seating surface. Gradually apply a force of 15 lbf (67 N) in the direction of the major axis of the probe within a period of 5s. Maintain this force for an additional 10s (see Fig. 7). Release and apply a force of 10 lbf (44 N) to the top 1.0-in. (25-mm) perimeter of the probe in a direction vertically downward toward the seating surface over a period of 5 s. Maintain this force for an additional 10 s (see Fig. 8)."

(10) Instead of Figure 4:

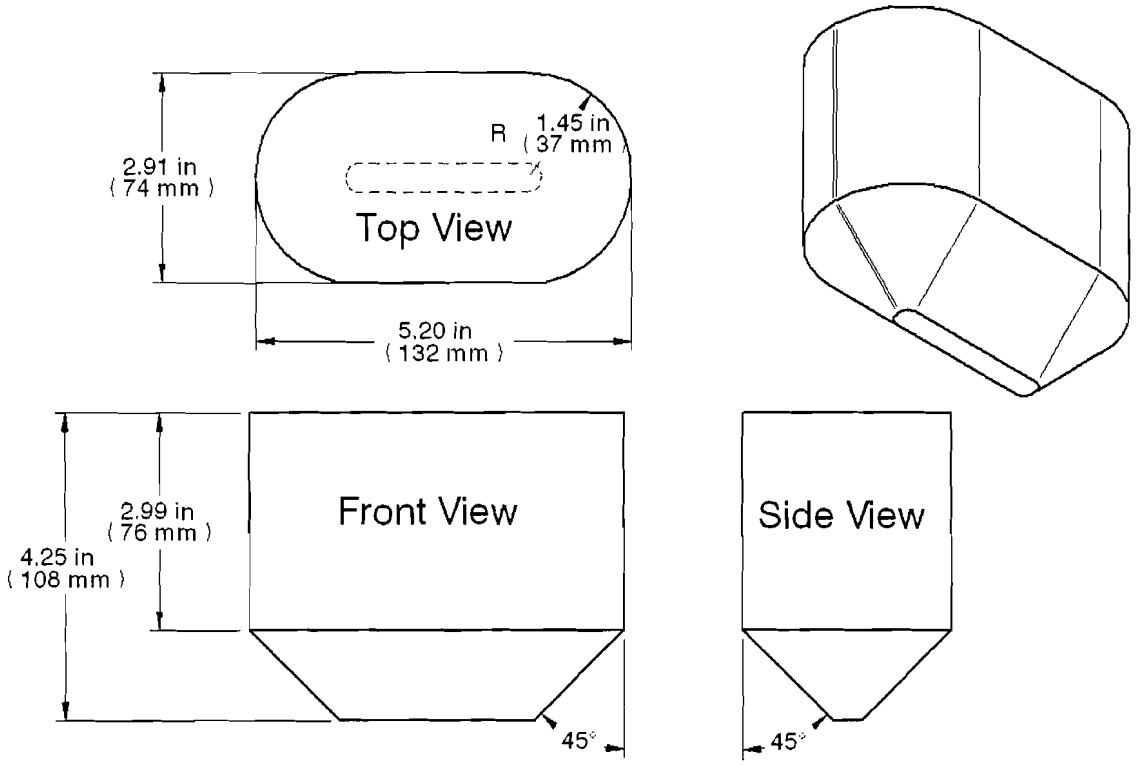

Figure 4a: Modified Bath Seat Torso Probe

Dated: _____

_____
Todd Stevenson, Secretary
U.S. Consumer Product Safety Commission

Draft *Federal Register* Notice
Infant Bath Seats: Termination of Rulemaking

[Billing Code 6355-01-P]
CONSUMER PRODUCT SAFETY COMMISSION

16 CFR Part 1500

Infant Bath Seats: Termination of Rulemaking

AGENCY: Consumer Product Safety Commission.

ACTION: Termination of rulemaking.

SUMMARY: In the FEDERAL REGISTER of December 29, 2003 (68 FR 74878), the Consumer Product Safety Commission ("Commission") published a notice of proposed rulemaking under the Federal Hazardous Substances Act ("FHSA") to reduce the unreasonable risk of injury associated with bath seats. On August 14, 2008, the Consumer Product Safety Improvement Act of 2008 ("CPSIA") was enacted. Section 104(b) of the CPSIA requires the Commission to promulgate consumer product safety standards for durable infant or toddler products, which are to be "substantially the same as" applicable voluntary standards (or more stringent requirements if they would further reduce the risk of injury associated with the product). Elsewhere in this issue of the FEDERAL REGISTER, the Commission is proposing a safety standard for infant bath seats in response to section 104(b) of the CPSIA. The rulemaking initiated under the FHSA is superseded by section 104(b) of the

CPSIA. Accordingly, the Commission has terminated the infant bath seat rulemaking initiated under the FHSA.

FOR FURTHER INFORMATION CONTACT: Patricia Edwards, Project Manager, Directorate for Engineering Sciences, Consumer Product Safety Commission, 4330 East West Highway, Bethesda, MD 20814; telephone (301) 504-7577; pedwards@cpsc.gov .

SUPPLEMENTARY INFORMATION:

A. The Product

Infant bath seats are used in a tub or sink to support a seated infant while he or she is being bathed. They are marketed for use with infants from the time they can sit up unassisted (about 5 months) to the time they begin pulling themselves up to a standing position (about 10 months).

B. Rulemaking Pursuant to the Federal Hazardous Substances Act (FHSA)

In response to a petition from the Consumer Federation of America and others in 2000, in the FEDERAL REGISTER of August 1, 2001, the Commission published an advance notice of proposed rulemaking ("ANPR")(66 FR 39692) to begin a rulemaking proceeding concerning infant bath seats under the Federal Hazardous Substances Act ("FHSA"). On December 29, 2003, the Commission published a notice of proposed rulemaking ("NPR")(68 FR 74878) proposing that bath seats

meet specified requirements for stability, leg openings and labeling.

C. The Consumer Product Safety Improvement Act

The Consumer Product Safety Improvement Act of 2008 ("CPSIA", Pub. Law 110-314) was enacted on August 14, 2008. Section 104(b) of the 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 standard if the Commission concludes that more stringent requirements would further reduce the risk of injury associated with the product. Section 104(b)(2) of the CPSIA directs the Commission to begin rulemaking for two standards by August 14, 2009. Elsewhere in this issue of the FEDERAL REGISTER, the Commission is issuing a proposed rule that would establish a safety standard for bath seats that is substantially the same as a voluntary standard developed by the American Society for Testing and Materials and designated as ASTM F 1967-08a, "Standard Consumer Safety Specification for Infant Bath Seats," with some modifications to strengthen the ASTM standard.

D. Termination of the FHSA Rulemaking

The direction in section 104(b) of the CPSIA to the Commission to begin rulemaking for durable infant or toddler products, including bath seats, supersedes the bath seat rulemaking that the Commission began under the FHSA. Therefore, the Commission is terminating the FHSA bath seat proceeding that began on August 1, 2001 with the issuance of an ANPR.

Dated: _____

_____
Todd Stevenson, Secretary
U.S. Consumer Product Safety Commission