UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

BALLOT VOTE SHEET

DATE: JUN 18 2010

TO: The Commission
Todd A. Stevenson, Secretary

THROUGH: Cheryl A. Falvey, General Counsel CAF
Kenneth R. Hinson, Executive Director KRH

FROM: Philip L. Chao, Assistant General Counsel
Mary A. House, Attorney, OGC MAH

SUBJECT: Petition for Change to the Bunk Bed Standard (Petition CP 10-2 & HP 10-1)

Ballot Vote Due: JUN 24 2010

The Office of the General Counsel has docketed a petition for rulemaking under the Consumer Product Safety Act ("CPSA") (Petition CP 10-2) and the Federal Hazardous Substances Act ("FHSA") (Petition HP 10-1). The petition, submitted by Carol Pollack-Nelson, Ph.D. of Independent Safety Consulting, requests that the Commission initiate a rulemaking to revise existing regulations related to bunk beds, codified at 16 CFR parts 1213, 1500, and 1513 ("Bunk Bed Standard"), to incorporate requirements for head and neck entrapment testing in spaces created by side structures that are provided with a bunk bed, including ladders. The Office of the Secretary is attaching copies of the petition. The Office of the General Counsel has prepared the attached draft *Federal Register* notice should the Commission, in its discretion pursuant to Directive No. 0605.0, decide to request comment on the petition.

Please indicate your vote on the following options.

I. Approve the publication of the draft notice in the *Federal Register*.

_____ _____
(Signature) (Date)

RH 6/18/2010
CLEARED FOR PUBLIC RELEASE
UNDER CPSA 6(b)(1)

THIS DOCUMENT HAS NOT BEEN
REVIEWED OR ACCEPTED BY THE
COMMISSION.

II. Approve the publication of the draft notice in the *Federal Register* with changes. (Please specify.)

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_____ _____

(Signature) (Date)

III. Do not approve the publication of the draft notice in the *Federal Register*.

_____ _____

(Signature) (Date)

IV. Take other action. (Please specify.)

_____

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_____ _____

(Signature) (Date)

Attachment: Draft *Federal Register* notice; Petition Requesting Revision of Bunk Bed Standard to Incorporate Requirements for Head and Neck Entrapment Testing in Spaces Created by Side Structures, Including Ladders.

Carol Pollack-Nelson, Ph.D.
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April 16, 2010

Mr. Todd Stevenson, Director
Office of the Secretary
U.S. Consumer Product Safety Commission
4330 East-West Highway
Bethesda, MD 20814

Re: Petition for Change to the Bunk Bed Standard

Dear Mr. Stevenson:

I am writing this petition to request the Consumer Product Safety Commission (CPSC) initiate rulemaking to revise the Bunk Bed Standard (16 CFR Parts 1213, 1500, and 1513, FR Vol 64, No. 245) such that it incorporates requirements for head and neck entrapment testing in spaces created by side structures that are provided with a bunk bed, including ladders. I am a Human Factors Psychologist, having worked in the field of consumer product safety since 1982. From 1988 through 1993, I was employed by the CPSC in the Human Factors Division. Since 1994, I have been working independently as a human factors consultant. I have published in the field of Human Factors, including papers on product hazards, child supervision, warning label design, and voluntary standards. I have presented my findings at professional and industry conferences.

This past year, I was retained as an expert, in a case involving the fatal neck entrapment and strangulation of a child between a side ladder and the lower mattress platform of a bunk bed. Presently, the bunk bed standard limits head and neck entrapment testing to the end structure. It does not require testing of integral structures positioned on the side of the bed, such as a side-mounted ladder.

Today, the risk of head and neck entrapment in end structures is quite low in complying bunk beds. However, the risk of head and neck entrapment in the space between the ladder and side of the bed persists. Children have died as a result of this omission in the standard and they will continue to die until the mandatory standard is amended to address this issue.

Sample Incident

On November 17, 2008, Ryan Bucheit (age 4 years 10 months) died as a result of neck compression injuries suffered when his head became entrapped between the ladder and mattress of his bunk bed (see IDI 081021HWE7802). Ryan had been placed in the bottom bunk of the bunk bed overnight, with his sister sleeping in the upper bunk.

In the morning, Ryan=s mother entered his room and observed that he was caught by the neck between the vertical post of the ladder and the side of the mattress. His bottom was on the floor. One foot was up like he had his knee up. His back was to the mattress. Ryan was already deceased when his mother found him.

The bunk bed on which Ryan died was a white metal, "twin over full" design. This bunk bed has a metal ladder attached to the sides of the lower and upper bunks. The ladder consists of two connected portions - a vertical portion that attaches to the lower bunk; and a slanted portion that attaches to the upper bunk. When the full mattress is placed on the lower bunk as far from the ladder as it will go, there is a 3-inch U-shaped gap between the side of the mattress and the inside, right-side vertical post of the ladder. There is a also 5-inch space between the upper edge of the mattress and the lower, inner edge of the second ladder rung. The torso probe slides easily through this space. The 9-inch sphere cannot pass through the opening. If this opening was located on the end structure of the bunk bed, it would be a clear violation of the CPSC standard.

When Ryan died, his face apparently passed through the 5-inch space between the mattress and the ladder. Once his head passed (partially) through the opening between the ladder rungs, his neck dropped down in the 3-inch space between the side of the mattress and the vertical post on the ladder. With his chin hooked over the vertical post, the mattress against the back of his head, and his body weight outside the bed, Ryan strangled on the vertical post of the ladder.

Head & Neck Entrapment

Head and neck entrapment incidents have occurred in playgrounds, toy chests, strollers, hospital beds, shopping carts, beds, bed rails, cribs, toddler beds and bunk beds. Over the last several decades, millions of products that pose a head entrapment hazard have been recalled and standards have been published to attempt to prevent future incidents.

There are three primary ways in which children become entrapped in the openings of products B head-first, feet-first, and neck-first. In head-first entrapment, the child inserts his or her head into a fully-bounded opening (e.g., to look through the opening) but is physically and/or cognitively incapable of extricating the head. Young children lack the cognitive skills necessary to figure out how to remove their heads form a space, particularly when they cannot see behind themselves and if they have re-oriented their heads after entering the space. Also, backing the head out of tight spaces is made more difficult if the ears flare out when pulling back through the opening.

In feet-first entrapment, a child enters a fully-bounded opening that is large enough to admit his or her torso, but not large enough for the head to pass through. As a result, the child becomes caught at the neck. Avoiding head entrapment in this scenario can be especially difficult if the opening is elevated as it requires the child to have sufficient upper-body strength to go backwards through the hole.

In neck-first entrapment, a child inserts his or her neck into a partially bounded opening in the top of the product, but cannot extricate the head. Removing the head is particularly difficult if the jaw becomes hooked and/or if the head is pinned.

It is important to note that even with the feet and knees on the ground, children have strangled as a result of their heads becoming entrapped in an opening. For example, strangulation deaths involving old-style toddler climbing gyms resulted after children inserted their heads through the spaces in ladders but were unable to figure out how to pull their heads out of the space. Though their feet were on the ground, the weight of their heads over the ladder rungs caused strangulation when the child was no longer able to hold his head and neck up.

The concern regarding head and neck entrapment hazards was illuminated in the Commission report entitled, Structural Entrapment Hazards to Infants and Children (September 1983). The authors of this report provided an assessment of products involved in structural entrapment incidents involving children less than 10 years of age. This analysis found that many different types of products can and do present an entrapment hazard to children. These products included beds and bedding accessories, children=s products (e.g., toy chests, high chairs, playpens, baby swings, and walkers), household furnishings such as sofa beds and chairs, and public and home playground equipment. Beds and bedding accessories including beds, mattresses, bunk beds, youth beds, bedrails, cribs, bassinets and cradles were among the products cited most frequently. The authors concluded that some of the products are common to every household and A...children may be left alone in a potentially hazardous situation which parents or other caretakers are not aware.@

When entrapment occurs in products intended for the sleeping child, a fatal outcome is likely if the child is unable to extricate him or herself or effectively call for assistance. For example, in the 1983 study, over 80 percent of entrapment incidents involving bedding and bedding accessories (i.e., beds, mattresses, and hospital beds), youth rails, and infant bed products (i.e., cribs, bassinets and cradles) were fatal. Fifteen entrapment incidents involving bunk beds. Reported areas of entrapment included the mattress and guardrail and between the mattress and foot rail. Authors found that some of the incidents occurred when the victim, rolled over in bed while sleeping (p. B4).

The Specific Risk of Head and Neck Entrapment in Bunk Beds

The bunk bed industry has been aware of bunk beds hazards for decades and has developed and revised a number of voluntary standards to address this hazard. The evolution of these voluntary standards was based on incident data demonstrating the risk of head and neck entrapment in bunk beds. In the late 1980s, CPSC staff examined bunk bed-related incidents, injuries and deaths (see Aug 31, 1987 memo from Debbie Tinsworth to Elaine Tyrrell) and concluded that Aentrapment has been the most frequently reported cause of bunk-bed related deaths since 1973...@

The first standard for bunk beds was the AVoluntary Bunk Bed Safety Guideline@, written in 1978 by an Inter-Industry Bed Safety Task Group. This Guideline, which became effective in January 1979, was to be used voluntarily by manufacturers and retailers of bunk beds intended for home use (CPSC Briefing Package, Options for Bunk Beds, Nov 26, 1997). This guideline included requirements for mattress and foundation size and fit, side rail dimensions and attachment, guard rails, ladders, and on-product labels. This 1978 voluntary guideline was incorporated into an American National Standards voluntary standard in 1981 Institute (ANSI Z357.1).

In May 1986, the American Furniture Manufacturers Association (AFMA) published Voluntary Bunk Bed Safety Guidelines, which were developed by an Inter-Industry Bunk Bed Committee (IIBBC). The purpose of the document was A...to establish nationally recognized safety requirements for Bunk Beds and to provide a basis for common understanding as to the safe use of bunk beds among producers, distributors and users.@ These Guidelines provided specifications for the dimensions of bunk bed structures and mattresses, including:

- There shall be no openings in the end structures of the upper bunk that would allow the free passage of a cube of any dimension between 3.5 inches and 8 inches in any orientation when the recommended mattress and foundation are in place. End structure openings of the upper bunk which permit free passage of an 8 inch or larger cube, or a 3.5 inch or smaller cube are acceptable.@ These specifications pertaining to the end structures of the upper bunk shall only apply to that portion of the upper bunk above the support system of the upper bunk.@

- AThere shall be no openings in the rigid bed structure below the lower edge of the guardrail that would permit the free passage of a 3.5 inch cube in any orientation or the lower edge of the guardrail shall not be more than 1 inch from the mattress. These requirements shall be maintained when a lateral force of 33 lbf is applied to the center of the guardrail in an outward direction.@

In July 1988, industry published ARevised Voluntary Bunk Bed Safety Guidelines@ with input from the CPSC. This version expanded specifications for mattress and foundation size and fit: AThe bunk bed must be constructed to allow a conventional-sized mattressY when centered, to fit within : inches from the interior bed structure, so that a space of no greater than 1.5 inches can be created when the conventional-sized mattress is moved in any horizontal direction within the interior bed structure.@

In 1992, ASTM published a Standard Consumer Safety Specification for Bunk Beds, F1427-92. The standard specified spacing limitations relating to the mattress and foundation size and fit, guard rails, and ladders. Further, the standard stated that A[t]here shall be no openings in the rigid end structures of the upper bunk that will permit the free passage of the wedge block....@ As was the case with the guidelines that preceded the standard, the requirement only applied to bed end structures above the foundation of the upper bunk.

In a 2/13/96 meeting with the ASTM Subcommittee for Bunk Beds (F15.30), renowned CPSC engineer, John Preston, stated that after reviewing CPSC data involving entrapment incidents in bunk

beds, AYit appeared that life threatening incidents generally occur in openings at the level of the mattress sleeping surface or close to that surface@ (p. 1). Subsequently, the Bunk Bed standard was revised in 1996 to include requirements for entrapment testing in lower bunk end structures. The revised standard stated: AWhen tested in accordance with 5.6.2, there shall be no openings in the end structures of the lower bunk that will permit free passage of the wedge block shown in Fig 1, unless they are large enough to permit the free passage of a 9 inches diameter rigid sphere.@

The Bunk Bed standard has been revised a number of times over the years. The most recent version was published in 2007.

In addition to the voluntary standard, the CPSC published a mandatory standard for bunk beds on December 22, 1999 (16 CFR Parts 1213, 1500, and 1513, FR Vol 64, No. 245). This standard is similar to the ASTM voluntary standard with some notable exceptions, including application of probes to assess head entrapment (the 3.5 inch torso and 9 inch head probe) to openings in end structures from the level of the lower bunk foundation support to the level of the upper bunk foundation support. In addition, any portion of the opening in the bed=s end structure that is required to be probed by the torso probe and that allows free passage of a 9 inch sphere must satisfy neck entrapment provisions. This mandatory standard does not require testing for head and neck entrapment in spaces created by side structures, such as ladders, that are provided with the bunk bed.

Methods for Assessing Head and Neck Entrapment Potential

Entrapment can occur anytime there is a gap or juncture between two structures sufficient to allow a body part to become caught. Methods for determining if a gap presents a risk of head entrapment were developed in the 1980s at the time when the CPSC began studying the size and shape of the head and neck in relation to spaces causing entrapment.

In 1986, Lawrence Schneider published an article entitled, Protecting Infants and Toddlers from Head Entrapment Injuries in the UMTRI Research Review (May-Jun 1986). This article described a study of anthropometry data that was conducted using 300 children from birth through four years of age. The results of this study are contained in the reference text, *Size and Shape of the Head and Neck from Birth to Four Years,* (1986). Based on CPSC fatality reports and published articles in the medical literature, the author identified 12 head entrapment hazards. Many of the identified hazard patterns involved gaps in the structures of cribs and beds.

In July 1991, Shelley Deppa published a paper entitled, AProcedure to Evaluate Openings in Children=s Products for Head Entrapment Hazards@ (Journal of Testing and Evaluation, 1991). In this article, she analyzed strangulation fatality data using applied principles of anthropometry, childhood development, perception, behavior and biomechanics. From this analysis, Ms. Deppa developed a standard procedure for evaluating product openings through the use of templates and probes.

Mandatory and voluntary standards for bunk beds specify methods for assessing head and neck entrapment potential using test probes and templates. To test for head entrapment, openings in the end

structure that admit a 3.5 inch test probe must also freely pass a 9" sphere. To protect against neck-first entrapment in a bed=s end structures, a neck template is used that is similar to that developed to address neck entrapment in playground equipment and specified in F1487-98, AStandard Specification for Playground Equipment for Public Use@. Any portion of an opening in the bed=s end structure below the foundation of the upper bunk required to be probed by torso probe and that allows for free passage of 9" diameter sphere, must be tested for neck entrapment. The neck entrapment test requirement (and the probe used to assess the risk) was added to the standard in response to a specific incident in which a child's neck became caught in a cut-out design in an end panel of a bunk bed.

Just as it is important to test for head and neck entrapment potential in bunk bed end structures, it is also important and feasible to test for entrapment potential in bunk bed side structures (i.e., spaces created where a side-mounted ladder intersects with the lower bunk). To become entrapped in a side structure opening: 1) the child's face must fit in the space between the upper edge of the mattress and the lower edge of the rung that is positioned just above the mattress, and (2) the child=s must neck fit in the gap between the side of the mattress and the vertical post of the ladder; and (3) the child=s head (from under the chin to the top of the head) must fit between the two vertical posts of the ladder.

If the child's head is able to pass (partially) through the space created by a horizontal ladder rung and the top of the mattress, the neck will drop into the gap between the vertical ladder post and the side of the mattress. This is the space that entraps the neck. Further contributing to the hazard pattern is the fact that the child's chin hooks over the vertical post of the ladder and is pinned at the back of the head by the mattress. The weight of the body outside of the bed pulls the head and neck against the vertical ladder post. All of these factors together contribute to the neck entrapment and resulting strangulation.

Assessing neck entrapment potential in the space between the side of the mattress and the vertical ladder post requires use of a neck probe that simulates the dimensions of the smallest user's neck. In fact, it is the depth of the neck that is the critical measurement since a child who is entrapped in this space is typically positioned sideways (with the chin hooked over the vertical post of the ladder and the back of the head pinned by the side of the mattress). Any gap that is large enough to admit the (compressed or non-compressed) neck depth of the smallest user and that has a depth greater than half the depth of a child's neck can entrap the neck and prevent it from easily rolling out of the space.

According to anthropometry data collected on U.S. children, the neck depth (measured front to back on the neck) of the 5th percentile 25-30 month-old child measures 2.2 inches or 5.6 cm (Schneider, Lehman, Pflug and Owings, 1986).[1] Given the compressibility of the neck, 25% is deducted to determine the minimum neck breadth measurement that can entrap a child's neck. Thus, spaces greater than 1.9 inches (4.8 cm) can pose a risk of neck entrapment.

[1] Bunk bed standards assume the youngest user to be two years of age (i.e., probes used to assess head entrapment are based on the smallest two-year-old). It should be noted that the age when children transition out of a crib depends on a number of factors and may be as young as a year (e.g., if they show signs of trying to get out of the crib or if the crib is needed for a subsequent sibling). In such cases, the

lower bunk is used akin to a toddler bed. The voluntary standard for toddler beds assumes the youngest user to be 15 months (F1821-06).

Injury Data

The following incidents involve entrapment between a side-positioned ladder and the bunk bed:

1. September 4, 1983 – A two-year-old male received minor contusions and abrasions to the underside of his chin when he slipped off the bottom bunk and entrapped his head between the bunk ladder and bottom bunk. The ladder is positioned at the side of the bed and mattress. The subject product had been purchased new by the victim's family and they had not previously had problems with the bed. The child had been put to bed for the evening.

A few hours later, his parents heard crying from the child's room. When they went to check on the child, they found him w/his chin resting on the bottom rung of the bunk bed ladder with his neck and head between the bottom of the ladder and the side of the bottom bunk bed. . "According to his mother, it didn't appear that the child was able to get himself out from between the ladder and the side of the bed" (p. 2).

A picture re-enacting the incident shows that the back of child's head was against the lower bunk mattress with his face through the space between the 1st and 2nd rungs (from the bottom) of the ladder (see photo #3, page 8). His body was somewhat on an angle with his feet on the floor. The spacing between the bottom step of the ladder and the bottom bunk, where the child was entrapped, measured 2 1/8" without being forced.

The mother sticks a bulky floor pillow under the ladder in order to push it in and secure it more closely to the bottom bunk. When the child does infrequently sleep on the bunk, the bed is made up so the child's head is at the opposite end from the ladder. [831003CCC1003]

2.Jan 5, 1998 – *(fatal)* - A developmentally disabled 22-month-old male was entrapped with his neck between the ladder rung and the mattress top of the lower bunk in which he had been sleeping. His mother found him trapped inside the bunk bed ladder in a prone position with his neck resting on the lower rung. The coroner determined that he died from asphyxia due to neck compression. The bunk bed was a white enamel tube metal construction bunk bed with a full mattress on the bottom bunk and a twin mattress up top.

"Extending from the top of the incident bunk bed, at an angle is a 4-rung metal ladder. The ladder's 2nd rung is about level with the top of the mattress when the lower bunk is not in use. However, under compression such as the weight of the victim space is generated between the mattress top and the ladder rung. It is in this space the victim reportedly entrapped his head and neck." [980112CNN0130]

3. January 25, 2000 – A 6-year-old boy fell out of the lower bunk and his head became entrapped between the mattress and wooden ladder on a bunk bed. He was sleeping on the lower bunk and fell out of bed. His

mother heard him yelling in a half-asleep condition. She found him with his face pointing upward towards the ceiling and his feet and legs were on the floor. His mother removed him and he did not suffer serious injury.

"The entrapment space is wider than three and a half inches and might be considered a potential hazard." The entrapment occurred in a U-shaped space between the inside vertical side of ladder on the right, the mattress on the left, and the wood spacer on the bottom. The wood spacer measures 3 15/16". The space between the edge of the bottom bunk mattress and the inside of the (vertical) ladder measures approximately 4.5 inches.

The parents still think there is a potential hazard with the space between the mattress and the ladder. They have the ladder placed at the foot of the bunk bed and not at the head of the bed where it was positioned at the time of the incident. "Toddlers in the home could also find this space between the ladder and the bottom sideboard the only access area to the lower bunk bed. Potential injury to an arm, leg, neck, or head could exist" (p.2).

"Review of the Consumer Product Safety Review Winter 2000, VOL. 4, No. 3, page 6 indicates the Model #... bed would not pass the new CPSC Bunk Bed Standard due to go into effect 6/19/00. The new standard requires openings on the lower bunk end structure to be small enough to prevent entry of the child's head or torso, or large enough to permit free passage of both head and torso. On the model... the opening between the ladder and mattress on the lower bed, even though it is no [sic] an end structure, might be a potential entrapment area" (p. 3). [000224CCC2320]

4. May 23, 2000 – A 2 year-old female, playing on and about the bunk bed in her bedroom, twice became "stuck" in the top opening of the bunk bed ladder. Both times she was extricated by her father without injury. The opening at issue is the top opening of the ladder which measures approximately 4" (vertically) x 12" wide. Additionally, the opening is angled because of the slanted ladder position, with the top of the opening approximately 1" from the top of the bed frame and the bottom of the opening approximately 6" from the bottom of the top bed frame.

Photographs re-enacting the first incident show that the victim appeared to have gone torso-first (stomach up) through the space between the 1st and second ladder rungs from the top. In the second incident, the victim passed through the same space in the stomach-down position, getting caught at the neck. The spacing between ladder rungs is much greater than 4 inches (cannot determine actual distance from one rung to another) when not attached to the bunk bed. However, when placed against the side of the bunk bed, the mattress support for the upper bunk intersects this opening, reducing it to 4" deep. [000525HCC0705]

5. January 14, 2003 – *(fatal)* -A 2 year-old female became suspended by her neck after being wedged between the inside top rung of the ladder and the bed on a loft-style bed. The child died of her injuries. The child was found wedged between the wood frame and the top inside rung of the ladder with her head facing out, away from the bed. Her neck was suspended in the top rung and her arms were straight up in

the air. The distance between the side of the wood bed frame and the top rung of the ladder measures just under 3.5 inches. [030115CCN0277]

6. April 1, 2003 – 18-month-old daughter's head became entrapped in a 3 ¼" opening between the mattress and a bunk bed ladder while playing on the lower bunk. The mother freed her daughter by pushing down on the mattress to release her head. She was uninjured. [050815CWE500]

7. October 17, 2008 – A 4 year-old male died as a result of asphyxia by neck compression when his head b/me wedged between the ladder and mattress of his bunk bed. The victim had been placed overnight on the bottom bunk of a bunk bed.
[081021HWE7802]

Revising the Mandatory Standard

When the CPSC enacted a mandatory standard for Bunk Beds, it did so to address head and neck entrapment hazard patterns that were not already addressed in the ASTM F1427-96 voluntary standard (see Final Rule FR Vol. 64, No. 245, 12/22/99). Initially, the CPSC voted to publish a notice of proposed rulemaking (NPR) that addressed head entrapment (only) in bunk bed end structures. However, the agency subsequently determined that one fatality had occurred on a bunk bed end structure as a result of *neck* entrapment in the lower bunk and that in this case, the bunk bed involved would have met the proposed standard. To address the potential for the type of neck entrapment that occurred in that one incident, the Commission developed a new template and test procedure and incorporated these additional requirements into the standard in order "...to adequately address fatalities due to entrapment of children's necks in the end structures of bunk beds."

The Commission's incorporation of a neck entrapment testing procedure into the mandatory standard based on a single incident is laudable and has surely prevented fatalities from occurring in this manner. However, neck entrapment in the space between the ladder and the side of the lower bunk has never been addressed. Neck entrapment incidents in side structures have been on record with the CPSC for decades. While such incidents do not occur often, they nonetheless continue to occur.

Children who become entrapped by the neck between the vertical post of a bunk bed ladder and the mattress are every bit as vulnerable as children who become entrapped by the neck in a bed end structure.

The Safety Hierarchy for Hazard Prevention dictates a methodology for addressing consumer product hazards. According to this hierarchy, inherent hazards should be designed out of a product or guarded against whenever possible. Head and neck entrapment should not occur on any bed structure that is provided with the product. Methods for assessing head and neck entrapment already exist. Methods for preventing head and neck entrapment are already well-known to industry.

As the death of Ryan Bucheit and other children exemplify, the mandatory bunk bed standard fails to address head entrapment in all bunk bed structures and as a result, fails to adequately protect children from head and neck entrapment. Through this petition, I request the Commission immediately begin rulemaking to revise the Bunk Bed standard to protect against head and neck entrapment in any integral structure provided with the bunk bed, including spaces created by the ladder at the side of the lower bunk.

I appreciate the Commission's consideration of this request. I am available to discuss this petition at your convenience.

Respectfully submitted,

Carol Pollack-Nelson, Ph.D.

References

Deppa, S.W. (1991). Procedure to Evaluate Openings in Children's Products for Head Entrapment Hazards, *Journal of Testing and Evaluation*, Vol. 19, No. 4, July 1991, pp. 263-279.

Miles, R., Rutherford, G., and Coonley, R. (1983). *Structural Entrapment Hazards to Infants and Children,* Unpublished Report, U.S. Consumer Product Safety Commission, Washington, D.C.

Schneider, LW (1986). *Protecting Infants and Toddlers from Head-Entrapment Injuries.* The UMTRI Research Review, Vol. 16, No. 6, University of Michigan Transportation Research Institute, Ann Arbor, MI.

Schneider, LW, Lehman, RJ, Pflug, MA and Owings, CL (1986). Size and Shape of the Head and Neck from Birth to Four Years, The University of Michigan Transportation Research Institute's Final report to the CPSC, Washington, D.C.

Snyder, RG, Schneider, LW, Owings, CL, Reynolds, HM, Golomb, DH & Schork, MA (1977). *Anthropometry of infants, children & youths to age 18 for product safety design.* Report no. UM-HSRI-77-17, Consumer Product Safety Commission, Washington, D.C.

Billing Code 6355-01-P

CONSUMER PRODUCT SAFETY COMMISSION

Petition Requesting Revision of Bunk Bed Standard to Incorporate Requirements for Head and Neck Entrapment Testing in Spaces Created by Side Structures, Including Ladders (Docket No.CPSC-___)

AGENCY: Consumer Product Safety Commission.

ACTION: Notice.

SUMMARY: The Consumer Product Safety Commission ("Commission," "CPSC," or "we") received a petition requesting the Commission to initiate a rulemaking to revise the Commission's regulations regarding bunk beds, codified under both the Consumer Product Safety Act ("CPSA") and the Federal Hazardous Substances Act ("FHSA") at 16 CFR 1213, 1500, and 1513 (the "Bunk Bed Standard"), to incorporate requirements for head and neck entrapment testing in spaces created by side structures that are provided with a bunk bed, including ladders. The Commission invites written comments concerning this petition to initiate a rulemaking to revise the Bunk Bed Standard.

DATES: Comments on the petition must be received by [**insert date 60 days after publication in the Federal Register**].

ADDRESSES: You may submit comments, identified by Docket No. CPSC-____, by any of the following methods:

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.

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 820, 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 notice. 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: Rocky Hammond, Office of the Secretary, Consumer Product Safety Commission, 4330 East West Highway, Bethesda, Maryland, 20814; telephone (301) 504-6833, e-mail rhammond@cpsc.gov.

SUPPLEMENTARY INFORMATION:

The Commission received a petition from Carol Pollack-Nelson, Ph.D. of Independent Safety Consulting ("Petitioner") requesting that the Commission initiate a rulemaking to revise the regulations related to bunk beds, codified at 16 CFR parts 1213, 1500, and 1513 ("Bunk Bed Standard"), to incorporate requirements for head and neck entrapment testing in spaces created by side structures that are provided with a bunk bed, including ladders. The Commission regulates bunk beds under both the Federal Hazardous Substances Act ("FHSA") (16 CFR 1500 and 1513), for bunk beds intended for use by children, and the Consumer Product Safety Act ("CPSA") (16 CFR 1213), for bunk beds not specifically intended for children. The regulations under both statutes are virtually identical.

Petitioner acknowledges that the risk of injury caused by head and neck entrapment in the end structures

of bunk beds is quite low in compliant products because of the Bunk Bed Standard, but argues that same risk of injury continues to exist with regard to the space between a ladder and the side of the bed, which the standard does not address. The petition identifies 3 fatalities, and 4 other incidents of children whose head and/or neck were entrapped between the side of the bed and a bunk bed ladder. The hazard purportedly arises from the potential that a child's neck may become entrapped if the "child's head is able to pass (partially) through the space created by a horizontal ladder rung and the top of the mattress, [and] the neck … drop[s] into the gap between the vertical ladder post and the side of the mattress….Further contributing to the hazard pattern is the fact that the child's chin hooks over the vertical post of the ladder and is pinned at the back of the head by the mattress. The weight of the body outside the bed pulls the head and neck against the vertical ladder post. All of these factors together contribute to the neck entrapment and resulting strangulation." Petitioner states that assessing the entrapment hazard requires use of a neck probe that simulates the dimensions of the smallest user's neck. Using anthropometry data collected on children in the

United States, the Petitioner argues that any space greater than 1.9 in (4.8 cm) can pose a risk of neck entrapment in bunk bed side structures.

Petitioner concludes that, while the hazard of head and neck entrapment on bunk beds and the methods of testing for a potential hazard are known to the industry, and data on injuries involving side structures have been on record with the CPSC for decades, the hazard of side structure entrapments on bunk beds has not been addressed in the Bunk Bed Standard. Petitioner argues that deaths have occurred and will continue to occur unless the Bunk Bed Standard is revised to include testing for head and neck entrapment in spaces created by side structures.

Interested parties may obtain a copy of the petition by writing or calling the Office of the Secretary, Consumer Product Safety Commission, 4330 East West Highway, Bethesda, MD 20814; telephone (301) 504-6833. The petition is also available on the CPSC web site at http://www.cpsc.gov.

Dated:

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Todd A. Stevenson, Secretary
Consumer Product Safety Commission