



UNITED STATES  
CONSUMER PRODUCT SAFETY COMMISSION  
WASHINGTON, DC 20207

DATE: APR 13 2004

TO: The Commission  
Todd A. Stevenson, Secretary

THRU: John Gibson Mullan, General Counsel *JGM*  
Lowell F. Martin, Assistant General Counsel *LFM*

FROM: Patricia M. Pollitzer, Attorney

SUBJECT: Petition CP 03-1/HP 03-1 requesting a standard for bunk bed corner post extensions and finials

Attached is a briefing package from the staff concerning a petition submitted by the Danny Foundation requesting that the Commission issue standards that would address the hazard of children hanging from bunk bed corner post extensions and finials. The staff recommends that the Commission defer decision on the petition (Option II.).

Please indicate your vote on the following options.

I. Grant Petition CP 03-1/HP 03-1.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

II. Defer decision on Petition CP 03-1/HP 03-1.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

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III. Deny Petition CP 03-1/HP 03-1.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

IV. Take other action (please specify):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Attachment: Staff Briefing package, *Bunk Bed Corner Post Extensions and Finials*, Petition CP 03-1/HP 03-1, March 2004.

**BRIEFING PACKAGE**

**BUNK BED CORNER POST EXTENSIONS AND FINIALS**

**PETITION CP 03-1/HP 03-1**

**March 2004**

For Further Information Contact:

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## EXECUTIVE SUMMARY

On September 26, 2002, the Danny Foundation petitioned the Commission to “investigate ... hanging deaths resulting from bunk bed corner posts (or finials) and determine that bunk bed corner posts pose a substantial risk of injury and/or death to children.” While the petition discusses hanging incidents associated with corner posts and finials, staff verified with the petitioner that they are referring to corner post extensions rather than corner posts. The Danny Foundation is concerned that bunk bed corner post extensions and finials pose a hazard because they can catch a child’s clothing, accessory, or bedding as the child descends from the top bed, resulting in a hanging injury or death.

Bunk beds are defined as any bed for which the bottom of any foundation is more than 30 inches off the floor. Thus, bunk beds could include stacked beds, loft beds, and raised beds with play features. Approximately 500,000 bunk beds are sold annually for household use in the U.S. and the average expected life of a bunk bed is 13 to 17 years. Taking the number of sales and the average expected life into account, there are around eight million bunk beds in use at any given time.

Staff is aware of 47 hanging incidents involving bunk beds – 39 fatalities and 8 injuries – from January 1, 1990 through December 31, 2002 involving children from 11 months old to 16 years old. Of the 47, staff has identified four hanging deaths that are specifically noted as being associated with bunk bed corner post extensions or finials, six incidents noted as involving corner posts (unknown if an extension or finial was involved), and 24 incidents involving an unknown portion of the bunk bed. Thus, staff is aware of a minimum of four corner post extension hanging incidents with the probability that a portion of an additional 30 incidents also involved corner post extensions or finials.<sup>1</sup>

There are two primary means by which a child can become hung on a bunk bed. An item around the child’s neck could become caught or snagged on a part of the bunk bed, or the child could become entangled in something he or someone else deliberately attached to the bunk bed. The incident data support these means of hanging. Eliminating or limiting the height of corner post extensions and finials could reduce or eliminate hanging incidents in which the child becomes caught or snagged on the extension or finial or where a hanging results from someone tying or looping an item to the extension or finial.

Staff identified other potential hanging hazards in addition to corner post extensions and finials. Other catchpoints include vertical protrusions on ladders and tight spaces between bunk bed components. Additionally, children and adults can tie, hook, or

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<sup>1</sup> Since the preparation of staff memoranda for this briefing package, CPSC has learned of an additional four fatal bunk bed hanging incidents that occurred between 2001 and 2003. One of these incidents involved a vertical extension at the junction of the ladder and guardrail. The specific areas of the beds involved in the remaining three incidents are unknown. Including these data, staff is aware of a minimum of four corner post extension hanging incidents with the probability that a portion of an additional 33 incidents also involved corner post extensions.

loop items around parts of the bunk bed other than extensions and finials, presenting the potential for hanging. CPSC has incident data involving these scenarios.

CPSC's regulation and the ASTM voluntary standard for bunk beds incorporate provisions to eliminate hanging by entrapment, but neither addresses the height of corner post extensions and finials or other catchpoints. The voluntary standard subcommittee for bunk beds has committed to developing a standard for bunk bed corner post extensions and finials and to developing requirements to address other catchpoints. Task groups have been established to review data, develop interim warning label language, and develop performance criteria. Development of draft warning label language that addresses the hanging hazard was originally expected to be completed by December 2003. Work on the label took place in February 2004 and the draft language is scheduled for an ASTM ballot in April 2004. The development of design or performance criteria for bunk bed corner post extensions and finials was originally scheduled to be completed in 2004. The 2004 completion date is no longer expected and no completion date has been set.

The information that is available illustrates the presence of the potential hanging hazard associated with bunk bed corner post extensions and finials and the severity of the hazard. In addition, preliminary estimates suggest that if a standard were developed that fully eliminated the risk of death associated with the four known fatalities from corner post extensions or finials, and if the increased cost associated with the change was not more than a few dollars per bunk bed, the costs would remain in line with the benefits. If some of the incidents with unknown scenarios involved corner post extensions or finials, the potential benefits would increase.

The staff recommends that the Commission defer a decision on the petition. If the Commission votes to defer, during the time of deferral staff will continue to gather information about hanging incidents with unknown circumstances and work with the bunk bed subcommittee to develop requirements to address corner post extensions and finials as well as other potential hanging hazards associated with bunk beds. Staff will keep the Commission informed about progress on the voluntary standard.



UNITED STATES  
CONSUMER PRODUCT SAFETY COMMISSION  
WASHINGTON, DC 20207

Memorandum

Date: APR 13 2004

TO : The Commission  
Todd Stevenson, Secretary

THROUGH: John Gibson Mullan, General Counsel *JGM*  
Patricia Semple, Executive Director

FROM : Jacqueline Elder, Assistant Executive Director,  
Office of Hazard Identification and Reduction  
Debra Sweet, Project Manager, *ds*  
Division of Hazard Analysis, Directorate for Epidemiology

SUBJECT : Briefing Memorandum for Petition CP 03-1/HP 03-1

This briefing memorandum was prepared in response to Petition CP 03-1/HP 03-1. The memorandum discusses product and market information about bunk beds, expected behavior of children in relation to bunk beds and corner post extensions or finials, hanging deaths and injuries associated with bunk bed corner post extensions and finials, and the relevant current standards.

BACKGROUND

Petition

On September 26, 2002, the Danny Foundation petitioned the Commission to regulate bunk bed corner posts and finials. The petition requests that the Commission "investigate ... hanging deaths resulting from bunk bed corner posts (or finials) and determine that bunk bed corner posts pose a substantial risk of injury and/or death to children." The Danny Foundation further requests that the Commission issue a mandatory standard banning finials or corner posts from bunk beds (a copy of the petition is included in Tab A).

For clarification, it is necessary to distinguish between corner posts, corner post extensions, and finials. A corner post is a functional support column of the bunk bed, extending from the floor to the top of the upper bed's guardrail or end panel. The height above which the corner post no longer provides support or a means of attachment (of the guardrail or end panel) is called the corner post extension. A finial is a decorative crowning ornament that can be attached to either the corner post or corner post extension. Finials and corner post *extensions* are the parts of the bunk bed that present the stated hazard, therefore staff confirmed with the petitioner that the request is for a ban of finials and corner post extensions rather than corner posts. This memorandum will henceforth refer to the request of the petitioner as a ban of corner post extensions and finials.

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The Danny Foundation is concerned that bunk bed corner post extensions and finials pose a hazard because they can catch a child's clothing, accessory, or bedding as the child descends from the top bed, resulting in a hanging injury or death. The Danny Foundation petitioned the agency on a similar matter associated with cribs in August 1989 requesting the Commission ban cribs with any corner posts extending above the end panel. The petitioner stated that the voluntary standard for crib corner post extensions, as it existed in 1989, was inadequate. In November 1990, a revised voluntary standard for crib corner post extensions was approved that reduced the acceptable height of a crib corner post extension. The Commission denied the petition in April 1991 in favor of the revised voluntary standard.

The petitioner cites 14 deaths to children in bunk bed hanging incidents associated with finials from 1993 to May 2002. Also included in the petition is a list of 20 incidents of hanging deaths and injuries from "corner posts" from 1990 to May 2002. A detailed review of the petitioner's data is in Tab D. Staff reproduced the petitioner's search criteria in its review of incident data.

### **PRODUCT INFORMATION (Tab C)**

CPSC's regulations at 16 CFR Parts 1213 and 1513 define a bunk bed as any bed for which the bottom of any foundation is more than 30 inches off the floor. Bunk beds are usually constructed of two twin beds stacked one on top of the other. Some bunk beds have a full-sized bed or convertible futon bed for the lower bed. Because the definition of a bunk bed is based on height rather than the number of beds in the structure, any bed elevated 30 inches above the ground is considered a bunk bed. Thus bunk beds include loft beds or beds over 30 inches that are marketed as play structures with slides descending from the bed or tents attached to the frame of the bed.

Bunk beds are generally constructed of wood or metal. Wooden bunk beds account for approximately 60 percent of bunk beds in use. The wooden bunk beds are the types most likely to have corner post extensions; however, not all wooden bunk beds are designed with corner post extensions. Metal bunk beds account for most of the remaining bunk beds in use. Most metal bunk beds have curved headboards and footboards, with no corner post extensions or finials, although some metal bunk beds do have them. There are beds made of alternative materials such as resins or composite materials, but these bunk beds account for only a small fraction of the market. Staff cannot determine the specific percentage of products manufactured with corner post extensions or finials. Pictures of wooden and metal bunk beds can be found in Tab C.

### **MARKET INFORMATION (Tab C)**

The American Furniture Manufacturers Association (AFMA) is a trade association representing manufacturers of bunk beds. According to the AFMA, 40 firms, which are either AFMA members or members of the standing voluntary standard committee for bunk beds, account for 75 to 80 percent of bunk bed sales. CPSC staff is aware of a total of 170 firms, U.S. and foreign, that supplied bunk beds to the U.S. market in the recent past. These firms are believed to account for virtually all national sales of bunk beds.

The retail price of a bunk bed ranges from around \$200 to more than \$700. The average retail price of a bunk bed is about \$300. Approximately 500,000 bunk beds are sold annually for household use in the United States. This figure has remained relatively stable over time. The average expected life of a bunk bed is 13 to 17 years. Taking the number of sales and the average expected life into account, there are around eight million bunk beds in use at any given time.

#### INCIDENT DATA (Tab D)

From January 1, 1990 through December 31, 2002, the Commission has reports of 47 hanging incidents involving bunk beds – 39 fatalities and 8 injuries. The victims ranged in age from 11 months to 16 years. Nine of the bunk beds involved were made of metal, four were made of wood, and the material of the remaining 34 beds is unknown.

Table 1 breaks down the 47 incidents according to the part of the bunk bed from which the child became hung and whether the child was caught or became entangled in an item intentionally attached to the bunk bed.

**Table 1. Hanging Incidents Involving Bunk Beds (1990-2002)**

Table 1: Hanging Incidents Involving Bunk Beds (1990-2002)						
How the Hanging Device was Attached to Bed	Part of Bed on Which Child Became Hung					
		Corner Post Assembly		Other Part of Bed	Unknown	Total
		Extension or Finial	Corner Post			
	Caught on Bed	1	0	4	1	6
	Intentionally Attached to Bed	2	2	5	8	17
	Unknown	1	4	4	15	24
Total	4	6	13	24	47	

#### Incidents Involving Corner Post Extensions or Finials

In four of the 47 incidents, the reports indicate that the child was hung from the corner post extension or finial of the bunk bed. All four incidents resulted in death. Because these incidents involve the specific area of the bunk bed that is of concern to the petitioner, each case is detailed below.

##### Object Was Caught on the Corner Post Extension or Finial

- A 2-year-old male died after hanging on the bunk bed corner post extension. The boy climbed onto the top bed and picked up a water cup from a shelf above the bed. The water cup had a strap attached to it and the boy put the strap around his neck. As he descended the

bed, the strap caught on the wooden corner post extension and the child was hung. The corner post extension protruded vertically six inches from the side guardrail of the bed.

#### Object Was Intentionally Attached to Corner Post Extension or Finial

- A 7-year-old female died when she looped a belt over the bunk bed corner post extension, put it around her neck and was swinging back and forth. Information about the bunk bed and the height of the corner post extension is unknown.
- A 4-year-old boy died while playing on his sister's bunk bed. The victim's sister hung her backpack-type purse from the wooden corner post extension of the bunk bed. The victim, who liked playing on the ladder of the bunk bed, became entangled in one of the straps on the purse. He was found with one strap around his neck and the other strap hooked around the corner post extension. The corner post extension measured approximately three inches in height.

#### Unknown Manner by Which Product was Attached

- A 5-year-old female was found dead in her bedroom with a bathrobe belt around her neck and around the corner post extension of the bed. The bathrobe belt was in a continuous loop, tied together at both ends.

Eliminating or limiting the height of the corner post extensions and finials would likely address incidents such as these four.

### **Incidents Involving Corner Posts**

Six children died from becoming hung on what was reported to be the corner post of the bed, but it is unclear from the incident reports whether the area of the corner post assembly involved was the supportive section or the extension. In two of these six incidents, the child intentionally attached an item to the bunk bed and became entangled in the item. In the remaining four incidents involving the corner post, it is unclear whether the child became caught by something around his or her neck or the child became entangled in an item intentionally attached to the corner post. It is possible that some or all six of these incidents involved a corner post extension or finial of the bunk bed, but again, the details in the reports do not allow for this conclusion to be made.

### **Additional Data**

In 13 incidents, children were hung from a part of the bunk beds other than the corner post or corner post extension. These children were either caught on the beds by something around their necks or became entangled in an item intentionally attached to the bunk bed. Scenarios included a boy getting caught by his shirt on the bunk bed ladder, a boy becoming entangled in a stuffed animal display hung from the footboard of the top bunk, and a child tying a bathrobe belt around his neck and around a guardrail, among others. Nine of these children died as a result of the hanging and the other four children were injured. These incidents did not involve bunk bed corner post extensions or finials.

There were 24 incidents involving children who were hung on the bunk bed, but the part of the bunk bed is unknown. As with the other scenarios, the children were either caught by something they were wearing around their necks or became entangled in an item intentionally attached to the bunk bed. Twenty of the children were fatally hung and four children were injured as a result of the incident. It is possible that a portion of these 24 incidents involved the corner post extension or finial of the bunk bed.

### **Data Summary**

In summary, staff identified four incidents (all fatalities) that are specifically noted as involving corner post extensions or finials, six incidents that involved a corner post, and 24 incidents that involved an unknown area of the bunk bed. Thus, staff is aware of a minimum of four hanging incidents involving corner post extensions with the probability that a portion of an additional 30 incidents also involved the corner post extension or finial.<sup>1</sup>

Review of the incident data shows other potential hanging hazards in addition to corner post extensions and finials. These hazards involve catchpoints on other parts of the bed as well as areas on which a child can tie, loop or hook items.

### **HUMAN FACTORS ASSESSMENT (Tab E)**

As a child climbs on or off of a bunk bed, an item that the child is wearing could become caught on a corner post extension or finial. This scenario could occur because the ladder is close to the corner of the bunk bed. In the general use of the bunk bed, a child could lean over the corner post extension or finial while ascending or descending the ladder, thus creating the potential for catching an item that is around his neck.

A hanging could also occur when a child becomes entangled in an item that is intentionally attached to a bunk bed. Items such as belts, sheets, and t-shirts are widely available in the home and can easily be tied, hooked, or looped to a corner post extension or finial. Children may play with these items, may use them as forts or swings, or may hold onto the item and jump from the bed. The corner post extension or finial may be a convenient place to attach such an item, but a child may also attach an item to a guardrail or other part of the bunk bed. It is also foreseeable that children may play with an object already attached to the bed by someone else.

Once children become hung by getting caught or entangled, they may lack the cognitive skills and coordination to free themselves. Additionally, their small size may make it difficult for them to reach a place to stand or balance, thus not allowing the opportunity to free themselves. Furthermore, children may not receive immediate aid if they become hung. Children often use

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<sup>1</sup> Since the preparation of staff memoranda for this briefing package, CPSC has learned of an additional four fatal bunk bed hanging incidents that occurred between 2001 and 2003. One of these incidents involved a vertical extension at the junction of the ladder and guardrail. The specific areas of the beds involved in the remaining three incidents are unknown. Including these data, staff is aware of a minimum of four corner post extension hanging incidents with the probability that a portion of an additional 33 incidents also involved corner post extensions.

and play with bunk beds without adult supervision because of the location of the bed and the reasonable perception that children are safe in their bedrooms. Parents also expect to hear a child in danger, since children usually cry out for help when in danger. However, if hung, a child may be unable to cry out and the parents would not be alerted to the trouble.

## **HEALTH SCIENCES INJURY ASSESSMENT (Tab F)**

Injuries resulting from hanging from a bunk bed can range from minor abrasions, contusions, and lacerations, to death, as illustrated by the incident data. The severity of the injury depends on such things as the manner in which the child is suspended, the object that is caught on or attached to the bed and around the child's neck, and the length of time that the child hangs before rescue and resuscitation efforts are begun. In turn, the manner in which the child is suspended depends on the height of the child, the height of the bunk bed, the point where an object becomes caught or is tied onto, and the length of the object that is caught. Corner post extensions or finials can serve as a catch point for an object to become caught or serve as a convenient point to attach an object.

In cases that result in hangings, the specific combination of the aforementioned factors leads to one of two forms of hanging – incomplete hanging or complete hanging. In an incomplete hanging, the weight of the person's body is partially supported by the ground or some other structure, as in a sitting or kneeling position. For cases of complete hanging, the person's body is fully suspended and the weight of their body bears upon the article around their neck. In some cases of complete hanging, the person's toes may barely touch the ground. Both incomplete and complete hangings were seen in the incidents reported to CPSC.

Typically, hanging injuries and deaths result from the reduced oxygen supply and/or a deficient blood flow to the brain. When someone is suspended by an object around the neck, it can constrict the neck and affect the tissues in the neck. These tissues are essential for proper oxygen and blood supply to the brain. In both incomplete and complete hangings, the weight of the person's body is sufficient to obstruct the blood flow and/or air supply. As a result, a child could lose consciousness in as little as 15 seconds.

As is the case in many of the reported bunk bed hangings, it is not necessary for the clothing or rope-like object to completely surround the neck for a hanging to occur. For example, a ligature that is applied beneath the chin will apply enough pressure on the sides of the neck to result in the compromise of the blood and/or air supply.

## **CURRENT STANDARDS (Tab G)**

There is currently no U.S. voluntary or mandatory standard that addresses the height of corner post extensions or finials for bunk beds. The CPSC regulations for bunk beds, 16 CFR Parts 1213 and 1513, incorporate labeling requirements and provisions to eliminate entrapment and fall hazards from bunk beds. The voluntary standard for bunk beds, ASTM F1427-01 Standard Consumer Safety Specification for Bunk Beds, incorporates the same provisions for entrapments and falls as well as provisions for structural integrity and labeling information,

among other general requirements. All known production of bunk beds is reportedly in conformance with the mandatory and voluntary standard.

Although corner post extensions and finials are not currently addressed for bunk beds, there are voluntary standards requirements for extensions and finials on two juvenile products. ASTM standards F406-02 Standard Consumer Safety Specification for Non-Full Size Baby Cribs/Play Yards and F1169-99 Standard Specification for Full-Size Baby Cribs incorporate provisions for corner post extensions and finials to minimize the risk of entanglement while using these products. In these standards, a crib corner post extension that measures less than 0.06 inches from the end panel or more than 16 inches from the end panel is permissible. The rationale for the standard is to eliminate incidents similar to those of concern to the petitioner. The lower limit of the range is to prevent objects around a child's neck from becoming caught while the child stands in the crib. The upper limit is out of an accessible range for an older child who is trying to climb out of the crib and therefore does not present a hazard.

The Australian/New Zealand voluntary standard for bunk beds incorporates performance requirements to address hanging incidents. AS/NZS 4220:1994 Voluntary Standard for Bunk Beds states that there should be no protrusions on the bunk bed that exceed 8 mm (0.31 inches). CPSC staff is not aware of the rationale for this specific measurement. The measurement is intended to eliminate areas of the bunk bed on which a child's clothing could snag or become caught. After review of pertinent literature, CPSC staff believes that this protrusion requirement applies directly to corner post extensions.

#### **VOLUNTARY STANDARD ACTIVITY (Tab H, I and J)**

ASTM Committee F15 on Consumer Products consists of various subcommittees each serving a different consumer product area. On April 11, 2003, the ASTM Committee F15 Chairman submitted a draft standard for Consumer Safety Specifications for Bunk Bed Corner Post Extensions to the chairman of the existing voluntary standard subcommittee for bunk beds. This draft standard designates requirements for the bunk bed corner post assembly similar to the provisions for corner post extensions and finials for cribs and play yards.

On August 7, 2003, the ASTM Subcommittee on Bunk Beds met to discuss the draft standard and review CPSC incident data. Representatives from industry, CPSC, and the Danny Foundation participated in this meeting. During the meeting, the subcommittee committed to develop a voluntary standard to address the concerns raised by the petitioner. Once complete, the standard will be incorporated into the existing voluntary standard on bunk beds. The chairman of the bunk bed subcommittee sent a letter to CPSC as "a formal offer to develop a voluntary standard" and detailing task groups set up during the meeting. The letter can be found in Tab I.

Three task groups were set up to look into different issues associated with bunk bed corner post extensions. The first task group was set up to develop additional language for the existing warning label to address the hazards associated with corner post extensions and finials and the general hazard of attaching items to bunk beds. This effort was viewed as an interim safety measure to address the hazards while performance requirements are developed. In addition, the subcommittee intends that the labeling requirement will continue to stay in place

once corner post extension performance requirements have been developed. Although, the warning label requirements were expected to be completed during the last quarter of 2003 as stated in the letter from the bunk bed subcommittee chairman, work was not started until a February 18, 2004 meeting of the subcommittee. At the February meeting, language was developed to warn against the strangulation hazard associated with parents or children attaching an item to the bunk bed and the child then becoming hung by the item. The new draft language, to be added at the bottom of the existing warning label, reads:

**STRANGULATION HAZARD** – Never attach or hang items to any part of the bunk bed that are not designed for use with the bed; for example, but not limited to, hooks, belts, and jump ropes.

Since corner post extensions and finials are to be addressed through performance criteria in the future, the phrase “any part of the bed” is intended to include corner post extensions as well as other parts including ladders, guard rails and beams. The language does not warn against becoming caught on the extension as warning labels are intended to prohibit deliberate action. Accidentally becoming hung is not an action that can be warned against. This hazard will be addressed through the performance requirements. The new warning label language is expected to go to ballot in April 2004.

At the February 18, 2004 meeting, two other task groups were formed to evaluate CPSC data and to work on developing design and performance criteria to address the hazards of hanging associated with bunk bed corner post extensions and finials and other potential catchpoints. The subcommittee chose to concentrate on performance requirements rather than design requirements. A group of subcommittee members will meet in April 2004 to assess four potential performance requirements to prevent hangings on extensions and finials and results will be discussed at a subcommittee meeting currently planned for June 2004. While work on the performance requirements was projected to be completed in the second or third quarter of 2004 as stated in the subcommittee chairman’s letter, the chairman stressed at the meeting the difficulty of the task and the likelihood that this would be a long process. The 2004 completion date is no longer expected and no completion date has been set.

CPSC staff participated in the August 2003 and February 2004 subcommittee meetings, including the development of the warning label language. Staff plans to continue to participate in task groups and meetings.

#### **FEDERAL REGISTER NOTICE (Tab B)**

The Commission published a Federal Register notice on November 8, 2002 soliciting written comments concerning the petition from interested persons. The comment period ended on January 7, 2003 and no comments were submitted.

## DISCUSSION

Based on the identified corner post extension or finial incidents, the frequency of incidents appears low with respect to the number of products and the number of years over which the injuries occur. Despite the small number of reported incidents, the severity of each incident remains high. The majority of incidents result in the death of the victim. The small size and lack of strength of the children and the unsupervised environment in which bunk beds are used lead to the likelihood that a child in this type of hanging situation will die.

The petitioner is requesting a mandatory standard to eliminate corner post extensions and finials. The costs associated with modifications of bunk beds to eliminate or limit the height of corner post extensions and finials are unknown, but are expected to be small. They would most likely involve redesign of some bunk beds and increased quality control to ensure compliance to any standard requirements. Preliminary estimates suggest that if a standard were developed that *fully* eliminated the risk of death associated with the four known fatalities from corner post extensions or finials, and if the increased cost associated with the change was not more than a few dollars per bunk bed, the costs would remain in line with the benefits. As noted earlier, some of the deaths categorized as “unknown” could have involved corner post extensions or finials. Consequently, any increase in the number of deaths associated with this scenario would increase the societal cost associated with bunk bed corner post extensions and finials proportionately, and thus the potential benefits of reducing these costs (see Tab C).

Efforts to eliminate or limit the height of corner post extensions and finials on bunk beds will likely reduce the number of deaths and injuries by reducing the area of the corner post assembly that a child can get caught on or attach a rope-like item to. Children will continue to play on and around bunk beds, however, and can get caught on other protrusions or attach items to other parts of the bunk bed. Therefore, limiting the height of the corner post assembly will not eliminate the general hazard of hangings on bunk beds.

There is currently no voluntary standard in place to address hangings on corner post extensions and finials. The ASTM voluntary standard subcommittee for bunk beds has committed to develop a standard for bunk bed corner post extensions. The standard will address the hazards associated with corner post extensions and finials as defined by the petitioner. The subcommittee has also committed to address staff's concerns about other catchpoints and people attaching items to other parts of bunk beds as potential hanging hazards. The bunk bed subcommittee chairman expected labeling work to be completed in 2003 and design and performance criteria work to be completed in late 2004. In February 2004, the subcommittee drafted a proposed revision to the warning label and began work on new performance requirements. A revised label is expected to go to ASTM ballot in April 2004. The original 2004 completion date for performance criteria is not expected to be met.

## OPTIONS

The Danny Foundation petitioned the Commission to issue a mandatory standard that bans corner post extensions and finials from bunk beds. The staff provides the following options for consideration:



### **1. Grant the petition.**

If the Commission determines that bunk bed corner post extensions and finials may present an unreasonable risk of injury and that a rule is reasonably necessary to reduce or eliminate the risk, the Commission could grant the petition and direct the staff to prepare a draft advance notice of proposed rulemaking (ANPR) for Commission consideration.

### **2. Deny the petition.**

If the Commission concludes that the available data do not indicate that bunk bed corner post extensions and finials present an unreasonable risk of injury, that the available data are insufficient to show an unreasonable risk of injury, or that a rule is not reasonably necessary to reduce or eliminate the risk, then the Commission could deny the petition. The Commission also in that instance could direct staff to work with the voluntary standards committee to develop a standard to address the hazard presented by corner post extensions and finials.

### **3. Defer a decision on the petition.**

The Commission could defer a decision on the petition to determine what action the bunk bed voluntary standard subcommittee will take to address the hazard. The period of deferral would be used to gather further information about hanging incidents involving bunk beds with unknown circumstances and for staff to work with the bunk bed voluntary standard subcommittee to develop labeling and design and performance criteria.

## **RECOMMENDATION**

The staff recommends that the Commission defer a decision on the petition and direct staff to continue to work with the voluntary standard subcommittee.

Staff recognizes that there is a large amount of unknown information associated with the involvement of bunk bed corner post extensions in hanging incidents. However, the information that is available illustrates the presence of the hazard and the severity of the hazard. In September 2003, the ASTM bunk bed subcommittee committed to develop a voluntary standard that addresses both the petitioner's concerns and other potential hanging hazards identified by CPSC staff. While development of the design or performance requirements was originally expected to be completed in late 2004, work did not begin until February 2004 and there is currently no completion date set.

If the Commission defers a decision, during the time of deferral, staff will continue to gather information about hanging incidents with unknown circumstances and work with the bunk bed subcommittee to develop requirements to address corner post extensions and finials as well as other potential hanging hazards associated with bunk beds. Staff will keep the Commission informed about progress on the voluntary standard.

**TAB A**



# The Danny Foundation

For Crib and Child Product Safety

September 26, 2002

(CP 03-1 / HP 03-1)

Paul Stratton, Chairman  
Consumer Product Safety Commission  
Washington, D.C. 20207

RE: Petition to Establish Mandatory Safety Standards for Bunk Bed Cornerposts

Dear Chairman Stratton:

The Danny Foundation (the "Foundation") hereby petitions the Consumer Product Safety Commission (the "Commission") to investigate, pursuant to 15 U.S.C. section 2054(b), hanging deaths resulting from bunk bed cornerposts (or finials<sup>1</sup>) and determine that bunk bed cornerposts pose a substantial risk of injury and/or death to children. Accordingly, the Foundation requests that the Commission take action in the form of a mandatory bunk bed cornerpost standard, pursuant to its power under the Consumer Product Safety Act, 15 U.S.C. sections 2056 and 2058.

## I. INTEREST OF THE DANNY FOUNDATION

This request is brought by The Danny Foundation, a nonprofit enterprise devoted to securing safety standards for baby cribs and other child products. The Foundation was created in honor of Danny Lineweaver, a child who was hanged on a crib finial on July 14, 1984. The goal of the Foundation is to ensure Danny's preventable tragedy does not befall other children.

## II. THE PRODUCT AND ITS HAZARDS

A bunk bed is any bed in which the bottom of a mattress support is more than 30 inches off the ground.<sup>2</sup> In other words, the defining attribute of a bunk bed is its height. Beyond this common trait, though, bunk beds come in myriad sizes and shapes, many of them marketed as play areas or indoor jungle gyms. They are sold both specifically for children and otherwise.

Many bunk beds are designed with cornerposts or finials. Though decorative, these unnecessary embellishments can be hazardous and even deadly to children of all ages.<sup>3</sup> Jutting up even a fraction of an inch beyond the top edge of the bunk bed frame, a finial can easily catch a child's

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<sup>1</sup> A finial is a crowning ornament or detail such as a decorative knob.

<sup>2</sup> See 16 CFR section 1213.2, definitions.

<sup>3</sup> See Appendix A, Hanging Deaths/Injuries Resulting from Bunk Bed Finials or Cornerposts, 1990-Present

clothing, necklace, or bedding as he or she climbs down from the top bunk. Because bunk beds are usually taller than a child's reach, a hung T-shirt or robe can equal death.

This was the case in a recent death resulting from a bunk bed finial. On Sunday, February 10, 2002, 7-year-old Tyler Ledwell went to bed around 8:30 and was playing in his room. When his mother went to check on him a few hours later, she found him hanging from a makeshift hammock he had made with a blanket and tied to his bunk bed. Tyler is described as a "typical little boy" who loved sports, movies, and karate was already dead.<sup>4</sup>

As the Commission acknowledged with the passage of 16 C.F.R. 1213<sup>5</sup>, the dangers of bunk beds more than justify their strict regulation. Existing regulations, however, should be extended to include *all* facets of bunk bed design that are hazardous to children's health. In particular, existing bunk bed regulations should be extended to cover finials, a design flourish that has killed at least 14 American children since 1993.<sup>6</sup>

The Commission has addressed the dangers of finials before. Through the suggested adoption of a voluntary standard and the propagation of Document #5027, the Commission has all but eliminated cornerposts and finials from the design of baby cribs.<sup>7</sup> Unfortunately, such embellishments are still common on bunk beds, as are the resulting injuries and deaths.

### **III. VOLUNTARY STANDARDS ARE INADEQUATE TO ADDRESS THE HANGING RISK ASSOCIATED WITH BUNK BED CORNERPOSTS AND FINIALS**

In its published Appendix to 16 C.F.R. 1213, the Commission acknowledged that it is unlikely that the bunk bed industry<sup>8</sup> will ever achieve a level of "substantial compliance" with a voluntary safety standard. Previously, the industry was given *eight years* to comply with a voluntary standard for safety rails; compliance was never achieved and over 50 children died in the interim. To prevent another such ongoing tragedy, the Commission should bypass a voluntary standard against finials and require that the bunk bed industry comply with *mandatory* rules.

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<sup>4</sup> J. Lockwood, *Blanket Strangles Hopatcong boy, 7*, THE STAR-LEDGER, Feb. 13, 2002 (Newark, NJ).

<sup>5</sup> Strictly regulating the design of bunk beds to prevent hanging deaths.

<sup>6</sup> See Appendix A, *Hanging Deaths/Injuries Resulting from Bunk Bed Finials or Cornerposts, 1990-Present*

<sup>7</sup> Before the voluntary standard, over 48 strangulation deaths were associated with crib finials in a ten-year period. By banning finials more than 1/16<sup>th</sup> of an inch in length, the voluntary standard worked to greatly reduce this number (though, unfortunately, it did nothing to lessen the hanging risk associated with older, unsafe cribs still in public use). While the Foundation lauds the success associated with the voluntary standard, it nevertheless maintains the position that any amount of cornerpost extension poses an unnecessary risk and should therefore be eliminated pursuant to a mandatory standard.

<sup>8</sup> See Appendix B, *Bunk Bed Manufacturers*, for a list of current bunk bed manufacturers that the Foundation has identified. This list is not meant to be all-inclusive.

Bunk beds are particularly worthy of mandatory standards. As the Commission has noted, bunk bed dangers pose "the most severe risk—death—to one of the most vulnerable segments of our population—infants and young children."<sup>9</sup> Moreover, injuries sustained in bunk beds "occur during the intended use of the product," without any intervening action; that is, children are most likely to be hurt while simply getting in or out of bed.<sup>10</sup> Finally, and perhaps most substantially, because bunk beds "can be made relatively easily by very small companies," there will inevitably and "always be an irreducible number of new, smaller bunk bed manufacturers who will not follow [a] voluntary standard."<sup>11</sup> As a result, mandatory rules are the only solution to bunk bed dangers.

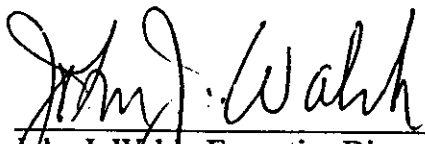
## V. ACTION REQUESTED

With these considerations in mind, the Foundation respectfully requests the Commission investigate the ongoing hanging deaths caused by bunk bed cornerposts, test existing bunk bed cornerpost designs to determine the severity of the risks posed, and ultimately determine pursuant to 15 U.S.C. section 2054(b) that bunk bed cornerposts pose a substantial risk of injury and/or death to children. The Foundation further requests that, acting under the authority of Consumer Product Safety Act, 15 U.S.C. sections 2056 and 2058, the Commission institute mandatory safety standards banning finials or cornerposts from bunk beds.

Respectfully Submitted,



Lee Baxter, Chairman  
The Danny Foundation



John J. Walsh, Executive Director  
The Danny Foundation

<sup>9</sup> See Appendix to 16 C.F.R. 1213(vi-x).

<sup>10</sup> *Id.*

<sup>11</sup> *Id.*

## APPENDIX A

**Hanging Deaths/Injuries Resulting from Bunk Bed Finials or Cornerposts, 1990-Present<sup>12</sup>**

Date	Age of Victim	Occurrence
07/31/1993	12	Boy is strangled to death by karate belt looped over bunk bed
11/05/1994	12	Boy is found dead, hanged by ligature looped over bedpost
02/23/1995	10	Boy accidentally hangs himself by tying shirt to bunk bed post and then, while playing, attempting to put his head in the shirt
04/22/1995	7	Lodged a belt over bunk bed post, put it around her neck and while swinging back and forth, strangled
11/05/1995	15 months	Boy dies of asphyxiation after being strangled by belt looped around bunk bed post
12/28/1996	8	Boy is hanged by cloth belt entangled on bunk bed post
03/05/1997	11	Boy died after he accidentally hanged himself with a bedsheet attached to a bunkbed post
04/08/1997	5	A female accidentally hung herself from the cornerpost of a bunk bed. A bathrobe belt was found around her neck
11/12/1997	11	Boy dies of asphyxiation after belt wrapped around neck becomes looped over bedpost
05/01/1998	19 months	Baby boy dies of asphyxiation after neck is entwined with necktie tied to bed post
01/16/1999	5	Boy dies from asphyxia after becoming entangled in a nylon net hanging from a bunk bed post
05/23/1999	10	Boy dies of asphyxiation after blanket "cape" is caught on upper bunk bed cornerpost
06/21/1999	11	Boy hanged to death by a belt on the top of his bunk bed
07/12/1999	7	Girl dies from accidental strangulation with dog leash looped over bunk bed post
08/02/1999	10	Boy dies from asphyxiation after being hung from bunk bed by bathrobe belt
08/16/1999	2	Boy put a strap attached to a water bottle around his neck. Strap caught on the bunk bed post and the child was hanged
09/29/1999	8	Boy dies from asphyxiation after being hung from bunk bed by bathrobe belt
01/23/2000	9	Boy is strangled to death by bathrobe tied to bunk bed cornerpost
05/03/2001	4	Boy hanged to death on one strap of backpack/purse hung over cornerpost
02/12/2002	7	Boy dies of asphyxiation in makeshift hammock hung on bunk bed cornerposts

<sup>12</sup> Compiled from official CPSC "Reported Incidents" and "Death Certificate" records dated February 13, 2002 and June 5, 2002; see also J. Lockwood, *Blanket Strangles Hopatcong boy, 7*, THE STAR-LEDGER, Feb. 13, 2002 (Newark, NJ). All reported injuries and deaths occurred within the United States. For an example of a bunk bed death outside the United States, see, e.g., Geoff Fox, *Bunk-Bed Tragedy*, YORKSHIRE EVENING POST, April 5, 2002 (three-year-old boy found dead, hanging by his T-shirt from vertical post on bunk bed, on November 28, 2001, in West Yorkshire, England).

## APPENDIX B

U.S. Bunk Bed Manufacturers<sup>13</sup>

MANUFACTURER	ADDRESS	PHONE	URL
American Bedding Mfg. Inc.	P.O. Box 1048 Athens, TN 37371-1048	800 203 2507	<a href="http://www.americanbeddingmfg.com">http://www.americanbeddingmfg.com</a>
Ashley Furniture Industries, Inc.	Arcadia, WI		<a href="http://www.ashleyfurniture.com">http://www.ashleyfurniture.com</a>
Athens Furniture, Inc.	Athens, TN		
BarnFurnitureMart.com	6206 N. Sepulveda Blvd. Van Nuys, CA 91411-1110	888 302 2276	<a href="http://www.barnfurnituremart.com">http://www.barnfurnituremart.com</a>
Bassett Furniture Industries, Inc.	3525 Fairystone Park Highway Bassett, VA 24055	276 629 6000	<a href="http://www.bassettfurniture.com">http://www.bassettfurniture.com</a>
B.J. Woodwards, Inc.	P.O. Box 1100 Haleyville, AL 35565		
Brill Furniture	Ludington, MI	231 843 2430	
Broyhill Furniture Industries, Inc.	Lenoir, NC	800 327 6944	<a href="http://www.broyhillfurn.com">http://www.broyhillfurn.com</a>
Bunk Bed Creations	P.O. Box 556 Louisville, TN 37777	865 977 4451	<a href="http://www.bunkbedcreations.twoffice.com">http://www.bunkbedcreations.twoffice.com</a>
Bunk Beds and Country Wood Crafts, by Greg (Harris)	Van Buren, MO	573 323 8846 E-mail shadow1100@centurytel.net	<a href="http://www.galaxymall.com/home/wood">http://www.galaxymall.com/home/wood</a>
Bunk Beds by Bud	907 Jackson Ave Wauconda, IL 60084-1323	847 526 7645	<a href="http://www.bunkbedsbybud.com">http://www.bunkbedsbybud.com</a>
Bunk Beds Etc	107 Industrial Blvd Cedar Park, TX 78613	512 259 7779	<a href="http://www.mybunkbeds.com">http://www.mybunkbeds.com</a>
Bunk Beds 4-U by Bacpro	1312 Electra Ave Rowland Heights, CA 91748	626 810 0779	<a href="http://www.bunkbeds4-u.com">http://www.bunkbeds4-u.com</a>
Bunk Beds of Vermont	205 Pettingill Road Essex Junction, VT 05452	802 879 8614	<a href="http://www.bunkbedsofvermont.com">http://www.bunkbedsofvermont.com</a>
Bunk Beds Unlimited	3048-E W Tharpe St. Tallahassee, FL	850 536 0787	<a href="http://www.bunkbedsunlimited.com">http://www.bunkbedsunlimited.com</a>
Bunksnstuff LLC aka Bunksonline.com	P.O. Box 658 Kent, WA 98035 fax 253 520 2634	800 355 1997	<a href="http://www.bunksonline.com">http://www.bunksonline.com</a> <a href="http://www.bunksnstuff.com">http://www.bunksnstuff.com</a>
Bush Industries, Inc.	P.O. Box 460 One Mason Drive Jamestown, NY 14702-0460	800 950 4782 800 727 2874 716 665 2000 716 665 2510	<a href="http://www.bushfurniture.com">http://www.bushfurniture.com</a>
Butler Woodcrafters	13540 E. Boundary Rd. Ste. 109 Midlothian, VA 23112	877 852 0784	<a href="http://www.butlerwoodcrafters.com">http://www.butlerwoodcrafters.com</a>

<sup>13</sup> This list is not meant to be all inclusive. According to the recent JPMA Baby Business 2002 publication, other bunk bed manufacturers include, without limitation, the following: A.P. Industries; Badger Basket; Camelot Furniture; Corsican Kids; Delta Enterprise, ebbe, Inc.; Finn & Hattie; Flexa Furniture; I.D. Kids; L.A. Baby; MA2 Furniture; Morigeau-Lepine; Ocean Imports; Orbelle Trade; Papillon Furniture; P.J. Kids; South Shore; and Vermont Precision.

Carpenter's Brothers Furniture	P.O. Box 425 Sunderland, MA 01375	800 777 2865	<a href="http://www.carpbros.com">http://www.carpbros.com</a>
Child Craft Industries, Inc.	Salem, IN	812 883 1819	<a href="http://www.childcraftind.com">http://www.childcraftind.com</a>
Company Kids (related to The Company Store)		800 323 8000	<a href="http://www.thecompanystore.com">http://www.thecompanystore.com</a>
Corr-Fac Corp.	3800 US-23 North Alpena, MI	517 358 7195	
Don Downs WoodCrafter	12136 Ellerbe Road Shreveport, LA 71115	318 797 6818	<a href="http://www.woodcrafteronline.com">http://www.woodcrafteronline.com</a>
Ethan Allen Interiors, Inc.	Ethan Allen Dr. Danbury, CT 06813	203 743 8000	<a href="http://www.ethanallen.com">http://www.ethanallen.com</a>
Fraenkel Co., Inc.	P.O.Box 15385 Baton Rouge, LA 70895	225 275 8111	<a href="http://www.fraenkel.com">http://www.fraenkel.com</a>
Jackson's Rustic Furniture, Inc.	David Jackson Longmont, Colorado United States	Email <a href="mailto:jrfincs@netscape.net">jrfincs@netscape.net</a>	<a href="http://www.jacksonrusticfurniture.com/">http://www.jacksonrusticfurniture.com/</a>
KI	1300 Bellevue St. Green Bay, WI	800 424 2432	<a href="http://www.ki-inc.com">http://www.ki-inc.com</a>
Ladd Furniture Inc. (a La-Z- Boy company)	4620 Grandover Parkway Greensboro, NC	336 294 5233	
Lane Furniture aka Lane Home Furnishings	5380 Highway 145 Tupelo, MS 38802	419 499 0607	<a href="http://www.action-lane.com">http://www.action-lane.com</a>
Lea Industries, Inc. (a La-Z-Boy company)	4620 Grandover Parkway Greensboro, NC	336 294 5233	<a href="http://www.leafurniture.com">http://www.leafurniture.com</a>
Leggett & Platt, Inc. "Leggett's Ornamental bed div. is known as Fashion Bed Group"	P.O. Box 757 Number 1 Leggett Rd. Carthage, MO	417 358 8131	<a href="http://www.leggett.com">http://www.leggett.com</a>
Lexington Home Brands	P.O. Box 1008 Lexington, NC 27293	800 539 4636	<a href="http://www.lexington.com">http://www.lexington.com</a>
LodgeCraft	P.O. Box 1303 15 Cliff Ave. Eureka, MT 59917	800-296-2032	<a href="http://www.lodgecraft.com">http://www.lodgecraft.com</a>
Maco Wood Products	Clackamas, OR		<a href="http://www.macowoodproducts.com/">http://www.macowoodproducts.com/</a>
Moosehead Mfg. Co.	P.O. Box 287 Monson, ME 04464	207 997 3621	<a href="http://www.mooseheadfurniture.com">http://www.mooseheadfurniture.com</a>
New Pioneer Log Homes, Inc.	3048 Wilson Rd. Weippe, ID 83553	800 252 6756	<a href="http://www.nplhomes.com">http://www.nplhomes.com</a>
O'Sullivan Industries, Inc.	1900 Gulf St. Lamar, MO 64759	417 682 3322	<a href="http://www.osullivan.com">http://www.osullivan.com</a>
Pottery Barn Kids		800 993 4293	<a href="http://www.potterybarnkids.com">http://www.potterybarnkids.com</a>
Quality Craft Furniture	8911 Reseda Blvd. Northridge, CA 91324	888 838 0707	
Royal Bed Frame, Inc.	Brooklyn, NY		
Sandberg Furniture Mfg. Co.	Los Angeles, CA		<a href="http://www.sandbergfurniture.com">http://www.sandbergfurniture.com</a>
Stanley Furniture Co, Inc.	1641 Fairystone Park Highway Stanleytown, VA 24168	276 627 2000	<a href="http://www.stanleyfurniture.com">http://www.stanleyfurniture.com</a>
Status Fashion Furniture			<a href="http://www.statusfurniture.com">http://www.statusfurniture.com</a>
Sleepmattress, Inc. (a Steinbock-Braff company)	3611 14th Ave. Brooklyn, NY 11218	800 638 8420	<a href="http://www.sleepmattress.com">http://www.sleepmattress.com</a>
Stickley, L. & J.G.	One Stickley Drive, P.O. Box 480, Manlius, NY	315 682 5500	<a href="http://www.stickley.com">http://www.stickley.com</a>



The Stubborn Norwegian Bunkbed Maker	1904 No. 192 <sup>nd</sup> St Shoreline, WA 98133	877 381 7217	<a href="http://www.stubborn-norwegian.com">http://www.stubborn-norwegian.com</a>
Sunny Manufacturing, Inc.	Longwood, FL		
Texas Ranch Furniture	Canton, OH		
Through the Barn Door Furniture Co. Inc.	Henderson, NC		
TimberlineFurniture.com	4040 Heeb Rd. Manhattan, MT 59741	800 405 5516	<a href="http://www.timberlinefurniture.com">http://www.timberlinefurniture.com</a>
University Loft Co.	433E. Washington St. Indianapolis, IN 46204	800 423 LOFT	<a href="http://www.universityloft.com">http://www.universityloft.com</a>
Valleyview	Millersburg, OH		
Vaughan Furniture Co, Inc.	Galax, VA		<a href="http://www.vaughnfurniture.com">http://www.vaughnfurniture.com</a>
Vermont Tubbs	Brandon, VT		<a href="http://www.vermonttubbs.com">http://www.vermonttubbs.com</a>
Wilson & Hayes, Inc.	1601 Eastlake Ave. Seattle, WA 98102	206 323 6758	
Woodcrest Mfg.		765 472 5361	<a href="http://www.woodcrestmfg.com">http://www.woodcrestmfg.com</a>

**TAB B**

**Special Accommodations**

This meeting is physically accessible to people with disabilities. Requests for sign language interpretation or other auxiliary aids should be directed to Gail Bendixen, 907-271-2809, at least 5 working days prior to the meeting date.

Dated: November 5, 2002.

**Theophilus R. Brainerd,**

*Acting Director, Office of Sustainable Fisheries, National Marine Fisheries Service.*

[FR Doc. 02-28546 Filed 11-7-02; 8:45 am]

BILLING CODE 3510-22-S

**CONSUMER PRODUCT SAFETY COMMISSION****Petition Requesting Standard for Bunk Bed Cornerposts**

**AGENCY:** Consumer Product Safety Commission.

**ACTION:** Notice.

**SUMMARY:** The Commission has received a petition (CP-03-1/ HP-03-1) requesting that the Commission establish a standard for bunk bed cornerposts. The Commission solicits written comments concerning the petition.

**DATES:** The Office of the Secretary must receive comments on the petition by January 7, 2003.

**ADDRESSES:** Comments, preferably in five copies, on the petition should be mailed to the Office of the Secretary, Consumer Product Safety Commission, Washington, DC 20207, telephone (301) 504-0800, or delivered to the Office of the Secretary, Room 501, 4330 East-West Highway, Bethesda, Maryland 20814. Comments may also be filed by telefacsimile to (301) 504-0127 or by email to [cpsc-os@cpsc.gov](mailto:cpsc-os@cpsc.gov). Comments should be captioned "Petition CP-03-1/ HP-03-1, Petition on Bunk Bed Cornerposts." A copy of the petition is available for inspection at the Commission's Public Reading Room, Room 419, 4330 East-West Highway, Bethesda, Maryland, and on the Commission's website at <http://www.cpsc.gov>.

**FOR FURTHER INFORMATION CONTACT:** Rockelle Hammond, Office of the Secretary, Consumer Product Safety Commission, Washington, DC 20207; telephone (301) 504-0800, ext. 1232.

**SUPPLEMENTARY INFORMATION:** The Commission has received correspondence from the Danny Foundation requesting that the Commission establish a standard to address the hazard of strangulation

posed by bunk bed cornerposts. The Commission is docketing this request as a petition under the Consumer Product Safety Act, 15 U.S.C. 2057, and the Federal Hazardous Substances Act, 15 U.S.C. 1261(q)(1)(A). The petitioner asserts that, due to the height of bunk beds, cornerposts on bunk beds pose a substantial risk to children when their clothing, bedding or other items become caught on the cornerposts. In such circumstances, children can hang from the caught item and die. The petitioner states that such incidents have resulted in fourteen deaths to American children since 1993.

Interested parties may obtain a copy of the petition by writing or calling the Office of the Secretary, Consumer Product Safety Commission, Washington, DC 20207; telephone (301) 504-0800. Copies of the petition are also available for inspection from 8:30 a.m. to 5 p.m., Monday through Friday, in the Commission's Public Reading Room, Room 419, 4330 East-West Highway, Bethesda, Maryland, or from the Commission's website at <http://www.cpsc.gov>.

Dated: November 4, 2002.

**Todd Stevenson,**

*Secretary, Consumer Product Safety Commission.*

[FR Doc. 02-28420 Filed 11-7-02; 8:45 am]

BILLING CODE 6355-01-P

**DEPARTMENT OF DEFENSE****Office of the Secretary****The Joint Staff; National Defense University (NDU), Board of Visitors (BOV) Meeting**

**AGENCY:** Department of Defense.

**ACTION:** Notice of meeting.

**SUMMARY:** The President, National Defense University has scheduled a meeting of the Board of Visitors.

**DATES:** The meeting will be held on November 14th and 15th 2002, from 18:00 to 21:00 on the 14th and continuing on the 15th from 08:30 to 17:00.

**ADDRESSES:** The meeting will be held in Room 115, Marshall Hall, Building 62, National Defense University, 300 5th Avenue, Fort McNair, Washington, DC 20319-5066.

**FOR FURTHER INFORMATION CONTACT:** NDU Assistant Vice President for Administration and Deputy Chief of Staff, National Defense University, Fort Lesley J. McNair, Washington, DC 20319-6200. To reserve space,

interested persons should contact Mr. Michael Mann, @ (202) 685-3903 and/ or e-mail: [mannm@ndu.edu](mailto:mannm@ndu.edu).

**SUPPLEMENTARY INFORMATION:** The agenda will include past, present, and future Joint Professional Military Education and National Security/Home Land Security Policy issues that drive mission requirements for the National Defense University and its many Components. The meeting is open to the public with limited space available for observers to be allocated on a first come, first served basis.

**POC:** Michael Mann, BOV Executive Secretary, @ [mannm@ndu.edu](mailto:mannm@ndu.edu) and/or (202) 685-3903.

Dated: October 31, 2002.

**L.M. Bynum,**

*Alternate OSD Federal Register Liaison Officer, Department of Defense.*

[FR Doc. 02-28413 Filed 11-7-02; 8:45 am]

BILLING CODE 5001-06-M

**DEPARTMENT OF DEFENSE****United States Military Cancer Institute****Sunshine Act Meeting Notice**

**AGENCY:** United States Military Cancer Institute.

**TIME AND DATE:** 0830 to 1500, November 14, 2002.

**PLACE:** Eisenhower Suite, WRAMC 6900 Georgia Ave., NW., Washington, DC 20307.

**STATUS:** Open—under "Government in the Sunshine Act" (5 U.S.C. 552b(e)(3)).

**MATTERS TO BE CONSIDERED:** USMCI goals and objectives.

8:30 a.m. Meeting—Committee of Scientific Advisors

(1) Welcome

(2) Introduction

(3) Overview of various Oncology Programs

(4) Committee and Director Executive Session

**CONTACT PERSON FOR MORE INFORMATION:** Mr. William Mahr, Associate Director for Administration—USMCI, (202) 782-0552.

Dated: November 4, 2002.

**Patricia L. Toppings,**

*OSD Federal Register Liaison Officer, Department of Defense.*

[FR Doc. 02-28720 Filed 11-6-02; 3:32 pm]

BILLING CODE 5001-08-M

**TAB C**



UNITED STATES  
CONSUMER PRODUCT SAFETY COMMISSION  
WASHINGTON, DC 20207

**Memorandum**

Date: December 3, 2003

TO : Debra L. Sweet, EPHA, Project Manager for Bunk Bed  
Corner Post Petition

THROUGH : Dale R. Ray, Acting Associate Executive Director for  
Economic Analysis *DR*  
Gregory B. Rodgers, PhD., Senior Staff Coordinator,  
EC *GBR*

FROM : Terrance R. Karels, EC *TRK*

SUBJECT : Bunk Bed Petition

This memorandum is in response to Petition CP03-1/HP03-1, filed by the Danny Foundation on September 26, 2002. The petition requests the Commission to establish a mandatory standard for bunk beds to address the potential hazard of children hanging from items caught on (or tied to) bunk bed corner post extensions or finials.

Bunk beds traditionally are stackable twin beds constructed with a wood or metal frame (Figure 1 of the Appendix); however, bunk beds increasingly are sold as a single unit. Some models are sold with double-sized lower beds. The Commission's bunk bed regulation (16 CFR section 1213.2) defines a bunk bed as any bed for which the bottom of any mattress support is more than 30 inches off the floor. Thus, loft beds (elevated beds with no lower bunk) would be considered bunk beds (Figure 2). The retail price of bunk beds can range from under \$200 to over \$700, with the average retail price at about \$300.

The American Furniture Manufacturers Association (AFMA) represents manufacturers of bunk beds. According to AFMA, 40 firms, either AFMA members or members of the standing ASTM bunk bed voluntary standard committee, account for 75% to 80% of total annual US sales of bunk beds. Through previous Commission rulemaking and compliance activities, staff is aware of about 170 firms, US and foreign, that have supplied bunk beds to the US market in the recent past. Taken together, these firms are believed to account for virtually all US sales of bunk beds. All known production of bunk beds reportedly complies with the mandatory standard for these products.

Industry sources estimate that about 500,000 bunk beds are sold annually for household use, and that sales have been relatively stable over time. These sources report that the average expected useful life of these products is 13 to 17 years. Thus, on the order of eight million units would be expected to be in use at any given time. This includes units in the traditional stacked bunk bed configuration, and those "broken down" to form two single beds.

According to trade sources, wooden bunk beds account for about 60% of the bunk beds in use (or about five million units). Wooden bunk beds are the types most likely to have corner post extensions or finials. Some metal bunk beds also have corner post extensions, as shown in Figure 3 of the Appendix. However, metal bunk beds are most often found with curved headboards and footboards, with no corner post extensions or finials (other than perhaps at the weld or solder contacts) as shown in Figure 4 of the Appendix.

## **POTENTIAL COSTS OF ELIMINATING CORNER POST EXTENSIONS**

Potential costs associated with modifications of bunk beds to meet requirements to eliminate the potential for hangings from corner post extensions and finials would likely involve some redesign of bunk beds, and increased quality control procedures to ensure compliance with any such requirement. These costs are expected to be small. However, since many bunk beds are sold at least partially unassembled or "knocked down," and require some consumer assembly, special care on the manufacturers' part may be necessary to ensure that the assembled product would meet the requirements. Even small variations in prefabricating the products may result in some portion of corner posts extending over the headboard, footboard, or guardrails after consumer assembly.

## **POTENTIAL BENEFITS OF ELIMINATING CORNER POST EXTENSIONS**

The Directorate for Epidemiology identified a minimum of 4 deaths associated with hangings involving bunk bed corner post extensions and finials over the past 13 years. If we assign a cost of \$3 to \$7 million per death, a range which is consistent with estimates of the statistical value of life in the economic literature, the expected societal costs associated with this risk would range from about \$0.92 million to about \$2.15 million per year (4 deaths x \$3 million/13 years, to 4 deaths x \$7 million/13 years). Assuming that there were 8 million units in use during this time frame, the societal costs would range from

about \$0.12 to \$0.27 per bed per year (\$0.92 million/8 million beds, to \$2.15 million/8 million beds).

The expected useful product life of a bunk bed ranges from about 13 to 17 years. If we assume an average of 15 years, the net present value of the annual societal costs over the bed's expected useful life (if discounted at a rate of 3 percent per year) would range from about \$1.47 to \$3.30.<sup>1</sup> Thus, if a potential standard were developed that fully eliminated the risk of death associated with the 4 known hangings from bunk bed corner post extensions or finials, the increased costs could range from as much as \$1.47 to \$3.30 per bed and not exceed the expected benefits.

As noted earlier, however, this estimate is based on a minimum of 4 deaths associated with hangings involving bunk bed corner post extensions and finials over the 13-year period for which data are available. The Directorate for Epidemiology also noted that there were an additional 20 fatalities over this period for which the location of the hanging was unknown (out of 24 unidentified incidents). There were also 6 fatalities involving the corner post of the bunk bed that potentially could have involved the extension or finial. Thus, some portion of these additional 26 fatalities over the period may have involved hangings from bunk bed corner post extensions or finials (four incidents discussed in the Hazard Analysis memorandum were not included above because they were non-fatal incidents). Any increase in the number of deaths associated with this scenario would increase the societal cost associated with bunk bed corner

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<sup>1</sup> If, for purposes of sensitivity analysis, a discount rate of 7% is used, the net present value of these societal costs would be \$1.14-\$2.56 per bunk bed over its useful life.



post extensions and finials proportionally, and, thus, the potential benefits of reducing the risk.

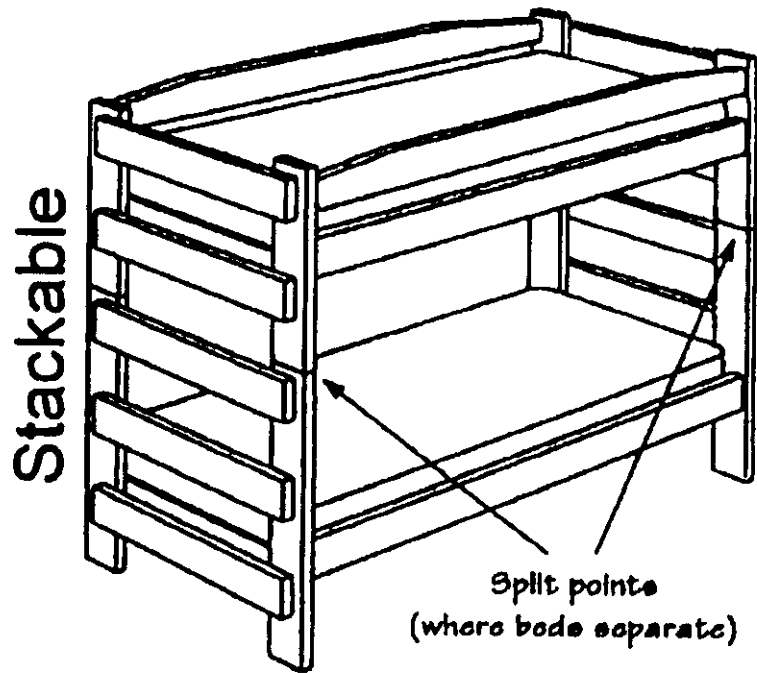


Figure 1: Typical Wooden Bunk Bed Design

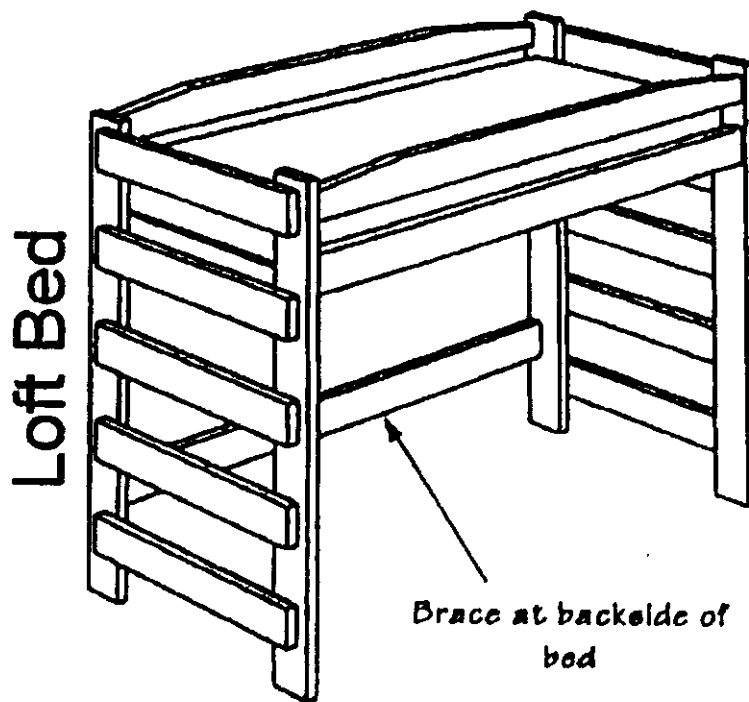


Figure 2: Loft Bed



Figure 3: Metal Bunk Bed with Corner post Extensions

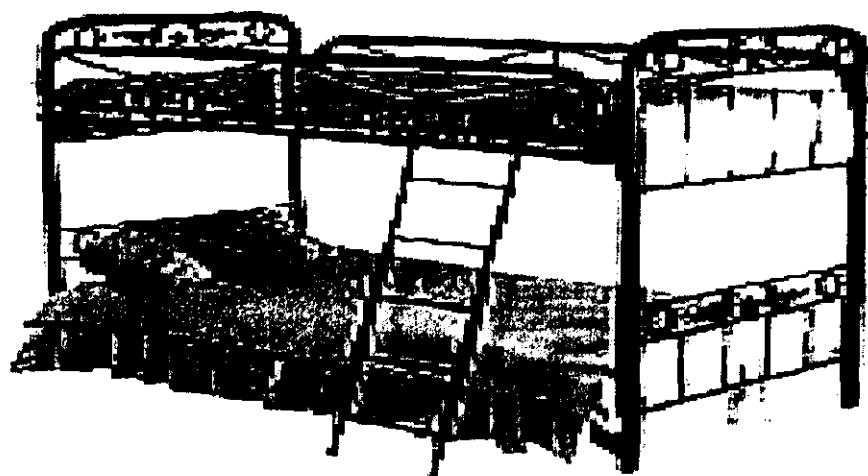


Figure 4: Metal Bunk Bed Without Corner post Extensions

**TAB D**



UNITED STATES  
CONSUMER PRODUCT SAFETY COMMISSION  
WASHINGTON, DC 20207

**Memorandum**

Date: June 24, 2003

TO : Bunk Bed Corner Post Petition File

THROUGH: Russ Roegner, Ph.D. *MQS for RTR*  
Division Director, Division of Hazard Analysis

Sue Ahmed, Ph.D. *SA*  
Associate Executive Director, Directorate for Epidemiology

FROM : Debra Sweet *ds*  
Project Manager, Bunk Bed Corner Post Petition

SUBJECT : Hazard Analysis Memorandum, CP 03-1/HP 03-1

**Background**

This memorandum is written in response to Petition CP 03-1/HP 03-1. The petition submitted by The Danny Foundation on September 26, 2002 requested that the Commission investigate hanging deaths associated with bunk bed corner post extensions or finials and determine that corner post extensions and finials pose a substantial risk of injury.<sup>1</sup> The request for action was that "the Commission institute mandatory safety standards banning finials or corner posts from bunk beds."

The petition states that the hazard associated with the hanging incidents is that the corner post extension, or finial, extends above the top edge of the bunk bed frame and can catch a child's clothing, necklace, or bedding as the child climbs down from the top bunk. Since the bed is taller than the child's reach, if an article of clothing or bedding is caught, the child cannot free himself and is hung. The text of the petition claims that at least 14 children have died in hanging incidents associated with finials since 1993. An appendix attached to the petition includes a table of 20 incidents titled "Hanging Deaths/Injuries Resulting from Bunk Bed Finials or Corner posts, 1990-Present." The data in this table was obtained from CPSC databases and a newspaper article.

**Incident Data**

The CPSC incident databases were searched for injuries and deaths associated with hanging on bunk beds. All incidents associated with bunk beds were searched, not just hanging incidents or incidents with corner post extensions and finials. All incidents of hanging in this memorandum refer to incidents in which something was around a child's neck and the child was hanged.

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<sup>1</sup> The petition discussed hanging deaths associated with corner posts and finials. Staff believes that the petitioner was referring to the corner post extensions rather than the corner posts. The remainder of this memorandum discusses the petitioner's concern as corner post extensions and finials.

Incidents in which the child was entrapped in a structure in the bunk bed or between the bunk bed and a wall are not discussed in this memorandum. Appendix A details the databases that were searched and the search criteria for each database. The dates were selected to be comparable to the incident data submitted by the petitioner.

Due to the small number of cases reported through NEISS for this hazard pattern, staff did not estimate the number of children treated in emergency rooms each year for hangings associated with bunk beds.

The hazard that the petition describes is that a child can be caught on the corner post extension, or finial, by clothing, accessories, or bedding as the child descends from the top bunk bed. Some of the incidents presented in the petition are cases in which the child was not caught on the corner post extension or finial in this manner. Rather, the child deliberately tied something onto the corner post or corner post extension or finial of the bunk bed while playing or played with an object already attached to the corner post or extension and accidentally hung himself. Therefore, during the review of the incident data, staff looked for all types of hangings to determine the possible scenarios and frequencies of such scenarios.

A review of the data, showed that for the time period from January 1, 1990 through December 31, 2002, CPSC has reports of 47 incidents involving children hung on bunk beds. Thirty-nine of the incidents resulted in the death of the child and the remaining eight incidents resulted in injury. Appendix B contains a spreadsheet of the 47 incidents along with pertinent information for each. The children involved in the incidents ranged in age from 11 months to 16 years. Ten of the victims were female and the other 37 victims were male. A distribution of the age and sex of the victims is in Table 1. Information on the bunk beds is generally not available; however, it is reported that nine of the bunk beds involved were metal, four were made of wood, and the material of the bunk bed is unknown in 34 incidents.

**Table 1. Age and Sex Distribution of Bunk Bed Hanging Incidents**

Age (years)	< 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Total
Male	1	2	3	0	4	2	1	2	3	2	2	5	6	3	0	0	1	37
Female	0	0	1	0	0	2	0	4	0	2	0	0	1	0	0	0	0	10
Total	1	2	4	0	4	4	1	6	3	4	2	5	7	3	0	0	1	47

Each hazard scenario in the 47 incidents has two key components that define the scenario. The first key component is the part of the bunk bed the child was hung from. The petitioner's concern is the bunk bed corner post extension or finial, but the data show that other parts of the bunk bed were also involved in some of the hanging incidents. In many of the incident reports, the necessary information to determine the part of the bed involved is not available or is unclear from the description in the incident report. The second key component is whether the child accidentally got caught on the bunk bed by the clothing, accessory, or bedding, or whether the child or someone else intentionally attached an item onto the bunk bed and the child's neck became hung in the item. Again, this information is not always available and sometimes must be

categorized as unknown. Table 2 shows these key components of the hazard scenarios in relation to one another and the number of incidents in each category. Each category is discussed in detail following the table.

For clarification purposes, it is necessary to distinguish among the different parts of the corner post assembly. Relevant to this memorandum is the difference between a corner post, a corner post extension, and a finial. The corner post is the vertical support member of the bunk bed that usually extends from the floor to at least the top of the upper bed's guardrail. This member is necessary in the construction of the bed. While the petitioner refers to the elimination of corner posts from bunk beds, staff assumes the petitioner is referring to the corner post extension. The corner post extension is that section of the corner post that extends above the highest side or end panel, such as the headboard, footboard, or guardrail. Additionally, a finial is a decorative crowning that can be attached to either the corner post or corner post extension. Neither the corner post extension nor the finial serves as a function of the bed beyond a design characteristic of the bed. Through the remainder of this memorandum, the corner post assembly will be divided into two classifications: 1) the corner post, and 2) the corner post extensions or finials.

It is possible that a child could attach a product to the corner post (as opposed to only being able to attach to the extension or finial) if the two adjoining sides of the bunk bed have openings allowing the passage of a rope or rope-like device. The attached item would have to pass through the openings and around the corner post of the bunk bed. Because of this possible scenario, for incidents involving the corner post assembly, it was necessary to differentiate between incidents involving extensions or finials and those incidents that refer to the corner post without indicating if it was the extension of the vertical support member.

**Table 2. Hazard Scenarios**

How the Hanging Device was Attached to Bed	Part of Bed on Which Child Became Hung				
	Corner Post Assembly		Other Part of Bed	Unknown	Total
	Extension or Finial	Corner Post			
Caught on Bed	1*	0	4	1	6
Intentionally Attached to Bed	2	2	5	8	17
Unknown	1	4	4	15	24
Total	4	6	13	24	47

\*This combination of key components is that described in the text of the petition.

## **Incidents Involving Corner Post Assembly**

Ten of the 47 incidents involved a portion of the corner post assembly.<sup>2</sup> In four of the incidents, children became hung on the corner post extension or finial. In the remaining six incidents, children became hung from the corner post of the bunk bed. It is unclear in these six incidents which part of the corner post was involved in the incident – either a section of the vertical support member or the corner post extension or finial. The following sections discuss incidents according to whether (1) something around the child's neck (clothing accessory) caught on the corner post or extension, (2) the child became hung on an item that was intentionally attached to the corner post or extension, or (3) the child was hung on the corner post or extension but it is unknown whether something around the child's neck caught or the child was hung by something intentionally attached to the corner post or extension.

### **Object around Child's Neck Caught on the Corner Post Assembly**

The one incident in this section involved the corner post extension of the bunk bed. This hazard scenario is that identified by the petitioner. The child was accidentally hung after an accessory around the child's neck caught on the bunk bed corner post extension. The incident resulted in the death of the child and is described in more detail below.

- In August 1999, a 2-year-old male died after hanging on the bunk bed corner post extension. The boy climbed onto the top bed and picked up a water cup from a shelf above the bed. The water cup had a strap attached to it and the boy put the strap around his neck. As he descended the bed, the strap caught on the wooden corner post extension and the child was hung. The age of the bed is unknown. The corner post extension protruded vertically six inches from the side guardrail of the bed.

Eliminating or reducing the height of corner post extensions and finials on bunk beds, as requested by the petitioner, would probably prevent incidents such as this one.

### **Product Was Intentionally Attached to the Corner Post Assembly**

In four incidents reported to the Commission, a child was fatally hung from either the corner post or corner post extension or finial of the bunk bed after a product was intentionally attached to the bunk bed. In two of the four incidents, the product was attached to the corner post extension. In the remaining two, staff only knows that the product was attached to a part of the corner post. The children ranged in age from 4 years old to 13 years old. One was a girl and the rest were boys. Although this is not specifically the hazard that the petitioner addresses in the petition, this hazard involves some portions of the corner posts of the bunk bed and therefore each incident is discussed in detail (where available) below.

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<sup>2</sup> In those incidents that referred to the post or bedpost, staff assumed this was the corner post of the bed. According to the Merriam-Webster Dictionary, a post is defined as a piece (as of timber or metal) fixed firmly in an upright position especially as a stay or support. Because bunk beds have four posts that provide support and are located in the corners of the bed, staff believes this assumption of a post or bedpost meaning corner post is reasonable.



- In August 1990, a 13-year-old boy was found hanging from the upper corner post of a bunk bed from a rope that appeared to have been tied by the victim. The manner of death was ruled accidental. Information about the bed is not known. Staff cannot determine the specific area of the corner post assembly that was involved.
- In February 1995, a 10-year-old male died after hanging from the bunk bed corner post. The boy tied a shirt to the post, put his head through it and while playing, accidentally hung himself. Further information about the bed is unknown. Staff cannot determine the specific area of the corner post assembly that was involved.
- In April 1995, a 7-year-old female died when she looped a belt over the bunk bed corner post extension or finial, put it around her neck and was swinging back and forth. Information about the bunk bed is unknown.
- In May 2001, a 4-year-old boy died while playing on his sister's bunk bed. In this incident, the victim's sister had hung her backpack-type purse from the corner post extension of the wooden bunk bed. The victim, who liked playing on the ladder of the bunk bed, became entangled in one of the straps on the purse. He was found with one strap around his neck and the other strap was hooked around the corner post extension. The corner post extension measured approximately three inches in height.

These incidents involve corner posts or corner post extensions on bunk beds as is the concern of the petitioner; however, they are not the specific scenario described in the petition. If the height of corner post extensions and finials on bunk beds is limited, children would be less likely to hang or tie products onto the extensions or finials. Limiting the height of the corner post extensions and finials would not affect incidents in which a product was tied to another area of the corner post.

#### Children Were Hung from the Corner Post Assembly in an Unknown Manner

Five children became hung on the bunk bed corner post or corner post extension, but staff cannot determine whether the child became caught by something he/she was wearing or if the child was hung by a product intentionally attached to the bed. All five incidents resulted in death. One incident is known to have involved the corner post extension of the bunk bed. The area of the corner post involved in the remaining four incidents is unknown. The children were between 2 and 12 years old and two were female, three were male. Because these incidents involve the corner post assembly, the details (where available) are given below.

- In July 1990, a 9-year-old girl was playing with her sister on a bunk bed. The girls were making tents with the bed sheets and the victim wrapped one end of a sheet around her neck as an evening gown. The victim either jumped or fell off the bunk bed. The sheet was either caught on the corner post or tied to the corner post, and the victim accidentally hung herself. Staff cannot determine the specific area of the corner post assembly that was involved in this incident.
- In August 1994, a 2-year-old male hung himself from the foot of a double bunk bed corner post. Further details are unknown. Staff cannot determine the specific area of the corner post assembly that was involved in this incident.
- In November 1994, a 12-year-old male was found suspended from the corner post of the top bed hanging by a ligature around his neck. Details about the ligature and the bed are

unknown. Staff cannot determine the specific area of the corner post assembly that was involved in this incident.

- In March 1997, an 11-year-old male was found unresponsive and hanging with a bed sheet around his neck and around a bunk bed corner post at his home. Further details are unknown. Staff cannot determine the specific area of the corner post assembly that was involved in this incident.
- In April 1997, a 5-year-old female was found in her bedroom with a bathrobe belt around her neck and around the corner post extension of the bunk bed. The bathrobe belt was in a continuous loop, tied together at both ends.

Incidents involving corner post extensions or finials, regardless of whether the child deliberately attached a product to the bunk bed corner post extension or he accidentally caught clothing or bedding on the extension, would be less likely to occur if bunk bed corner post extensions and finials were eliminated. However, only one of the above incidents is known to have involved the corner post extension. Staff does not know whether incidents such as the remaining four would be affected because staff cannot determine the part of the corner post assembly that was involved.

### **Incidents Involving Other Parts of the Bunk Bed**

The Commission has reports of 13 incidents in which a child was hung from a part of the bed other than the corner post assembly. The manner by which the children were hung on these other parts of the bed can be categorized in the same way as those for the corner post assembly. The following discussion details whether (1) something the child was wearing became caught on a part of the bunk bed, (2) the child was hung by an item that was intentionally attached to a bunk bed part, or (3) the child was hung on a part of the bunk bed but it is unknown whether the child became caught or was hung in something attached to the bed.

#### **Child Was Caught on a Part of the Bunk Bed Other than the Corner Post Assembly**

Four incidents were reported to the Commission in which a child was accidentally caught on the bunk bed on a part other than the corner post assembly. Three victims were boys and one was a girl, ranging in age from 4 years old to 10 years old. Three incidents resulted in injuries. In two incidents, a boy and a girl were accidentally caught on the ladders of their bunk beds by the back of their clothing. One of these beds was metal and the victim was caught on a 2½ inch high metal post at the top of the ladder. The material of the other bed is unknown. The third injury involved a boy who was playing with a walkie-talkie with straps. The boy put one strap around his head like a bandana and tried to step from the top bed to the bottom. The free end of the strap got caught on the side mattress support of the metal bed, the loop slipped from the boy's head to his neck, he fell and the strap tightened around his neck. The fourth incident involving a child accidentally getting caught on another part of the bunk bed resulted in the death of the victim. A blanket was tucked under the mattress of the top bunk bed and the blanket had a hole in it. The victim put his head through the hole in the blanket and either fell or jumped off the top bed. The blanket stayed tucked underneath the mattress and also appeared to be caught in between the side guardrail and footboard of the bed.

Incidents such as these would not be prevented by the elimination or reduction in height of bunk bed corner post extensions and finials. Such incidents illustrate that children can be accidentally caught by clothing, accessories or bedding on parts of the bed other than the corner post extension.

#### A Product Was Intentionally Attached to a Part of the Bunk Bed Other Than the Corner Post Assembly

Five children were reported to have died from hanging after getting caught in a product that was attached to a part of the bunk bed other than the corner post assembly. In all but one incident, the child tied a product around his or her neck and to another part of the bunk bed and accidentally hung himself or herself. These four incidents involved children between 6 years old and 11 years old, three boys and one girl. The children were playing with items such as a belt, a bathrobe belt, and a purse strap. The attachment points on the bunk beds were the bunk bed guardrail (3 incidents) and a support beam for the upper bed's mattress. In the fifth incident, a 5-year-old male is believed to have dived into the lower bed from the end and caught his head in a stuffed animal display net. The net was hung from the horizontal member of the footboard of the top bed. Although the victim may not have been the one who tied the display net onto the bed, the net was intentionally attached to the bunk bed.

Eliminating corner post extensions and finials from bunk beds or reducing their height would not preclude people from attaching products such as belts, purse straps, or stuffed animal display nets from other parts of bunk beds.

#### Child Was Hung From a Part of the Bunk Bed Other Than the Corner Post Assembly in an Unknown Manner

From 1990 through 2002, CPSC is aware of four children who were hung from a part of the bunk bed other than the corner post assembly, but it is unknown whether the child was accidentally caught on the bed or intentionally attached a product to the bunk bed and was hung. The four children were between 4 and 16 years old at the time of the incident; three were male and one was female. The 4-year-old was injured but did not die as a result of the incident. This child got a necktie wrapped around his neck and the bunk bed guardrail, but never tied a knot in the tie. The boy was found hanging from the bunk bed. The 7, 12, and 16 year olds died after they were accidentally hung. The incidents involved a rope, a jump rope, and an unknown ligature that were attached or caught on the upper bunk bed rails in each incident. There is not enough detail in these reports to identify whether the products were intentionally attached to the bunk bed.

Because these incidents all involved the guardrails of the upper beds of bunk beds, eliminating corner post extensions and finials would not prevent this type of incident.

#### **Incidents Involving an Unknown Part of the Bed**

Twenty-four incidents were reported to the Commission from 1990 through 2002 that did not describe the part of the bed that the child became hung from. The same three categories of ligature attachment to the bunk bed that were stated previously are discussed below.

#### Item around Child's Neck Caught on an Unknown Part of the Bunk Bed

One child's t-shirt caught on the bunk bed, but it is unknown what part of the bed the child was caught on. The incident report stated that the 11-month-old male was found hanging from his t-shirt from the top of the bunk bed frame. Although it is not reported that the child was accidentally caught as opposed to deliberately tying his t-shirt to the bed, staff assumed that the child was accidentally caught because of his age.

Because the part of the bed on which the child was hung is unknown, staff cannot assess whether eliminating bunk bed corner post extensions and finials would affect incidents such as this one.

#### Product Was Intentionally Attached to an Unknown Part of Bunk Bed

In eight incidents reported to the Commission since 1990, it was reported that a child attached a product onto a part of the bunk bed or was caught in a product that was already attached to the bunk bed, resulting in a fatal hanging incident, but it is unknown to what part of the bunk bed the product was attached. The products involved in these eight incidents include stuffed animal display nets (2), a bathrobe belt, a neck tie, a scarf, a shoestring, a purse strap, and a plastic covered bike chain. Four of the victims were female and four were male, all ranging in age from 17 months old to 12 years old. In four of the incidents, the product by which the child hanged was something that was tied on for display or assistance. The stuffed animal displays were tied to the bed for decorative purposes, the shoestring was presumably used as a step to help children get to the top bunk bed, and the necktie was being used to support an injured ankle.

Since it is unknown to what part of the bed the products were attached, staff cannot assess whether eliminating corner post extensions and finials would affect such incidents.

#### Children Were Hung From an Unknown Part of the Bunk Bed in an Unknown Manner

In 15 of the 47 total incidents, both the part of the bunk bed that the child was hung from and the manner in which the product became hung on the bed are unknown. There are more incidents with these two key factors unknown than are incidents in any of the eight categories presented previously.

The children in these 15 incidents ranged in age from 2 years old to 13 years old and all of the children were male. Four incidents involved children who received injuries after being hung from the bunk bed, but did not suffer fatal injuries. The remaining 11 children died after they became hung from the bunk bed. Products involved in the bunk bed hangings included belts (9 incidents), ropes (2 incidents), clothing, a sheet, a headband, and an electrical cord.

Since the part of the bunk bed from which the child became hung is unknown in these 15 incidents, staff cannot assess whether the elimination of bunk bed corner post extensions and finials would affect such situations.

## **Conclusions from Incident Data**

From January 1, 1990 through December 31, 2002, there have been 47 incidents reported to the Commission involving hangings from bunk beds, not including entrapment hangings. The petitioner is concerned with hangings from bunk bed corner post extensions and finials, pointing out the specific hazard of hanging from an extension or finial when clothing, accessories, or bedding become caught. Along with this specific scenario with corner post extensions, staff also found that people intentionally attach products to the corner posts of bunk beds and children can become hung during play with these attached products. There is also a portion of the data in which the means by which the child became hung is unknown, but the incidents do state that the corner post extension or finial was the part of the bunk bed from which the child became hung. Staff believes that all three scenarios would be of concern to the petitioner and that all three scenarios would be affected if corner post extensions and finials were eliminated from bunk beds. In total, four of the 47 incidents reported to the Commission involved children who were hung from the corner post extensions or finials of the bunk beds. In an additional six incidents, it is known that the corner post assembly of the bunk bed was involved but the specific area of the corner post involved is unknown.

While eliminating or limiting the height of the extensions and finials would affect situations similar to at least four of these incidents, the data show that children can hang from other parts of the bunk bed when accidentally caught by something around their neck and when an object is intentionally attached to other parts of the beds. These situations can and have led to both fatal and non-fatal hangings over the past 13 years. Thirteen of the 47 incidents involve children becoming hung on parts of the bed other than a section of the corner post assembly. In 24 incidents, the part of the bunk bed that the child was hung from is unknown.

## **Petitioner's Incidents**

As previously mentioned, the petitioner cited at least 14 incidents in which children died in bunk bed hanging incidents associated with finials since 1993. The petitioner included a list of 20 incidents in a table titled "Hanging Deaths/Injuries Resulting from Bunk Bed Finials or Corner Posts, 1990-Present."

Staff reviewed the 20 incidents in the petitioner's table to verify that they involved a bunk bed corner post, corner post extension, or finial as well as any other information presented in the table. Each of the 20 incidents is listed in Table 3 below, with correction information, whether the incident is included in the count of 47 incidents that staff references, and an explanation of why the incident is not included in staff's count if that is the case.

**Table 3. Incidents Included in Petition.**

Document Number	Date	Corrections Necessary	Included in Staff Count?	Reason for Excluding Incident from Staff Count
9320013318	7/31/93	The part of the bunk bed on which the ligature was attached is unknown.	Yes	
9453431525	11/5/94	None	Yes	
9506015263	2/23/95	None	Yes	
9549003956	4/22/95	None	Yes	
X9621434A	11/5/95	The victim is 15 years old; the petitioner states the age as 15 months old.	No	The medical examiner stated that the death was accidental but included a statement that the victim may have been experimenting with auto-eroticism.
F9720006A	12/28/96	The part of the bunk bed on which the ligature was attached is unknown.	Yes	
X9730940A	3/5/97	None	Yes	
970409CNE5111	4/8/97	None	Yes	
9717065641	11/12/97	Ligature was secured to the top rail of the bunk bed; the petitioner stated the ligature was looped over the bedpost.	Yes	
980625HCC6878	5/1/98	The part of the bunk bed on which the ligature was attached is unknown.	Yes	
010119CCC0239	1/16/99	The ligature was hung from the horizontal member of the footboard; the petitioner stated the ligature was hanging from the bedpost.	Yes	
9919013407	6/21/99	None	Yes	
000725HCC3346	6/23/99	The ligature was tucked under the mattress and caught between the guardrail and footboard; the petitioner states the ligature was caught on the corner post.	Yes	
990728HWE5020	7/12/99	The ligature was wrapped around the mattress support beam of the upper bed; the petitioner stated the ligature was looped over the bedpost.	Yes	
000317HCC0493	8/2/99	None	No	The death was ruled a suicide.
C0030007B	8/18/99	None	Yes	
9995333284	9/29/99	None	Yes	

**Table 3, continued.**

Document Number	Date	Corrections Necessary	Included in Staff Count?	Reason for Excluding Incident from Staff Count
X0030824A	1/23/00	The part of the bunk bed on which the ligature was attached is unknown.	Yes	
010509CWE5010	5/3/01	None	Yes	
UNKNOWN	2/12/02		No	Staff cannot find an incident involving a bunk bed hanging death on this date in the databases. Therefore staff did not include the incident in the memorandum.

## Appendix A

### Search Criteria for Bunk Bed Incident Data

Database	Search Dates	Product Codes	Disposition
NEISS (National Electronic Injury Surveillance System)	Treatment dates 1/1/90 – 12/31/02	661 Bunk beds 4076 Bed, not specified	2 Treated and transferred 4 Treated and admitted 5 Treated and held for observation 6 Left without being seen 8 Fatality 9 Unknown*
DTHS (Death Certificate File)	Date of death 1/1/90 – 12/31/02	661 Bunk beds 4076 Bed, not specified	Not Applicable
IPII (Incident and Potential Incident Information File)	Incident date 1/1/90 – 12/31/02	661 Bunk beds 4076 Bed, not specified	All dispositions
INDP (In-Depth Investigation File)	Incident date 1/1/90 – 12/31/02	661 Bunk beds 4076 Bed, not specified	All dispositions

\* NEISS cases with disposition 1 (treated and released) were reviewed from 1990 through 1995. This review consisted of 6,036 cases and did not reveal any bunk bed hanging incidents. Because no incidents were found, staff did not review the treated and released cases for 1996 through 2002 (total of 9,660 cases).



# Appendix B

The following table contains incident information for the 47 bunk bed-relating hanging incidents discussed in the Hazards Analysis Memorandum.

Document Number	Death/ Injury	Incident Date	Date of Death	Age/Sex	Part of Bed Child Became Hung From	Product Involved	Manner by Which Child was Hung	Summary
910205CCC2231 9039048835	death	7/22/90	7/22/90	9/F	Corner post	Sheet	Unknown	The victim and her 6-year-old sister were making tents over their bunk beds and the victim allegedly wrapped a sheet around herself as an evening gown when she either jumped or fell from the top of the bunk bed. The sheet got caught on a corner post and she accidentally hung herself.
910204CCC2230 9039060596	death	8/1/90	8/1/90	13/M	Corner post	Rope	Intentionally attached product	The victim was found hanging from the upper corner post of the bunk bed from a rope which appeared to have been tied by the victim. Coroner feels death was self-inflicted but accidental.
9148017226	death	1/19/91	1/19/91	8/M	Other	bathrobe belt	Intentionally attached product	The victim tied a bathrobe belt around his bunk bed rail and around his throat. Pressure on his throat rendered him unconscious and he slumped over in bed, feet still on floor.
9106181180	death	11/18/91	11/21/91	12/M	Unknown	Rope	Unknown	The victim was hanged with a rope attached to the upper bunk bed.
N9312640A	death	9/13/92	9/13/92	11 mos/M	Unknown	T-shirt	Caught on bed	The victim was found hanging from his t-shirt from the top of the bunk bed frame. The part of the frame is unknown.
930209CWE5004 9349001036	death	1/21/93	1/22/93	6/M	Other	Webbed belt	Intentionally attached product	The victim's mother entered the bedroom and found the victim hanging from the top bunk bed. A noose, using a webbed belt, had been fashioned and tied to the middle bar of the side guardrail and the belt came up over the top rail.
940204HCC1138 9342036315	death	4/10/93	4/10/93	9/F	Unknown	Stuffed animal display	Intentionally attached product	The victim was playing in her bedroom with a friend and accidentally hung herself by getting a plastic mesh hammock looped around her neck. The friend was scared and didn't say anything for a while.
9329011033	death	5/1/93	5/1/93	12/M	Unknown	Belt	Unknown	The victim accidentally hung himself with a belt that was attached to a bunk bed.
9306071743	death	5/26/93	5/26/93	16/M	Other	Rope	Unknown	The victim hanged himself with a rope that was attached to upper bunk bed rail.
9320013318	death	7/31/93	7/31/93	12/M	Unknown	Karate Belt	Unknown	The victim was found with a karate belt around his neck and attached to the bunk bed.
9318049323	death	11/9/93	11/11/93	13/M	Unknown	Rope	Unknown	The victim was found in the bedroom with a rope around the upper bunk bed and then around his neck.

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H9490075A	injury	7/1/94		5/F	Other	Nightgown	Caught on bed	The victim was bruised after a hanging by her neck when her nightgown got caught on the top of the ladder on her metal bed.
9453022004	death	8/22/94	8/22/94	2/M	Corner post	Unknown	Unknown	The victim hung himself from the foot of double bunk bed post.
G9490127A	death	9/8/94	9/8/94	7/F	Other	Jump rope	Unknown	The victim fatally hanged herself with a jump rope caught on an upper bunk bed rail in her bedroom.
9453431525	death	11/5/94	11/5/94	12/M	Corner post	Unknown	Unknown	The victim was found suspended from the corner post of the upper bunk - hanging by ligature around neck.
9505000902	death	1/17/95	1/17/95	12/M	Unknown	Bedding	Unknown	Accidentally hung with bedding from a bunk bed.
9506015263	death	2/21/95	2/23/95	10/M	Corner post	Shirt	Intentionally attached product	The victim tied a shirt to a bunk bed post, put his head in the shirt and while playing, accidentally hung himself.
9549003956	death	4/22/95	4/22/95	7/F	Corner post extension	Belt	Intentionally attached product	The child had looped a belt over the bunk corner post extension, put it around her neck and was swinging back and forth.
F9580142A	death	8/8/95	8/8/95	4/M	Unknown	bathrobe belt	Unknown	Victim accidentally hung himself from the top of a bunk bed frame with a cloth belt from his bathrobe. The cloth belt was wrapped, not tied, around boy's neck and top of bunk bed frame. The part of the frame is unknown.
NEISS - 92480999	injury	9/7/95		9/M	Unknown	Belt	Unknown	The victim accidentally hung himself with a belt from a bunk bed while playing with his younger brother; asphyxiation by hanging. Patient was treated and admitted for hospitalization.
X95B0791A	injury	11/14/95		5/M	Unknown	Head band	Unknown	The victim hanged when he accidentally hung himself with a headband that was around his neck on his bunk bed.
H96B0296A	injury	11/22/96		4/M	Other	Shirt	Caught on bed	The bottom of the back of a boy's shirt got caught on the ladder of the bunk bed. This caused him to hang by his shirt. He received a small laceration to his nose.
F9720006A	death	12/28/96	12/28/96	8/M	Unknown	Cloth belt	Unknown	The victim was playing on his bunk bed when he became entangled in a cloth belt that he was also playing with. He was found hanging from the belt from a bunk bed.
X9730940A	death	3/5/97	3/5/97	11/M	Corner post	Bedding	Unknown	The victim was found unresponsive and hanging with bedding around his neck and around a bunk bed post at his home.

Document Number	Death/ Injury	Incident Date	Date of Death	Age/Sex	Part of Bed Child Became Hung From	Product Involved	Manner by Which Child was Hung	Summary
970409CNE5111 N9740159A N9740248A X9822142C	death	4/8/97	4/8/97	5/F	Corner post extension	bathrobe belt	Unknown	Victim's grandmother found the victim in her bedroom with a bathrobe belt around her neck and around the corner post extension of the bunk bed. The girl was hanging with her toes barely touching the floor. The bathrobe belt was in a continuous loop, tied together at both ends.
970903HWE4144	injury	8/4/97		4/M	Other	Neck tie	Unknown	A boy got his father's neck tie and wrapped it around his neck, but did not put a knot in the tie. At some point the tie got wrapped around the guardrail and the child fell off the upper bed. He was found hanging from the bunk bed with the tie around his neck. Both end of the tie were wrapped around the boy's neck.
9717065641	death	11/12/97	11/12/97	11/M	Other	Belt	Intentionally attached product	The victim was playing in the top bunk and fell. He was hanging by the neck; a belt was placed around the neck and secured to the top rail of the bunk bed.
980625HCC6878 X9863924A 9806090211	death	5/1/98	5/2/98	18 mos/M	Unknown	Mesh-type man's tie	Intentionally attached product	A stretchable mesh man's necktie was attached to a support bar rising up from the floor which continued to the top bunk. The victim was found hanging by his neck in the looped necktie.
NEISS - 854688	injury	10/21/98		2/M	Unknown	Sheet	Unknown	The patient was found hanging from the bunk bed with a sheet wrapped around his neck. The patient was treated and admitted for hospitalization.
9910000258	death	1/10/99	1/12/99	12/F	Unknown	Scarf	Intentionally attached product	The victim was found hanging by a scarf which was tied to the top bunk bed.
010119CCC0239 9913005340	death	1/16/99	1/16/99	5/M	Other	Stuffed animal display	Intentionally attached product	The victim is believed to have been attempting to dive into the lower bunk bed from the end and caught his head in the product. The stuffed animal display was hung from a horizontal member of footboard.
9918011256	death	3/24/99	3/24/99	12/M	Other	Unknown	Unknown	A ligature was attached to the top rail of bunk bed then to the victim's throat.
01022HCC0314 9913029141	death	5/15/99	5/15/99	2/F	Unknown	Stuffed animal display	Intentionally attached product	The victim was playing in her room for a while. Her father found her hanging from the end of the upper bunk bed by the piece of cloth twisted around her neck.
9919013407	death	6/21/99	6/21/99	11/M	Unknown	Belt	Unknown	The victim's father found the victim hanging by a belt from the top of his bunk bed.
00725HCC3346 9906095361	death	6/23/99	6/23/99	10/M	Other	Bedding	Caught on bed	The boy was asphyxiated by a blanket wrapped around his neck when he fell or jumped from a bunk bed. The blanket stayed tucked under the mattress and also caught in between to bars on the bed.

Document Number	Death/ Injury	Incident Date	Date of Death	Age/Sex	Part of Bed Child Became Hung From	Product Involved	Manner by Which Child was Hung	Summary
99072SHWE5020 F9975019A	death	7/12/99	7/12/99	7/F	Other	Purse strap	Intentionally attached product	The girl was pretending to be a dog when she wrapped a purse strap around her neck as a collar/leash and tied the other end around an upper bunk bed.
C0030007B 991208CCC0171	death	8/16/99	8/18/99	2/M	Corner post extension	Water bottle	Caught on bed	The victim climbed onto an upper bunk bed and put a strap attached to a water bottle around his neck. In climbing down, the strap caught on a corner post extension and the child was hung.
9995333284	death	9/29/99	9/29/99	8/M	Unknown	Robe belt	Unknown	The victim was playing in his room with a robe sash and hung himself on the bunk bed.
X0030824A	death	1/23/00	1/23/00	9/M	Unknown	Bathrobe belt	Intentionally attached product	The victim hung himself by a bathrobe tie tied to a bunk bed part by accident. The mother found the boy with the tie around his neck.
000215HCC3160 H0020124A	injury	2/1/00		7/M	Other	Walkie talkie strap	Caught on bed	The victim and his brother were playing on the bunk bed with walkie-talkies that had two straps. The victim had put one strap around his head as a bandana and tried to step off of the top bunk onto the bottom bunk. The free end of the strap got caught on the railing and the loop around the boy's head slipped to his neck. He fell and the strap tightened and the boy's feet couldn't touch the floor. He lost consciousness and was taken to the hospital.
NEISS - 1209931	injury	4/29/00		13/M	Unknown	Belt	Unknown	The victim was accidentally hanged with a belt when he fell off of a bunk bed. He was treated and admitted for hospitalization.
0121016825	death	2/14/01	2/14/01	11/M	Unknown	Belt	Unknown	The victim was found with a belt around his neck hung from the upper bunk bed.
010509CWE5010 F0155009A	death	5/3/01	5/3/01	4/M	Corner post extension	Purse strap	Intentionally attached product	One child in the family hangs a backpack purse on the corner post extension of the bunk bed. The victim, who liked to climb on the ladder of the bed, became entangled in the straps of the backpack purse. One strap was around the child's neck and the other strap was hooked on the bunk bed corner post.
X0210028A	death	10/9/01	10/9/01	17 mos/M	Unknown	Shoestring	Intentionally attached product	The victim was found by his siblings from a shoestring that had been tied to form a loop. The shoestring was under the top bunk and the deceased's siblings presumably would use this to reach the top bunk as a step.
G01B0173A	death	11/26/01	11/26/01	7/F	Unknown	Purse strap	Intentionally attached product	The victim accidentally hung herself at home. Police reports show that victim tied a purse strap to the top of a bunk bed.

Document Number	Death/ Injury	Incident Date	Date of Death	Age/Sex	Part of Bed Child Became Hung From	Product Involved	Manner by Which Child was Hung	Summary
0206003670	death	2/23/02	2/23/02	7/M	Unknown	Electrical cord	Unknown	The victim was found hanging from a bunk bed by an electrical cord.
X0294587A	death	4/20/02	4/20/02	11/M	Unknown	Plastic covered bike chain	Intentionally attached product	A father sent son to his room and went to check on him 15 minutes later. The father found the victim hanging in a sitting position on the lower bunk of a metal frame bunk bed. The ligature was the bike chain.