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Consumer Federation of America

REPORT AND MODEL LAW

ON

PUBLIC PLAY EQUIPMENT AND AREAS

Melanie L. Morrison

and

Mary Ellen Fise

January, 1992

1424 16th Street, N.W., Suite 604 • Washington, D.C. 20036 • (202) 387-6121

This maximum slope for ramps is consistent with BOCA National Building Codes. It is not, however, intended to address ramps designed for disabled access.

5.1.2.2 Width

- Ramps intended for single-file use shall be at least 12 inches wide.*
- Ramps intended for use by more than one child at a time shall be at least 30 inches wide.*

The minimum width for single-file ramps is based on the shoulder breadth of the largest user; the shoulder breadth of a 95th percentile 5-year-old is 11.5 inches. The minimum width for ramps for use by more than one child at a time is based on twice the shoulder breadth of the largest user plus an allowance for space between children.

5.1.3 STAIRWAYS, STEP LADDERS, AND RUNG LADDERS

Stairways have steps intended primarily for foot support. Step ladders also have steps, but due to their steeper slopes, are intended to require foot support as well as a limited degree of hand support -- there is more climbing involved when negotiating a step ladder than a stairway. Rung ladders require even more climbing, and the rungs are intended to be used for both hand and foot support.

5.1.3.1 All steps and rungs shall be securely attached to their side supports and shall not turn or wobble when stepped on or grasped.

5.1.3.2 All steps and rungs shall be horizontal within a tolerance of ± 2 degrees.

5.1.3.3 When risers on stairways or stepladders are closed, their design shall allow for drainage and prevent the accumulation of debris.* Drainage holes shall preclude finger entrapment and pinching.

5.1.3.4 All steps and rungs on stairways and ladders shall be evenly spaced. This requirement also applies to the distance between the top step or rung and the underside of the platform it serves.*

5.1.3.5 Access Slope

- Stairways shall have slopes no greater than 50 degrees.*
- Step ladders shall have slopes between 50 and 75 degrees.*
- Rung ladders shall have slopes between 75 and 90 degrees.*

5.1.3.6 Vertical Rise -- Vertical rise is the tread-to-tread distance between two consecutive steps or rungs. The same requirements also apply to the distance between the top step or rung and the underside of the platform it serves.

On stairways and step ladders, vertical rise shall not exceed 9 inches. Unless the distance between interior opposing surfaces of consecutive steps is less than 3.5 inches, all risers shall be closed to conform with the entrapment criteria (see Section 4.7.4).*

On rung ladders, vertical rise shall not be greater than 12 inches. To satisfy the entrapment criteria (see Section 4.7.4) and because the design of rung ladders does not allow closed risers, the distance between interior opposing surfaces of consecutive rungs shall not be between 3.5 and 9 inches.*

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

RUE DE STASSART, 36 - B-1050 BRUXELLES - Tél +32 2 519.68.11 - Fax +32 2 519.68.19 - X.400: C=BE, A=RTT, P=CENCLCBEL, S=CEN

ENQUIRY -	TO THE MEMBERS OF CEN
ENQUETE - prEN 1176-1	AUX MEMBRES DU CEN
UMFRAGE -	AN DIE MITGLIEDER DES CEN
Target date :	
Date cible : 1994-04-13	EN 1176-1 [illegible]
Termin	Work Item : [illegible]
	1993-10-13

Playground equipment - Part 1: General safety requirements and test methods

Dear Member,

At the request of the Secretariat of CEN/TC 136 (DIN) we are pleased to submit to you for ENQUIRY the three language versions of the above-mentioned draft European Standard.

We invite you to examine these documents and to address your agreement and/or comments with the form enclosed to the responsible TC secrétariat with a copy to the Central Secretariat before the target date.

Yours faithfully,

Cher Membre,

A la demande du Secretariat du CEN/TC 136 (DIN) nous avons le plaisir de vous soumettre pour ENQUETE les trois versions du projet de Norme Europeenne ci-dessus.

Nous vous invitons à examiner ces documents et a faire parvenir votre accord et/ou commentaires ainsi que le formulaire ci-joint au secrétariat du TC responsable avec copie au Secretariat Central avant la date limite.

Veuillez agreer, cher membre, l'expression de nos sentiments distingues

Sehr geehrtes Mitglied

auf Antrag des Sekretariates des CEN/TC 136 (DIN) übersenden wir Ihnen zur UMFRAGE die drei Sprachfassungen des o. a. Europäischen Norm-Entwurfes.

Wir bitten Sie diese Dokumente zu prüfen Ihre Zustimmung und/oder Kommentare sowie die beiliegenden Stimmzettel noch vor dem Endtermin an das zuständige TC-Sekretariat mit einer Kopie an das Zentralsekretariat zu schicken.

Mit freundlichen Grüßen

J. SCHOENERMARK
Division Manager

Enclosures

GDJ
JANE

P115
[illegible] 1993

3.11 crushing point: A place where parts of the equipment are moving against each other, or against a fixed area so that persons, or parts of their body, may be crushed.

3.12 shearing point: A place where part of the equipment moves past a fixed or other moving part, or past a fixed area so that persons, or parts of their body may be cut.

3.13 ladder: A means of access incorporating rungs or steps on which a user may ascend or descend.

NOTE: A ladder is normally used between 60° and 90° (see figure 1).

3.14 stairs: A means of access incorporating steps on which a user may ascend or descend.

NOTE: Stairs are normally used between 15° and 60° (see figure 2).

3.15 ramp: A means of access incorporating an inclined surface on which a user may ascend or descend.

NOTE: A ramp is normally used between 0° and 38° (see figure 3).

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BCI Burke Company, Inc.

June 2, 1997

Mr. John D. Preston, P.E.
Directorate for Engineering Sciences
U. S. CONSUMER PRODUCT SAFETY COMMISSION
Washington, D.C. 20207

Dear Mr. Preston:

We here at BCI Burke have reviewed the proposed draft of the **revised CPSC Handbook for Public Playground Safety** that you sent to us in May. The following are our comments on the suggested modifications.

- **GENERAL:** With the past painstaking years of effort in developing the ASTM Standard, it seems to be counterproductive to update the CPSC document with suggestions that are at odds with this major industry endeavor. This can only lead to confusion with not only the manufacturers but the public as well.

- **4.3.1 - 8 Feet Swing Hanger Maximum Height**: Burke has been producing 10 foot high swing hangers as well as 8-foot for a number of years with no discriminating injury experience between the two heights. We would like to see the statistics that validate the increase in injuries on a 10-foot high swing versus an 8-foot swing. In addition is seems somewhat unreasonable to exempt "totally enclosed equipment" from the max height constraint. As we all know, "Kids will be Kids" and climbing up the outside of the equipment is sensible expectation. Climbing up the outside to the top of an "totally enclosed play structure" is just as likely as climbing to the top of a 10-foot swing beam.

- **4.5 - Loose fill - Shredded Tires:** Shredded tires are listed as an acceptable material but no test data is available in Table 1.

- **5.1.1 - Fall Zone Overlap:** For stationary play events exceeding 30 inches, the minimum distance between structures is 9 feet as compared with 12 feet for ASTM (only one example of CPSC / ASTM conflict. Varying Handrail Height between age groups is another).

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- **11.2 - Guardrails and Protective Barriers:** The change from horizontal to vertical is somewhat confusing. Since guardrails are by nature generally horizontal, it maybe appropriate to change horizontal rails to vertical infill.

- **11.6 - 15 inch opening for Guardrails and Protective Barriers:** We have a real problem with this size opening for events that are accessing the platform. For instance, Burke has several climbing events that utilize the entire face of the deck. A fifteen-inch opening would severely limit access to the deck as well as create potential struggles between children to enter the small opening. These conflicts could result in falls to one or more of the users. Fifteen inches also limits the usage to weight challenged kids as well as supervising adults who need quick access to events to rescue children. We interpret the exemption statement **11.3**

  > *"An elevated surface is exempt from these recommendations if a guardrail or protective barrier would interfere with the intended use of the equipment; this includes most climbing equipment*, and platforms that are layered so that fall height does not exceed 20 inches on equipment intended for preschool-age children or 30 inches on equipment intended for school age children"

  to mean that our full deck width climbing equipment would not be required to meet the fifteen-inch opening.

- **12.1.5 - Horizontal Ladders and overhead rings:** More conflicts with ASTM in Rung Spacing (12 inches for preschool-Age children versus 15 max in ASTM) and max height of 78 inches for School-Age Children versus 84 in ASTM. Eliminating the use of rungs for landing and take-offs is an interesting complication. For a freestanding event, do we let the kids drag their feet or use decks for both ends? If we use decks, what is the minimum size deck – a 2" wide flat designated play surface?

We appreciate the opportunity to comment on these proposed changes. If you need clarification on any of these points or need additional input, please contact me. We look forward to helping shape the safety of playgrounds while maintaining challenging events for our nation's children.

Sincerely,

Richard A. Waugh

Richard A. Waugh, PE
Vice President - Operations

ALBUQUERQUE PUBLIC SCHOOLS

725 UNIVERSITY BOULEVARD, S.E.
P. O. BOX 25704
ALBUQUERQUE, NEW MEXICO 87125-0704

PETER P. HOROSCHAK, Ed.D.
SUPERINTENDENT

MIKE VIGIL
CHIEF FINANCIAL OFFICER
DENNIS R. ROBINSON
DIRECTOR OF RISK MANAGEMENT

June 9, 1997

Mr. John D. Preston, P.E.
Directorate for Engineering Sciences
U. S. Consumer Product Safety Commission
Washington, D.C. 20207

Dear Mr. Preston,

Thank you for the opportunity to comment on the revised CPSC Handbook for Public Playground Safety. The comments are offered:

1. Section 1. Introduction. Third paragraph, last sentence reads, "Equipment components intended solely for the handicapped and modified to accommodate such users are also not covered by these guidelines."
   Recommend adding a statement to the effect that they still must otherwise comply with these guidelines.
   Justification: For example, the platform swings designed to hold a wheelchair, can be used by other children and constitute a hazard similar to the metal swing seats referred to in the new section 12.6.2.
2. Section 5.1.1. Stationary Equipment (excluding slides). The second paragraph is a little confusing as written.
   Recommend adding a third sentence to read, "If adjacent play events are both over 30 inches, the minimum distance between the structures should be 12 feet."
   Justification: This wording is in concert with the other two criteria, and makes it clear what the minimum distance should be for all three possibilities.
3. Section 11.6. Other Design Considerations for Guardrails and Protective Barriers. First paragraph, second sentence reads, "Except for openings providing access to stairs, ramps and upper body equipment (e.g., horizontal ladders, overhead rings and track rides), the opening width providing access to other play events should not exceed 15 inches."
   Recommend modifying to read, "Except for openings providing access to <u>slides</u>, stairs, ramps and upper body equipment (e.g., horizontal ladders, overhead rings and track rides), the opening width providing access to other play events should not exceed 15 inches."
   Justification: The minimum slide chute width for children 5-12 years of age is 16 inches according to ASTM F 1487-95 Section 8.5.4.3.
4. Section 12.1.2. Design Considerations. Second paragraph was deleted.
   Recommend keeping the paragraph.
   Justification: While conducting playground safety audits of the Albuquerque Public Schools,

several teachers, coaches, and nurses pointed out a particular piece of equipment that looks like a cube frame, saying it was dangerous and the children were often getting hurt on it. Using the 1994 CPSC Handbook as a guide, we have removed those pieces from our playgrounds. The ASTM F 1487-95 does not address this issue. If this paragraph is taken out of the CPSC Handbook, the "official" justification to remove this equipment will be gone, and children will continue to get injured.

5. Section 12.1.3. Climbers With Non-Rigid Components. Second paragraph, last sentence reads, "When one end is connected to the ground, the anchoring devices should be below the level of the playing surface.
   Recommend changing to read, "When one end is connected to the ground, the upper anchoring device should be below the level of the playing surface, and the lower anchoring devices should be below the level of the protective surface."
   Justification: The current wording leaves open for interpretation whether the lower anchoring device must be below the playing surface (defined in ASTM F 1487-95 as, "any elevated surface for standing, walking, sitting ..."), or below the protective surface. The lower anchor device must be below the protective surface to protect a child from falling onto the exposed anchor an injuring themselves, as we have had occur on one of our playgrounds.
6. Section 12.1.5. Horizontal Ladders and Overhead Rings. The maximum height for school age children is 78 inches. ASTM F 1487-95 lists the maximum height as 84 inches. Is ASTM going to change their maximum height to 78 inches?
7. 12.1.8. Balance Beams. Maximum height listed as 12 inches from the playing surface. Recommend changing maximum height to conform to ASTM F 1487-95 of 12 inches for children ages 2-5 and 16 inches for children ages 5-12.
   Justification: Albuquerque Public Schools has numerous balance beams (we have 78 elementary schools) at the 16 inch height in our 5-12 year old playgrounds. We have yet to have a child injured by striking the beam between the child's legs.

Sincerely,

David J. Thorn, C.P.S.I.
Loss Control Manager

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Centers for Disease Control
and Prevention (CDC)
Atlanta GA 30333

#10

June 18, 1997

John D. Preston, P.E.
Directorate for Engineering Services
U.S. Consumer Product Safety Commission
Washington, DC 20207

Dear Mr. ~~Preston~~: John

Thank you for the opportunity to review the draft revised CPSC Handbook for Public Playground Safety. A few members of my staff and I have examined the document, and it looks good--congratulations! We would like to suggest one change:

> Page 5, section 4.3.1 - The recommended maximum accessible height for school-aged children reads "no more than 8 feet." Table 1 (page 7) provides critical drop height for varying surfaces and depths. Most of these heights are in the 5-6 foot range for typical depths used in playgrounds. This means that the "8 foot" figure allows for potential drop heights well above the performance expected by the typical undersurface. As you well know, undersurfaces are usually not maintained at the desired depth. Since falls are the major cause of the more serious injuries, and since the higher the fall the greater the forces involved, we recommend either a 6 foot maximum height, or state 6 feet as the maximum for the undersurface minus some fudge factor (to allow for poor maintenance).

If you have any questions, please feel free to call me or Jeffrey J. Sacks, M.D., M.P.H. in the Division (770/488-4652). Thanks again for the opportunity to attend the meeting and to review the revisions.

Sincerely,

Christine

Christine M. Branche, Ph.D.
Director
Division of Unintentional
Injury Prevention
National Center for Injury
Prevention and Control

CDC 50

cc:
Jeffrey J. Sacks, M.D., M.P.H.
Tim Groza

National SAFE KIDS Campaign

1301 Pennsylvania Avenue, N.W.
Suite 1000
Washington, D.C. 20004-1707
(202) 662-0600
(202) 393-2072 Fax

Honorary Chairs
Vice President Al Gore
and Tipper Gore
Chairman
C. Everett Koop, M.D.
President
Martin R. Eichelberger, M.D.
Executive Director
Heather Paul, Ph.D.

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June 20, 1997

John D. Preston, P.E.
Directorate for Engineering Services
United States Consumer Product Safety Commission
Washington, DC 20207

Dear Mr. Preston,

On behalf of the National SAFE KIDS Campaign, I commend and thank the Consumer Product Safety Commission for its work updating and revising the Commission's *Handbook for Public Playground Safety*. Your efforts to improve the safety of our nation's public playgrounds will assist us in our efforts to prevent childhood injury and keep our nation's children safe.

Although the Campaign is not qualified to comment on the technical aspects of the proposed guidelines, we are confident that the Commission has kept, and will continue to keep, children's safety in mind. We will make every effort to support the Commission's work by distributing the final guidelines to our army of more than 225 State and Local SAFE KIDS Coalitions to use in their community. We believe these guidelines will improve the safety of playground equipment, design and maintenance; thereby making our playgrounds a safer place for our children.

Sincerely,

Heather Paul, Ph.D.
Executive Director

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A program of Children's National Medical Center Washington, D.C.

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#12

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CLIMBERS, SPRING RIDERS & WHIRLS
WATER SLIDES & POOL SLIDES

July 19, 1996

Mr. John Preston, P. E.
Directorate for Engineering Sciences
U. S. Consumer Product Safety Commission
4330 East West Highway, Suite 611
Bethesda, MD 20814-4408

Dear Mr. Preston:

Both Bob Stluka and I have thoroughly reviewed your proposed changes in the Handbook draft and have given them considerable thought. We agree that we shouldn't make suggestions without good rationale and therefore our response is quite lengthy. Attached is a document entitled "Miracle Recreation's Position on the CPSC 1997 Draft Revision" that details our opinions, recommendations and rationale on each of the items with which we have concerns.

Please give this feedback your serious consideration. If you have any questions regarding this document or any of our positions or rationale, please contact Bob or myself.

Sincerely,
MIRACLE RECREATION EQUIPMENT COMPANY

Jack E. Gonzenbach, P.E.

Jack E. Gonzenbach, P. E.
Vice President

MIRACLE RECREATION EQUIPMENT COMPANY
HIGHWAY 60 & BRIDLE LANE • P.O. BOX 420
MONETT, MISSOURI 65708 USA
TOLL FREE: 1-800-523-4202
PHONE: 417-235-6917 • FAX: 417-235-6816
WORLD WIDE WEB: http://www.miracle-recreation.com
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#12

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MIRACLE
RECREATION EQUIPMENT COMPANY
A Division Of PLAYPOWER, INC.

July 19, 1996

Mr. John Preston, P. E.
Directorate for Engineering Sciences
U. S. Consumer Product Safety Commission
4330 East West Highway, Suite 611
Bethesda, MD 20814-4408

Dear Mr. Preston:

Both Bob Stluka and I have thoroughly reviewed your proposed changes in the Handbook draft and have given them considerable thought. We agree that we shouldn't make suggestions without good rationale and therefore our response is quite lengthy. Attached is a document entitled "Miracle Recreation's Position on the CPSC 1997 Draft Revision" that details our opinions, recommendations and rationale on each of the items with which we have concerns.

Please give this feedback your serious consideration. If you have any questions regarding this document or any of our positions or rationale, please contact Bob or myself.

Sincerely,
MIRACLE RECREATION EQUIPMENT COMPANY

Jack E. Gonzenbach, P.E.

Jack E. Gonzenbach, P. E.
Vice President

MIRACLE
RECREATION EQUIPMENT COMPANY

Miracle Recreation's Position on the CPSC 1997 Draft Revision

The following items are the discussions of issues and positions that Miracle Recreation takes with certain changes that are being proposed in the CPSC 1997 Draft Revision.

Section 4.3.1 *Recommended Maximum Accessible Height for School Age Children*

The Draft states that the highest accessible part of the equipment is to be eight (8) feet. The issue is not how high the equipment is, but rather making sure that there is impact absorbing surfacing under and around the equipment of a type and depth appropriate for the equipment. A five (5) foot high deck without proper depth and type of safety surfacing would be much more hazardous than a ten (10) foot high deck with the proper depth and type of safety surfacing.

Both the draft and the current edition (1994) of the Handbook show in the table of Critical Height of Tested Materials that there are many surfacing materials of various types and depths that provide the necessary fall protection for equipment higher that eight (8) feet, **using the criteria for critical height that is listed in the handbook**, and in the ASTM F1292 standard for playground surfacing. We feel very strongly that it is inappropriate to arbitrarily limit the height of equipment when the CPSC's own tests have shown that proper protective surfacing can be provided and maintained under and around tall play structures.

Based upon the CPSC Handbook recommendation that protective surfacing meet ASTM F1292 for the maximum G force of 200 and HIC criteria of 1,000, **the height of the fall becomes immaterial**. A fall from a short height and a fall from a very tall height would have the same results if the proper protective surfacing is provided under and around the both pieces of equipment.

The ASTM Public Playground Safety Standard F1487 contains no maximum height limitations for slides or platforms. It was logically and correctly concluded that as long as there is the proper type and depth of safety surfacing under and around the equipment, no maximum height would be necessary to prevent serious injury. It is important to realize that **this standard was developed not by an isolated individual or individuals with a particular agenda, but by a large and diverse group of individuals representing all perspectives on the issue**. These included consumer advocates, experts in child development, experts in playground safety and design, representatives from the Consumer Product Safety Commission and play equipment manufacturers with hundreds of

years of experience between them. **The fact that this distinguished group carefully and objectively looked at the evidence and determined that height limitations were not necessary should not be ignored.**

Miracle Recreation has manufactured tall slides that have the highest accessible part ten (10) to twelve (12) feet tall for over twenty five (25) years. We have not received any reports of injuries due to falls from these slides onto safety surfacing of the proper type and depth. With thousands of these slides in use every day for over twenty five years, Miracle equipment alone has conservatively experienced almost ten billion play experiences on equipment of this type. If there were a real hazard involved, both the Company and the CPSC would have been inundated with injury reports and lawsuits.

Part of the rationale used by the CPSC in setting this arbitrary eight (8) foot maximum height is a study from New Zealand that purports to show that injuries increased as equipment height increased. Unfortunately, this study is not valid. Upon close examination, it was found that other critical factors were ignored, **such as the presence and adequacy of safety surfacing**, when making the link between the number and severity of injuries and the equipment height.

Another part of the rationale stated that the recommendations were based on "inputs from interested parties received during and after a playground safety roundtable meeting held in October 1996...". At this meeting several opinions were incorrectly stated as fact. Among these were that there was **no play value to be gained from equipment height. This is absolutely incorrect**. You don't have to have a Ph.D. in child development to see that the first place the children go on a play structure is the tall slide or tall deck. Children have been fascinated and excited by height as evidenced by the first child to climb a tree. Many experts contend that exposure to the height sensation is critical to a child's development.

The draft states that equipment that is totally enclosed may be higher than eight (8) feet tall. We feel that totally enclosing a structure will actually encourage children to climb on the outside, or top, of a structure.

RECOMMENDATION: Remove these arbitrary height limitations from the proposed list of changes to the Handbook.

Section 4.3.1 *Recommended Maximum Accessible Height for Pre-School Age Children*
A combination of requirements in the draft has caused the following apparent error. On a pre-school play unit, guardrails cannot be used on a platform if the platform is greater than 19 inches in height. This is due to the following draft requirements:

1. Section 4.3.1 states that for pre-school age children, the maximum accessible part of the equipment should be no more than four (4) feet above the protective surface.
2. Section 4.3 states that if guardrails are used around a platform, then the top of the guardrail becomes the highest accessible part of the equipment.
3. Section 11.3 states that for pre-school age children, a guardrail is acceptable for decks greater than 20 inches but not over 30 inches in height.
4. Section 11.4 states that a guardrail for pre-school age children must be at least 29 inches high.

The result is that a 20 inch high platform for pre-school age children that uses the recommended 29 inch high guardrail has a maximum accessible height of 49 inches. This 49 inch height is not allowed per section 4.3.1 which requires a maximum height of 48 inches for pre-school age equipment. In fact, no platform between 20 and 30 inches high surrounded by guardrails can comply with the maximum accessible height requirement.

RECOMENDATION: It is a violation of draft section 4.3.1 (maximum accessible heights) if a platform for pre-school age children has guardrails that comply with section 11.3 (guardrails). Section 4.3.1 must be modified to allow guardrails on pre-school age platforms up to 30 inches in height.

Section 12.1.5 *Horizontal Ladders and Overhead Rings*
We do not feel that the reduction in allowable height for horizontal ladders and overhead rings from 84" to 78" is justified for the following reasons:

1. ASTM F1487 and the North American Harmonization Draft Standard both contain 84" as the maximum height. This was based on anthropometric data presented to the group by Debbie Tinsworth of the CPSC staff. This data showed that a 84" maximum height allowed a maximum user (95th percentile 12 year old) to use the equipment with proper ground clearance for his feet.

2. Thousands of installations have this equipment installed at this height (84") with no injury data do indicate that that the height was a hazard.
3. Lowering the height by six (6") inches would probably have no effect on the quantity and types of injuries on this type of equipment.
4. Susan Antle has indicated in a report to the ASTM subcommittee that when horizontal ladders were lowered to 78", they were too low to be used by 4th, 5th and 6th graders in her schools and they had to be restored to their original height of 84".

This section also contains a change that eliminates the use of rungs for take-off and landing on horizontal ladders and overhead rings. Without the use of rungs at least on one end of freestanding equipment of this type, it will be virtually impossible to use the equipment.

RECOMMENDATION: The maximum height for horizontal ladders and overhead rings should be 84 inches. Also, the use of rungs on at least one end for take-off should be allowed.

Section 12.1.7 *Climbing Ropes*

This section states that climbing ropes are not recommended because of the potential hazard of strangulation. We recommend that the revisions currently being proposed for the ASTM F1487 standard be incorporated in the CPSC draft. These revisions are:

1. A climbing rope shall be securely anchored at both ends.
2. A climbing rope shall not be capable of being looped back on itself, creating an inside loop perimeter greater than 5".

Therefore, if these two provisions are followed, there can be no hazard of strangulation with a climbing rope.

RECOMMENDATION: Change the section on climbing ropes to harmonize with the current and proposed ASTM provisions as stated above.

Section 10.2 *Stairways and Ladders*

Please refer to Table 2 in the draft (page 21) for the following discussion. The maximum allowed slope for stairways is shown to be 35°. The slope allowed for stepladders is shown to be between 50° and 75°. Steps that are sloped between 35° and 50° are not covered by any requirements. ASTM F1487 allows stairway slopes up to 50°.

We realize that the CPSC has been unwilling to increase the allowance for stairway slopes to anything greater than 35° because of some existing research for residential stairs that maintains that anything over 35° causes an increase in stairway accidents. We do not believe that this is a valid

application of research to the conditions in question. The user's interactions with the stairs on a piece of play equipment is very different than that with the stairs in a home. Playground users are always experiencing changes in elevation, topography and other physical challenges and therefore are paying attention to their interaction with the equipment. At home, a user is typically cruising along, not paying attention to the stairs and therefore more likely to be caught off balance by a stairway of steeper than normal slope.

If the CPSC cannot be convinced by the above rationale, would they consider lowering the allowed slope for stepladders down to 35°? This would at least prevent the current situation where there is a slope of access that is not covered by any requirements.

Section 7.1 *Assembly and Installation*

This section requires that after assembly, new equipment should be inspected before its first use "by a person qualified to inspect playgrounds for safety". This raises the questions: "How does one determine who is qualified?" and "Does this mean a CPSI?" This kind of general statement can be confusing to playground purchasers and we recommend that it be deleted.

Section 7.1.1 *Stability*

This section states that footings may be required to be inspected by a building code official. Most localities do not currently have this requirement and those that do typically do not have inspectors qualified to perform the inspections. We recommend that this statement be removed so that we do not encourage more locales to adopt a policy of this type.

Section 10.3.2 *Handrail Diameter*

Revising the handrail diameter to harmonize with ASTM F1487 is a good idea. However, adding the statement that 1.25" is the preferred diameter doesn't change the requirements of .95" to 1.55" and only adds confusion to the public who could inadvertently interpret the statement to mean that it is a requirement. In order to avoid confusion, we recommend that you delete the sentence stating a preferred diameter of 1.25"..

Section 10.3.1 *Handrail Height*

This section has divided handrail height into separate pre-school and school-age requirements. Handrails designed for use by both age groups would be required to be between 22" and 26" in height. The current CPSC Handbook allows handrail heights for both age groups to be between 22" and 38". Therefore current handrails designed for both age groups can be up to 38" in height. This tall handrail helps prevent inadvertent falls over the top of the handrail. The draft, however, would require that handrails designed for both age groups be lowered to a

maximum height of 26". A handrail at this height could increase the risk of inadvertently falling over the handrail.

Young children use adult height handrails every day in their homes and other facilities not specifically designed for their age group. They come to expect and have no trouble dealing with handrails at these heights. We recommend retaining the existing Handbook language allowing both pre-school and school age equipment to have handrails between 22" and 38" high.

Section 12.6.2 *Single Axis Swings and*
Section 12.6.3 *Tot Swings*

In these two sections of the draft, there are new requirements for minimum swing seat clearances above the protective surface; twelve (12) inches for pre-school age children, sixteen (16) inches for school-age children and twenty-four (24) inches for full-bucket style tot swing seats. This appears to be unnecessarily confusing. Rationale to support this would help us to understand why it is necessary to have three different swing seat heights.

Without good rationale to do otherwise, we recommend that CPSC use the ASTM F1487 swing seat height which is a minimum of twelve (12) inches from the bottom of the seat to the top of the protective surface for all types of swing seats. This would greatly reduce the confusion that could be generated by having three separate swing seat height recommendations.

#13

Thad Joseph
1403 Oak Lane
Miami, OK 74354

June 25, 1997

Mr. John Preston, P.E.
Directorate for Engineering Services
U.S. Consumer Product Safety Commission
4330 East West Highway, Suite 611 Bethesda, MD 20814-4408

Dear Mr. Preston:

I have recently learned of proposed changes to the CPSC Handbook. As a person who has spent the past twenty years in education and recreation, I find these proposals to be very disturbing and limiting.

First, and foremost is the height limitation for school age children. There are many points to consider and I will do my best in covering the most important. Neither the ASTM F1487 nor ASTM F1292 place height limits on play equipment. Rather, the importance of the correct amount and/or type of protective surfacing is the point which needs to be stressed. There are several types of protective surfacing which meet the CPSC's own requirements, and additionally, to heights of 12 feet and above. During the past 15 to 20 years, many play components have had heights above the draft recommendations and to date, there is no injury data to support the height/injury correlation. With that in mind, you must also consider the growth of our children, both physically and mentally. Challenges play an important role. By having the ability to stretch a little further, climb a little higher, the children grow in their physical appearance and additionally stimulate the imagination. Taller slides become a lighthouse or the mast of a ship. Horizontal ladders and overhead rings could be the components which make children dream of being an Olympian or simply the challenge of strengthening the muscles to a point where the child can go just one more rung or ring. The smile on their faces for overcoming these challenges is reward enough. By limiting our children's growth, we are in essence setting a poor example....will our children quit using their imaginations and will they turn away from challenges to their strength and fitness? I would hope this does not happen. So too, is the question of climbing ropes. By adopting the current proposal to the ASTM F1292 document, the elimination of the climbing rope should be reconsidered.

CHURCHICH RECREATIONAL DESIGN

13251 Eagle Run Drive • Omaha, Nebraska 68164
(402) 496-2669 • 800-747-7528 • FAX (402) 496-2018

#14

June 25, 1997

Mr. John Preston, P.E.
Directorate for Engineering Services
U.S. Consumer Product Safety Commission
4330 East West Highway, Suite 611
Bethesda MD 20814-4408

RE: Proposed revisions to Handbook for Public Playground Safety

Dear Mr. Preston,

I am writing in reference to the proposed revisions of the CPSC handbook for Public Playground safety. The following are concerns I think should be addressed:

Section 4.3.1: Height Limitations for school Age Children

- Limiting play equipment height would make equipment too boring. When kids play, they have most fun when equipment fun and challenging. More accidents happen on equipment that has no play value because kids will play on the components the wrong way to try and make it more challenging.
- The cities/schools should have the right to choose wheiher they want equipment tall or not. Because there is protective surfacing material available for heights in excess of 12 feet that meet CPSC's requirements, it should not be necessary to arbitrarily limit heights.
- There are thousands of items, such as slides, that are taller than the draft recommendations that have been in use for many years. These items have been used by millions of kids for several years giving millions of opportunities for injuries to happen due to height. There is no injury dat to support the CPSC's position.
- Tall slides have been more popular than ever. PTA groups are the one's wanting to make these playgrounds with as much Play Value as they can. The tall slides are the main attraction.
- Neither the ASTM1487 nor the ASTM F1292 standard limits heights of playground equipment. CPSC should accept the studies and work of these groups and attune its Handbook's contents with ASTM.

Section 12.1.5: Horizontal Ladders and Overhead Rings

- Lowering horizontal ladders from 84" to 78" will make these components too low for 4th, 5th, and 6th graders. These kids use these components more than the younger kids. Lowering these would make the kids drag their feet on the ground.
- Eliminating rungs for take off and landing would make it virtually impossible for the majority of users to use the equipment.

Sincerely,

Jeff Churchich

Jeff Churchich
Churchich Recreational Design

Received 5/28/97
#2

May 22, 1997

John Preston, P.E.
Directorate for Engineering Sciences
U.S. Consumer Product Safety Commission
Washington, D.C. 20207

Dear Mr. Preston:

Thank you for sending the May 1997 draft of the revised US CPSC Handbook for Public Playground Safety. It is an honor to be included in reviewing the draft. You indicated in your letter you would appreciate comments on the draft, so the following are my comments referenced to the new handbook only.

Surfacing

It pleased me to see there is a heavier focus on surfacing. I do wonder though why shredded bias-ply tires (non-metal) is only included on topic 4.5, page 6, and not Table I. Shredded tire exceed all the expectations for surfacing in Appendix A, page 38, and has a much better safe fall height ratio of height of equipment to depth of material. Perhaps it is too new, but Maine Safe Kids has been promoting it for years with excellent results. Robert Bull of Maine Coalition of Safe Kids, Box J, Temple, ME 04984, # 1-207-778-2251, Fax # 1-207-778-5097 is a reference for information about shredded tire playground surface use.

Developmental age

It's great that you have included an age separation for equipment.

Supervision

Supervision is mentioned briefly in topic 6.3, page 12 and topic 12.2, page 29, but was not found elsewhere. I think supervision is a key component of a playground environment. In my research study, I am proposing there are three overall issues about playgrounds with supervision an important subissue (see attached).

Slides

The portion on slides (topic 12.4, pages 30-33) is well done, except there is no direct mention of overall slide height. There is the general reference in topic 4.3.1, page 5. It would be repetitive, but I think it is important enough to specifically include in the slides section 12.4.

Overall, the new draft is great, and again I thank you for this opportunity to participate in its review. It would interest me to be part of the public meeting, if it occurs. I would appreciate any comments you or your colleagues might have for my study. Also, if possible, could you please inform me of the procedure and location to be a certified playground inspector? Please contact me at 881 Airport Road, # 14E, Chapel Hill, North Carolina 27514 or # 1-919-967-7863.

Sincerely, Patricia Ashland

Patricia Ashland, BSN, RN-C, MSN candidate
881 Airport Rd.# 14E, Chapel Hill, NC 27514 # 1-919-967-7863 Email: pashland@email.unc.edu

cc: Robert Bull
Enclosure

#15

June 26, 1997

Mr. John D. Preston, P.E.
Directorate for Engineering Sciences
U.S. Consumer Product Safety Commission
4330 East West Highway, Suite 611
Bethesda, MD 20814-4408

Proposed Revisions of the
CPSC Handbook for Public Playground Safety

Section 4.3.1: Height Limitations for School Age Children

1. Height restrictions for equipment should be based on surfacing used - not some arbitrary height limitations.

2. Neither ASTM F1487 & ASTM F1292 standards show limits on playground equipment height - CPSC should accept the studies of these groups!

3. I have been associated with schools, parks and private playgrounds for 25 years and have yet to see height as a problem for injuries. Surfacing and equipment maintenance is more critical than restricting the height of equipment!

4. Limiting height of equipment to 8' would drastically cut play value and age use. If you eliminate challenge and fun, you limit play value and use of playgrounds!

Section 12.1.5: Horizontal Ladders and Overhead Rings

1. By lowering the height of horizontal ladders to 78" you will create an easier route to the top of these units and create additional fall hazards.

2. If end ladders are eliminated from horizontal ladders you will create only 2 options for user: Make it back to the start point or fall to the surface! End ladders allow all users to use this type of apparatus (horizontal ladders) to develop upper body - eliminating end ladders only benefit the most fit!

#15

Section 12.1.7: Climbing Ropes

1. Current ASTM F1487 requires climbing ropes to be secure on both ends - please explain strangulation without ability to create knots?

Section 7.1.1: Stability

1. Inspection of footing installations by building code officials would be total over kill for this type of installation! Most schools and cities do not have inspectors to perform this type of service.

ASTM F1487 and ASTM F1292 standards were consummated with a lot of thought and study and CPSC should coordinate their handbook with these standards!

If you restrict future playgrounds without fun, play value and challenge will produce playgrounds without kids!

Thanks,

Roger J Hutchinson

RJH/le

16

June 24, 1997

Mr. John D. Preston, P.E.
Directorate for Engineering Sciences
US Consumer Product Safety Commission
4330 East West Highway, Suite 611
Bethesda, MD 20314-4408

Dear Mr. Preston:

I wish to express my opposing ideas on the changes to the Handbook for Public Playground Safety.

In the section that states that footings may be required to be inspected by a building code official, most localities do not currently have this requirement and those that do not typically have inspectors qualified to perform the inspections. We feel this statement should be removed so that we do not encourage more locales to adopt a policy of this type.

The CPSC draft is eliminating the use of climbing ropes because of the potential for strangulation. The ASTM currently requires that climbing ropes be securely anchored on both ends. There is a revision to the ASTM standard to process that would require that no loop could be formed which would be large enough to allow it to be rapped around a child's neck. I recommend that CPSC adopt the current and proposed procedure by ASTM provisions on climbing ropes.

There are thousands of items, such as slides, that are much taller then the draft recommendations that have been in the field for many years. These items have been used by hundreds of children every day yielding hundreds of millions of opportunities for injuries if there were truly any hazard associated with the playground heights. There is no injury data to support the CPSC's position. The limiting of height tremendously reduces the play value of the equipment.

In reference to Horizontal Ladders if they are to be lowered from 34" to 73", they will be too low to be used by 4-6th grades. The children will be actually dragging their feet at this height. The without the use of rungs for take - off and landing on horizontal ladders and overhead rings at least at one end of the equipment will be virtually impossible for the child to use the equipment.

Because there is protective surfacing material available for heights in excess of 12 feet that meet the CPSC's own cushioning requirements, it is not necessary to arbitrarily limit heights. Neither

226 West Olmos Drive San Antonio, Texas 78212 Tel: (210) 805-8700 Fax: (210) 805-8007

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Mr. John D Preston, PE
Directorate for Engineering Sciences
US Consumer Product Safety Commission
June 26, 1997
Page Two

of the ASTM's standards limit heights of play equipment. CPSC should accept the work of these groups and harmonize its Handbook's contents with ASTM.

We appreciate this opportunity to express our opinions. Thank you very much for your consideration of our above ideas of opposition to the new revisions to the CPSC Handbook.

Sincerely,

Jeff Cox

Jeff Cox
President

JC/ah