#73

To: John Preston, CPSC

From: Patty Spring
2686 Norton Rd.
Stow, Ohio 44224
(216)655-2661

Date: June 30, 1997

Re: Draft of revision of CPSC Handbook for Public Playground Safety

I apologize for the lateness of these comments and questions.

P.1, paragraph 3: Do the guidelines apply to fitness trails located near playgrounds? I'm not sure the wording makes this clear. Would signage help indicate intended usage for fitness trails. I have seen many intended for adults located near children's playgrounds.

P. 5, section 4.3.1: There is no comment re: maximum swing hanger height for school-age children. I suppose you assume that a swing top rail is not accessible. What are you considering accessible? The term "accessible" is not defined on page 2.

P. 6, paragraph 1: Cannot find figure B-3 referred to in note.

P. 7, last paragraph: It may be helpful to note that a drainage base installed below wood product loose-fill materials can extend the life of these materials and provide a drier, more consistently usable surface that is less likely to freeze due to moisture retenction.

P. 25, section 12.1.2: Why is the paragraph re: interior structural components removed? Doesn't this provision prevent injuries resulting from striking equipment in the event of a fall through the interior of equipment?

P. 28, section 12.1.7: Was this change a result of the lack of agreement re: what constitutes a strangulation hazard? I know there has been much discussion of this subject through ASTM. I feel total elimination may be too restrictive. I would like to see ground-anchored climbing ropes allowed, but with comment about the types of materials used, i.e., no hemp-type that can fray and form a noose from the separated parts.

P. 28, section 12.1.8: ASTM 1487-95 section 8.1 allows a higher beam for 5-12 year olds: 16 inches from protective surfacing.

Health Canada | Santé Canada
Health Protection Branch | Direction générale de la protection de la santé

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Product Safety Bureau
Statistics Canada Main Building
Wing 1000, Tunney's Pasture
Postal Locator: 0301B2
Ottawa, Ontario
K1A 0K9

June 23, 1997

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

Dear Mr. Preston:

Thank you for providing me with a draft copy of a revised CPSC *Handbook for Public Playground Safety* requesting comments and suggestions on the proposed revisions.

As you are aware and as was indicated in your introductory letter, Health Canada is participating in the development of the Canadian Standards Association (CSA), *A Guideline on Children's Playspaces and Equipment,* A National Standard of Canada, which is currently under revision. Although representatives of Health Canada have mentioned some of your concerns reflected in your revised Handbook during technical committee meetings of the CSA, a letter will be sent to the CSA committee advising them of some of the recommendations of the CPSC Handbook that differ with the provisions in the ASTM Standard Consumer Safety Performance Specification for Playground Equipment for Public Use, ASTM F1487 for their consideration as attempts are being made to harmonize the CSA Guidelines with the ASTM standard on playground safety.

I thank you for the advising us about the status of the draft *Handbook for Public Playground Safety* and appreciate any further communication on the development of this Handbook.

Sincerely,

M Hill

Mary Hill
Project Officer

Canada

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Parks and Recreation

From: Parks and Recreation <mccleaji@ci.anchorage.ak.us>
To: CPSC
Cc: John Preston
Subject: Comments: Handbook for Public Playground Safety
Date: Tuesday, July 01, 1997 2:21 PM

Hi John - Cate Remme called me today to remind me to send you comments. I had wanted to do a nice letter but time will only allow some shortform notes - I'm sure you'll understand since you've been so immersed in these yourself. Lori Schanche

Comments:
4.3.1. Agree with maximum access heights. Cate has some good wording on this that we worked on together.

4.5 Ensure that description of loose fill materials are referenced in Appendix C - we have had problems in Anchorage with play yards thinking that wood mulch was appropriate, when in fact the edges were sharp and uneven and caused splinters and stabbed children.

5.1.1. Title should state (Excluding slides and swings)

6.2 Locating equipment - State that slide beds should not face north in hot climates (Alaska may be excepted from this) and reference 12.4.4. This is a design consideration that bears repeating in this section.

7.1 Installation of play equipment, Assembly and installation..
Why not mention Certified Playground Safety Inspector-rather than a person qualified... Surely the CPSC supports the examination and training process?

7.2 Please mention in the second paragraph, "Loosened bolts, integrity of safety surface" In some cases the users may not ever see the manufacturers recommendations for maintenance.

12.1.2. We question the removal of the second paragraph concerning removal of climbing bars in the interior where a child may fall greater than 18". Why was this removed?

12.1.6 Sliding Poles
Why is the height above the platform being changed to 60"?This is not compatible to the ASTM .

12.2 Merry Go Rounds
This section should include a discussion on the minimum height of the underside of the platform, so that appropriate clearances can be maintained. ASTM calls for 9inch minimum (8.8.1.4.(2). Inspectors and designers at the Municipality of Anchorage have made the decision not to install merry go rounds in parks due to the problems that occur with snow and how the minimum depth is affected in the winter. Some discussion of this should occur, since many of the users of the CPSC guidelines are lay people who should be aware of this situation.

Illustrations - We feel it is very important to incorporate the

illustrations adjacent to the text when at all possible, in a column format. This will aid in understanding the situation better, since readers will not have to flip around the report to seek out an illustration.

Appendix C Note under Inorganic Loose Material, sand & gravel - Include a note that sand does become hard packed and becomes a maintenance issue.

Since the users of this document range from technical people to those just trying to understand the playground safety movement it is very important to provide an easy to read document that is user friendly. Where possible photos help. Ensure too that a telephone number for the CPSC is included so that issues can be discussed.

Thank you for the opportunity to comment on your draft. Lori Schanche, Municipality of Anchorage, Parks & Recreation, telephone (907) 343-4523

#76

BIRD·IN·HAND
Woodworks, Inc.
Lancaster Pennsylvania

3931 Industry Drive
Lancaster
PA 17603

717-397-5686

fax: 717-397-0475

Monday, June 23, 1997

John D. Preston, P.E.
U.S. Consumer Product Safety Com.
4330 East West Highway
Bethesda, MD 20814-4408

Dear John:

Thanks for taking time to speak with me on the phone today. Enclosed you will find a copy of my comments regarding rung ladders, step ladders and stairways.

Please understand that I have no ulterior motive for raising these issues. We do not manufacture items using rung ladders or step ladders. We do, however, have the occasion to distribute equipment using these items and share in the responsibility for their safety.

Please feel free to contact me if you would like to discuss this. My phone number is (717) 397-5686 ext. 227.

Thank you for your consideration in this matter.

Sincerely,

David B. Hommel
Director of Plant Operations

RUNG LADDERS, STEP LADDERS & STAIRWAYS

We have anthropomorphic data to support our specifications for rung ladders. However, we are lacking data to support our specifications for step ladders.

The fundamental difference between a stairway and a step ladder is not simply slope. The primary difference is in the way they are used. It is from this perspective that we must approach the specifications for step ladders. A stairway must be able to be ascended or descended safely while moving forward. For this reason the accessible tread depth must be at least as long as the heel to ball of foot dimension of the 95th percentile child of the oldest user within the age bracket. A step ladder is too steep to descend moving forward and therefore must be descended moving backwards (**If not, then where is the rationale for limiting stairways to ≤ 35 degrees?**). In this fashion the heel of the foot is not used and, in fact, the heel can become a hindrance in declining the ladder.

The theory of the ≥7" tread depth for 2-5 year olds is that it will create a safer, more stable platform for ascending or descending the ladder. In reality 2-5 year olds will be encouraged to misuse the equipment. For example, a 52 degree slope on a step ladder with a 9" vertical rise between steps and a 7" tread depth would provide adequate footing for an average four year old (foot length is 5.2") to descend the step ladder while moving forward. In effect creating a non-compliant stairway (>35 degrees). Furthermore on ladders with a slope of >60 degrees (accessible tread depth <5.2") they will run the added risk of having inadequate foot support for descending and will most certainly fall if they try to descend moving forward..

Once the ladder approaches a slope of 70 degrees, the accessible tread depth is only 3.25" and it will force the child to descend backwards in the proper fashion.

There are several ways to address this problem:

1) Limit the tread depth to a maximum of 4". In order to avoid the entrapment problem and still allow for overhang of the foot on the step, the back of the step ladder can be enclosed.

2) Limit the minimum slope to ≥70 degrees.

Using one of these methods will ensure that children are not encouraged by the design of the step ladder to use it incorrectly.

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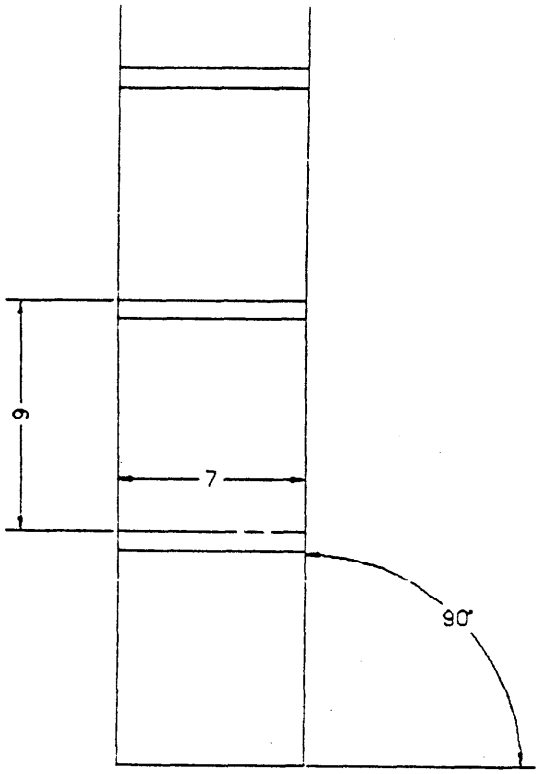

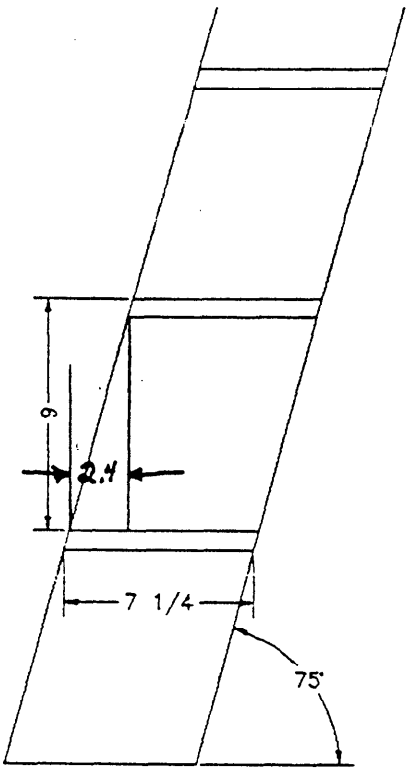

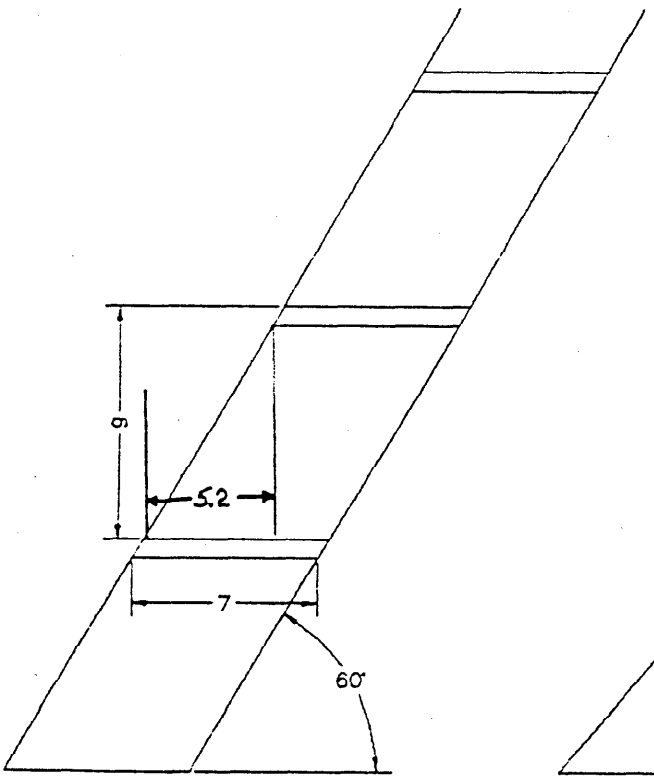

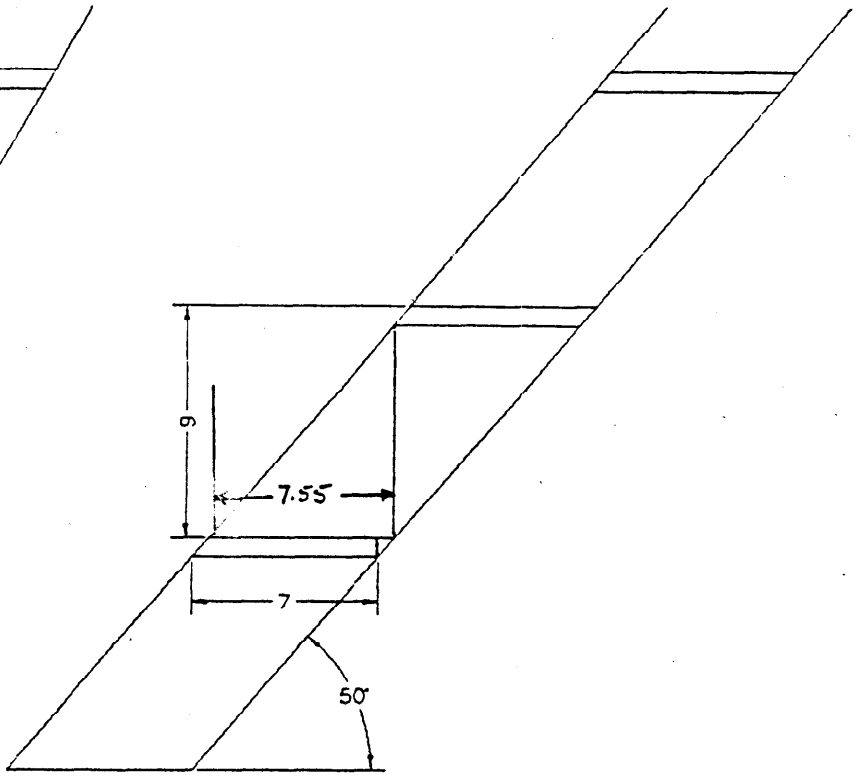

Safety Play, Inc.
RECREATION SPECIALISTS

#77

Accident prevention classes, expert testimony, site inspections, recreational planning services and safety signs.

U.S.-C.P.S.C.
c/o JOHN PRESTON
WASHINGTON, DC 20207

6/24/97

Re; RESPONSE TO PUBLIC PLAYGROUND SAFETY DRAFT

Dear John,

Thank you for considering my response to the CPSC Playground Draft. I am responding in the order that the sections appear. The "¶" refers to paragraph, and if I have more than one comment to a section I am labeling them "A)", "B)", etc.. "Mfgr." means manufacturer, "std." means standard, 2-5 Y.O. is 2-5 year olds, and 5-12 Y.O. is 5-12 year olds.
Remember, we are writing these guidelines not only for current equipment being made, but for equipment of the future as well as equipment of the past that are still out there and will be for many more years. Therefore, consider words like "such as" and "not limited to", etc.
One recommendation that I would like to make is for you to say that the manufacturers are to include a statement in their catalogs that identify the age group (2-5, 5-12, 2-12, or under 2) for each product. RATIONALE; listing products as "TOT", or no listing at all is confusing to the purchaser, and does not identify it to prevent accidents or in case of litigation.

John, I would greatly appreciate it if you would call or write me to let me know if any of my interpretations are incorrect. Keep in mind that many of my comments point out how others may be interpreting a section and is not necessarily my own.

INTRO. (¶2); the last sentence implies that only mfgrs. are to see and use the ASTM std. and no one else is to go by it. Change it to say; "It contains more technical requirements than this handbook". (Delete the rest).

INTRO. (¶3); How many feet is "adjacent to" a children's playground? This, and many other issues, will be critical when injuries go to court. May I suggest that we use some kind of rationale from building codes?

INTRO., TOP OF PAGE 2; When you say "up to" 5 Y.O.'s or 12 Y.O.'s, it may not be taken inclusively, i.e., the day before the 5th or 12th birthday. Also, "over" 5 is not inclusive and may be interpreted as a 6 Y.O.. Is the 5 Y.O. still allowed on equipment for both groups? It appears he is not. Please reword this section.

DEFINITIONS;
A) "NON-RIGID COMPONENTS" - what about deformation of equipment through it's un-intended use? Example; long vertical pipes on a pipe wall that flex enough to allow the torso probe to pass through with <50 lbf.. To really understand my meaning, see my comments for Section 12.6.3 - B), and Section B.6.
B) "PRESCHOOL AGE" and "SCHOOL AGE CHILDREN" - see above comments from "INTRO., TOP OF PAGE 2"
C) "UNITARY SURFACING MATERIAL" - this description limits it to rubber only and does not allow room for a future material. Use "such as" wording. Also, change from "shock absorbing" to "impact attenuating" surfacing.

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SECTION 4.3.1;
A) On "PRESCHOOL-AGE CHILDREN", replace "swing hangers" with "the swing pivot point". This more accurately describes where to measure to.

B) On "SCHOOL-AGE CHILDREN", it states 8' high. Under 4.3, the highest accessible part is the pivot, so swings are 8'H. max. here too? I believe that 5-12's should be able to have 10'H. swings. Add "The recommended maximum height for the swing pivot point is 10 feet."
Also, for this age group, add the following underlined part to the end; ".... 8 feet unless noted otherwise". This covers any contradiction for balance beams, spring toys, and any other equipment of the future.
C) I have a motion at ASTM addressing horizontal ladders for 2-5's. I found some problems with the motion, so I'm changing it to the following new motion.
I propose that the maximum horizontal ladder height for 2-5's be 45"H..
RATIONALE; the vertical grip reach of a 5th percentile 2 Y.O. is 39", so he can now drop only 6" down. The vertical grip reach of a 5th percentile 5 Y.O. is 45", so he will not drop, but he is now allowed to graduate to the higher overhead ladders that are 78"H. This should satisfy those who feel that these ladders are a threat to younger users and reduce the height to lessen the potential of injury.

SECTION 4.4; The sides of most sandboxes are above ground and contradicts with "at ground level".

SECTION 4.5;
A) The first sentence ("of any height") conflicts with 4.4.
B) In "UNITARY MATERIALS", ditto my comment from above Definitions, part "C)".
C) In "LOOSE-FILL", delete the last underlined part in the first paragraph since loose-fill can be displaced quickly and creates a life-threatening hazard when over asphalt, etc..
In APPENDIX "C", you recommend not installing over hard surfaces at all. So, is it okay, or no? I would like to see that it is not for the above reason.

PAGE 7, TABLE 1; Delete "uncompressed" data. RATIONALE; a site does not stay uncompressed. It becomes compressed immediately upon use. I have never inspected an uncompressed surface, even after installation since the installers walk all over it, and is now somewhat compressed! I request that you elaborate on the compressed depth test with 6", 9", and 12" depths. That would reflect what is really happening out there.

SECTION 5.1.3; When we last spoke of this subject, John, you had mentioned you would include "level surfacing" in the description since we don't want to measure from a pit or any decline in surfacing. Can you still do that? Or, you may at least consider including a statement about being aware of this problem, and that if the pit or decline were either filled or a mat placed over it, it would affect the fall zone calculation drastically. We don't need people being made to move borders out, then have the pit filled which negates the effort and costs of having just moved the borders out. This has been, and continues to be done, so we should address it.

SECTION 5.1.4; Currently, "Length of the suspending members" could mean to someone to only measure the chain. Also, it says "in any direction from a point directly beneath.." which could mean anything.
Change it to the following; "The fall zone should extend in all directions from the pivot point by measuring from the pivot point to the top of the suspended member, plus 6 feet." This is much more clear to understand.
Also, change it to refer to Figure 3, not 18, since 18 is a slide chute.

SECTION 5.1.7; There is a growing number of people that have a problem with this. My Use Zone Motion in ASTM was voted down mostly because of how I lowered the recommendation from 6' to 4' on the sides of composite structure attachments. CPSC, of all sources, should see the logic in keeping some kind of fall zone for these areas. We all know that the NEISS DATA, which I have been going through with other consultants in our field, does not break down whether the accident happened on a "free-standing" structure or on components of composite structures, yet people seem to want to apply the data results only to the free-standing structures! I have been eye-witness to several accidents where kids have fallen from one component on a composite structure to another component on the same structure right next to it. There is a lawsuit right now involving a slide that was too close to a net climber attachment next to it, and a person almost broke their neck! **SEE THE ENCLOSED PICTURE!**
Other more descriptive data is being formulated right now that will prove the importance of having use zones on the sides of these components. We urge you to wait, or better yet, come up with some use zones we can all live with. I know for a fact that mfgrs. and owner/operators have had lawsuits from these types of accidents. Keep in mind that not all accidents become lawsuits either, so we hear of only a fraction of what really occurs out there.
ASTM F15.36 (SCPE) has passed a 5' use zone for around the ends of slides, including the sides, because of falls to the sides and to allow traffic flow as well.
Maybe we can adopt a rule that states if the component of a composite structure is >30" high then a 5' use zone cannot overlap, but if it is <30"H. then it can. This is already in the second paragraph of 5.1.1. Please explain what the difference is between this and attachments to composite structures. I can still see it as a hazard. I cannot believe CPSC would eliminate a fall zone for these components because the data is not clear. It's there, it's just not specific. Then it is not clear for free-standing units either, but they have to have 6' around them. This is a problem that will not go away. If you take it out now, by defining the fall zone as the "perimeter" and not between the "pieces", it will do a great injustice.

SECTION 6.1;
A) Change it to "A barrier, such as a fence, surrounding ...". Rationale: more clearly defines it, but does not limit it to only fences.

B) I do not agree with the 5' min. height. We are not enclosing a pool, which is done for it's own reasons. This would outlaw all of the perfectly acceptable 4' High fenced out there. Lower it from 5' to 4' high and it will still be effective for what we are trying to accomplish. Some states allow 4' high fences. It will cause a great financial burden for many many people.

SECTION 6.2 (last ¶); With this worded like this, it is meaningless. Play and traffic patterns require a use zone between components. See above comment in 5.1.7.
I keep hearing that If a unit can handle more kids it automatically has more value, so consequently, structures are sold with as much crammed onto them as possible.

SECTION 6.3;
A) (Last ¶); can they sit on a bench and still be supervising properly? Some will also read this to mean that supervisors need shrubs (improper English). I would reword this so it does not imply that it's okay for supervisors to sit instead of being next to the children.

B) (Last sentence); Exchange "can" with "shall".
Also, include the same recommendation to instruct users on appropriate usages and behaviors, and to warn of popular inappropriate behaviors. See enclosed sign sample. RATIONALE; almost every lawsuit includes "FAILURE TO WARN", and always refers to warning against what could have prevented the accident. This includes instructions on the safe way to use the equipment, which is sometimes more important in court than what the age group was. Recreation Creations (Quality Industries) has signs, and my company carries a full line of signs as well. Some mfgrs. are beginning to implement signs into their equipment, yet those signs could be considered as insufficient for proper warning (color, type style, letter height, etc.).

SECTION 7.1; make the following underlined changes; "... by a person certified to audit playgrounds for safety." RATIONALE; There is a huge difference between inspecting and auditing. Owner/operators continue to have the misconception that their routine maintenance inspections are the same as what we refer to as inspections. Hence, the reason for the word "audit", because that is what should be performed.

SECTION 7.1.1; make the underlined change. ".... a requirement for an audit by a certified inspector". See above rationale.

SECTION 7.2; change "inspections" to "routine maintenance inspections". See above rationale.

SECTION 8.2; HARWARE; delete last sentence here, as well as last sentence in 2nd ¶ in 12.6.1. Adopt ASTM Section 6.3.1 and 6.3.1.1. RATIONALE; "As tightly as possible" can mean anything depending upon the strength of the individual closing it, his judgment, etc., which can still allow a hazardous opening. Since this is a consumer guideline, you may want to say "to the approximate thickness of the metal clip on the end of a standard tape measure" or "the approximate thickness of a credit card", etc..
Another idea is to mention that it is not limited to "S" hooks. They may use a bolted clevis, like Landscape Structures has, that never opens up.

SECTION 9.2;
A) In the first ¶ after the Warning box, move "Particular attention....(see Figure 4)" to the beginning of Section 9.4. RATIONALE; this combines protrusions on slides into one section.

B) Either delete the reference to NRPA, or include other suppliers. I know of Landscape Structures, IMF, and Playworld who make probes and gauges. My own company may wind up with tools as well. If you refer NRPA, then refer more than just the one source, or tell people to call you for suppliers. Also, only referring NRPA is a benefit to the supplier to NRPA and not the others that are in the market.

C) May I suggest that you reword the explanation of "PROTRUSIONS & PROJECTIONS" so that it does not imply that all gauges detect an entanglement, when it is the ⅛" gauge that does. The others detect protrusions that can penetrate the temple, eye socket, or other bodily areas. It's important to know that, for example, a 3" long bolt that is below horizontal is (probably) not an entanglement hazard but is a penetrating one. Can you clear this up?

SECTION 9.6.1, (2nd ¶); The description in the first sentence is incorrect. It should read "3.5 inches by 6.2 inches, up to 9 inches in diameter." RATIONALE; A 4"x4" space would "fail" with the existing description, but the 3.5"x6.2" torso probe cannot pass through it and really passes. Also, the other dimension that you address in the appendix is the 4"

depth of the probes. Flat templates are being interpreted to fail an opening that should pass when it is <4" deep. So, a flat template is more difficult to test the 4" depth with. Full dimensional probes are required, and we should not recommend two different types of testing tools.

SECTION 9.6.2; Add "Another exception to this is any degree of angle where both legs are at or below horizontal". RATIONALE; there are many types of equipment out there that have this situation but should pass since the user's head can be removed sideways, as shown in ASTM Figure A1.9c.

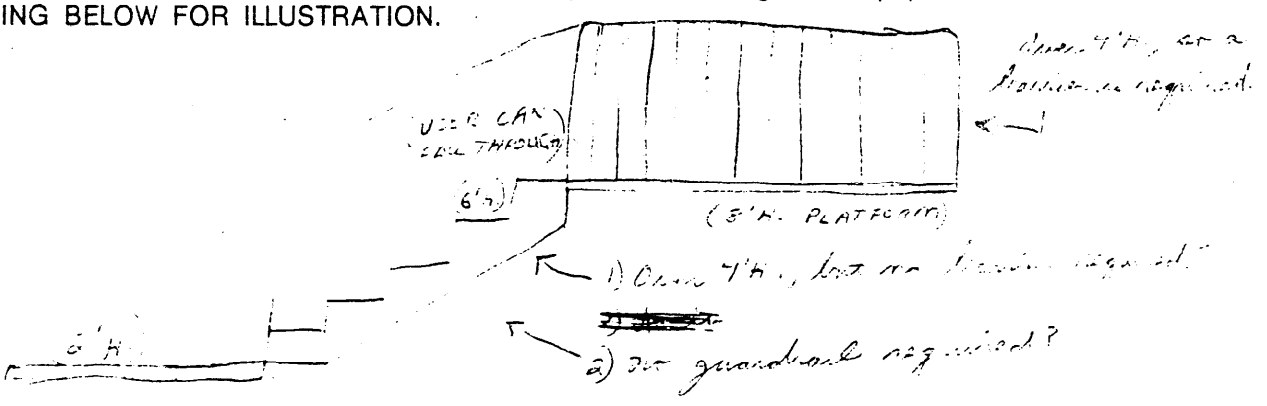
SECTION 9.7;
A) I think it is misleading to say that footings can go just below the surfacing. They should actually be around 4" below ground level in case the loose-fill surfacing becomes washed away or kicked away to the ground level. This would leave you with the same scenario as installing loose-fill over concrete (being the footing, at ground level).

B) Retaining walls are borders. Change that to say "borders" to use a more common term. I have heard owner/operators express concern over installing what they describe as a high concrete wall, like a sound barrier because of this wording. Sounds crazy, I know.

SECTION 9.8; Add "Tree limbs, phone and electrical lines, etc. shall be ≥7' away from equipment and swing trajectories." RATIONALE; obviously we don't want kids to come close to these objects.

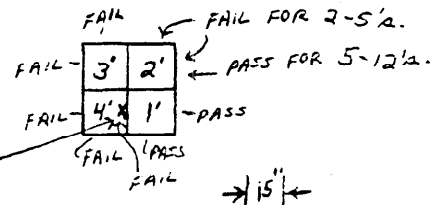
SECTION 10.2; ditto my comment from above Section 9.6.1 regarding 3½-9" spaces.

SECTION 10.3; Stairways & stepladders are "elevated surfaces". What about steps or stairs that are >20"H. for 2-5 Y.O.'s, or are >30"H. for 5-12 Y.O.'s, shouldn't the height of the handrail act as a guardrail and be designed to protect them from falling off as well as for handgripping? What about when steps or stairs are >30"H. for 2-5's, or are >48"H. for 5-12's, shouldn't the sides act as a protective barrier as well? Some mfgrs. are doing this already, but again, we are not just addressing new equipment. SEE THE DRAWING BELOW FOR ILLUSTRATION.

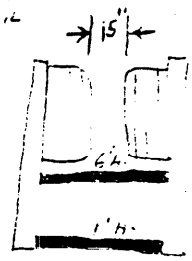


SECTION 11.3;
A) Add to the first sentence "stairways and stepladders". They are an elevated surface. I heard that the ASTM HOME COMMITTEE added this and reorganized it after my motion to add it. I've got an identical motion for PUBLIC committee as well. For further rationale, see my comments in above Section 10.3. John, your response to this issue from my letter of 1/2/97 was that "stairways & stepladders" would be added. If so, great, if not, please explain. Thanks.

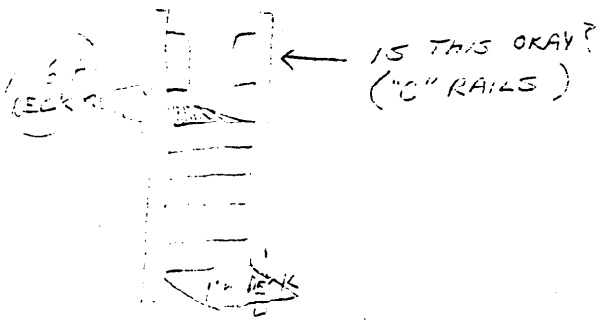
B) (Last ¶); John, we discussed this at the June ASTM meeting. The statement of "so that fall height does not exceed 20" (for 2-5's) and 30" (for 5-12's)" indicates that we do not want children falling from distances greater than those. I know it also happens to be the heights when a guardrail is required, however, I am concentrating on the child inadvertently falling off the side of a platform. My contention is that there was great concern for falling >18", or >20", or >30", or >48", etc., and here we have much more than that. We must make it clear that adjacent (or layered, or stepped) platforms must have a limit due to potential falls. Steve King, Fred Druck, etc., agreed that they had set limits on theirs, but they were different. Fred's is 36" max., and I believe Steve said his were either 32" or 48" max.. FALLING HAS BEEN IDENTIFIED BY CPSC AS THE MAJOR CAUSE OF INJURIES!

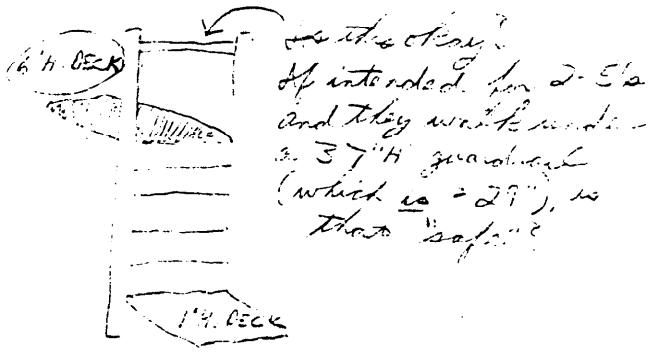


Please refer to the xeroxed pictures and their notes. Please refer to the plan view (aerial) to the right. This shows adjacent platforms with no guardrails, barriers, or vertical ladders at all for clarification purposes. Focus on the 4' and 1' platforms, where it fails. Now look at the DRAWING below it. It shows the new 15" opening and what a "proper" guardrail or barrier is about to become. I have not included a vertical ladder to make a point. They can fall from 6' to 1' here, whether they have a ladder there or not. Certainly we do not want to say it's not okay to fall from a 4' deck to a hard surface but it is okay to fall from a 4' deck to a platform (hard surface). My own experience was an approximately ground level platform with a vertical ladder going up to a 7'6"H. platform which kids fell off of and onto the lower platform. See the enclosed picture. I am including yet another picture of a unit with a 6' difference in platform heights that the owner removed.



Here are two more illustrations.





SECTION 11.4; "SCHOOL-AGE CHILDREN"; change the lower edge from 26" to 28" to match ASTM, or vice versa. When there is a conflict, and both are adopted into law for a state, then what? If we are to take the most stringent of the two, then consider stating that somewhere in the introduction.

SECTION 11.5; Move the second sentence in "PRESCHOOL" to the end of the first ¶ because that statement holds true for School-age as well. We don't want to imply that verticals are only good for 2-5's. Another reason is that this is rationale, which belongs with your other rationale in the first ¶.

SECTION 11.6; See my comments above for vertical ladders between platforms >20" or >30" apart. Also, the way this section is currently worded does not include vertical ladders. Did you want that?

SECTION 11.7; I interpret that you have a max. of 12" and 18" so that "falls from a higher platform can be terminated by a lower platform" and have these measurements as a limit. I also understand that it acts as a max. stepping distance for those age groups as well. So, is it for both reasons? How does the 20" and 30" max. fall height (from Section 11.3, last sentence) affect this section? Again, although it relates to the heights required for guardrails, in the same sentence it implies they cannot fall more than 20" or 30" to the next platform.

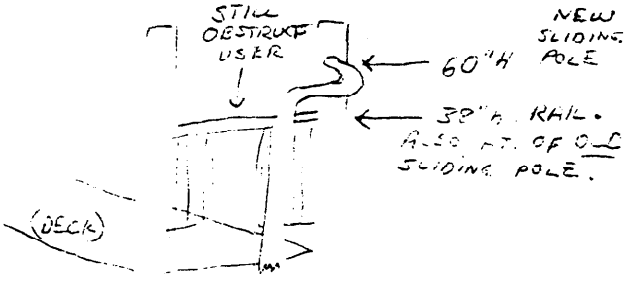
SECTION 12.1.2; regarding the second ¶ that is stricken. In a discussion with CPSC at the June ASTM meeting, I learned that this section was proposed to be taken out because of it's confusion in wording as well as the possibility of the elimination of arch climbers if it was applied to those. Another example given for it's deletion was that the "Jungle" or "Tower" climbers were no longer being produced. However, this does not matter since there are a lot of them still out there. Remember, we are not writing a guideline only for current and future equipment being manufactured, but for equipment that may still have decades of service left in it. So, we have to include those as well. Plus, mfgrs. are making other types of equipment now that have the same, if not worse, hazard. The "restriction in design" argument cannot be employed in all cases, especially this one. We do have data and injuries occurring because of these designs. If someone says to prove it, you should say that they should prove otherwise!
Mainly, we acknowledge the hazards of falling onto a hard surface, not just surfacing. I've got all of the NEISS data that says so many injuries have occurred from falls to a hard surface. The problem, as you know, is that most often it does not state what the surface was. It could have been the ground, rungs on the same climber, or another climber either next to it or one near it on the same composite structure. This is a good argument to the use zones for composite structures as well.
Leave the deleted statement in, but give examples that exclude arch climbers as the line we draw for the level of risk we accept. Either that or come up with an angle or curve maximum that you measure the 18" with, in order to exempt arch climbers.
Please examine the xeroxed pictures on the two enclosed pages. One shows a hazardous "½-loop arch climber" as seen from the platform. If the user fell down to the rungs below it would possibly be fatal. Next to it on that page is the infamous Jungle or Tower climber that the sentence was apparently written for. On the next page you'll see a (highlit) version of a climber that originally had a concave center where kids would fall onto. There are still a lot of those out there, but this one was converted so that the center was replaced by tires so they could fall onto something more forgiving than the hard pipe that were 5 feet down. Again, those with the center pipes are still out there, and thousands of climbers that are designed with the same hazard are out there.

SECTION 12.1.5;
A) I agree that we should address equipment for 2-5's, but starting at 4 Y.O.'s is going to clash with typical age recommendations of 2-5 and 5-12. I agree with the 12" & 15" max. for rungs, but you also need to address an appropriate height and reach length for the 2-5 group. In ASTM, the equipment for 5-12's can have a vertical grip reach of 45", and 2-5's have a 39" reach (see "NOTE 5" in ASTM Section 8.3.5). You should either incorporate this into the CPSC or change to the following dimensions; change from 60"H. to 45"H., and maintain the 78"H. you have in this draft.
RATIONALE; the vertical grip reach of a 5th percentile 2 Y.O. is 39", so now he can drop only 6" down. The vertical grip reach of a 5th percentile 5 Y.O. is 45", so his feet will be at ground level, but he is now eligible to graduate to the higher overhead ladder that is 78"H.. This should make everyone happy that wants to include the 2-5's onto some kind of overhead ladder and still be safe.

B) Delete the last sentence in this section. This will make free-standing horizontal ladders obsolete. Also, in FIG. 14, it shows rungs by the platform. What was the rationale for eliminating rungs as an acceptable access/egress? My additional rationale is that rungs for horizontal ladders are no different than a vertical ladder, or rungs used on arch climbers (at the lower end), etc.

SECTION 12.1.6;
A) (Second ¶); add the following underlined part "....should not have an abrupt change in direction along the sliding portion." RATIONALE; A change in direction should be okay, just not an abrupt change. See enclosed picture where it illustrates how groin injuries can occur from an abrupt change in its' direction.

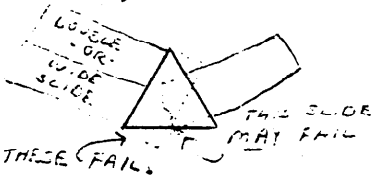
B) Add "There shall be an unobstructed open space of no more than 15" horizontal and at least 60" vertically." RATIONALE; there are many units in existence that have a 1" o.d. horizontal pipe "guardrail" at the 38" height.
? The reason for raising the pole to 60" was so they would not stoop, or duck down, to access it. If you install a barrier with a 15" wide opening, there is no vertical minimum stated. If we make them replace a 38"H. pole with a 60"H. one, they would still have to duck anyway if there were a 38"H. rail there. See drawing at the right.



SECTION 12.1.7; Delete everything stated in this section of the draft. Replace with; "Individually suspended climbing ropes shall be securely anchored on both ends. The rope shall be maintained tight so that it cannot be looped back on itself."
RATIONALE; We do not outlaw rope nets, and they could feasibly be looped back upon themselves on the same rope. Also, there are rope climbers on playgrounds that are vertical as well as somewhat angled. They are great climbers but I think that we should also address a maximum height (8') for them as well. I think they are okay as long as they cannot loop, and this rewrite covers that.

SECTION 12.1.8; Add a new recommendation of 16" for 5-12's. RATIONALE; our rationale at ASTM, if I remember correctly, was that the length to their crotch was more than the 2-5 group, and offers a greater level of challenge and fun for that age group without risk of injury.

SECTION 12.4.3;
A) You need to describe that the 22" x slide bed width area is required for transition and foot room purposes. Also, state that the 22" measurement is taken from both sides of the slide bedway because of the fact that triangular platforms may not have the
? transition area required to make a safe transition. This is especially true with double or wide slides. People have told me that they feel that as long as they have 22" at any point it passes. That is not the purpose or spirit of the 22" requirement. See design at the right.



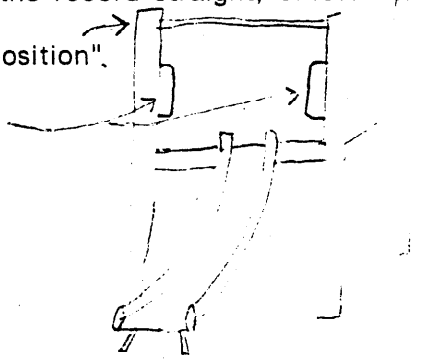
? B) (Page 31, 3rd ¶ -or- fourth line); ASTM has not been able to define a "gap", as far as I know. This seriously needs to be done for your revision, so please examine this.
gaps A hairline thick gap fails according to one top consultant, which is not justifiable. On the other hand, is a 2" gap okay? I would think so. What about a gap between the panel and a support? Maybe not. **SEE THE ENCLOSED PHOTOS**
Add to the end of this sentence ".... slide chute, including any panel, hood, etc."

Also, add "A gap is defined as an opening >.04 inches and ≤2 inches". RATIONALE; the .04" is from the entanglement size already established for slides in Section 9.4. The 2" is a size I thought would be appropriate to allow a glove to pass through, yet still not entangle (see picture enclosed). This establishes a measureable range that can be allowed into designs, and courtrooms, without question. This area is too critical to leave it ambiguous.

C) (Page 31, 4th & 5th ¶); My interpretation of the 4th ¶ ("With the exception of tube slides ....") is to provide "C" rails to grab onto to assist in the transition. These do not actually "channel the user". Channeling the user is addressed by ¶ 5 by incorporating a horizontal cross-pipe as a means to channel the user. There seems to be many different interpretations out there of these two paragraphs. Hence, a drawing is needed to clarify it, and I request that you include one to set the record straight, unless this is incorrect.

Cross-pipe to "channel a user into a sitting position".

Grab rails to "facilitate the transition from standing to sitting".



Is this correct? If not, and both ¶'s address the same type of rail or handhold, then please provide a drawing as to your intent.

SECTION 12.4.4;

A) (1st ¶); If you recommend a measureable slope degree, state a measureable max. slope of 50° so they know how to tell if a child can lose contact. Otherwise nobody can determine whether or not they can lose contact. Also, how are they going to know the average incline is 30° if they do not measure it like ASTM Section 8.5.4.1 and its' Figure A1.18? This is what I term as a "max. average slope" of .577, which is the inverted tangent of 30°, so we can still call it 30°. The point is, inspectors have been known to lay a slope gauge on the bedway, and if it shows anything over 30° they fail it, and it should not fail. For example, a 40° slope may be okay, as long as the result is ≤.577.

Figure ?

B) (3rd ¶); Again, define a gap. See above comment in 12.4.3 - B).

SECTION 12.4.5 (2nd ¶); This does not address that the exit region should be 0-4° below horizontal. Add that in because it would take care of drainage, etc. So, it should say, "The exit region should be 0-4 degrees below horizontal and have a minimum length of 11 inches."

Exit ?

SECTION 12.4.7 (1st ¶); Lateral discharge may no longer be a problem with newer slides, but it can be with older ones that are still around, and will be out there for quite some time. ASTM Section 8.5.4.6 is dedicated to lateral discharge, and your draft mentions it, but neither explains how to check for it. It looks like that section is staying in the standard as well, so can you re-address this in your revision? Please? May I suggest;
1) include the information stated in the 1981 Guidelines without whatever faults it had.
2) describe the test briefly, but refer to a separate document to be published in the

future after the bugs are worked out.
I have made the lateral discharge tools and have used them to gauge compliance according to the '81 books and would like to know the accuracy or flaws of the '81 recommendations. Please let me know.

SECTION 12.4.8;
OK A) (2nd ¶); Change "treated" to "designed" for a more appropriate word. "Treated" sounds like a pressure treatment or a coating.

B) Add this to the last paragraph for fully enclosed tube slides; "Fully enclosed tube slides should have a means to see into the tube for supervision, such as cut-outs that do not pose an entrapment or entanglement hazard." RATIONALE; Mfgrs. can cut out 3" circles in the tube and cover them with curved Lexan to prevent entanglement. I have a lawsuit I've been working on where a child nearly died because he was hanging inside the full tube slide, and also because nobody saw him. The only reason he was checked on was because kids were lining up to go down the slide and they complained that he wouldn't go. When the supervisor saw him he was already blue. He was given CPR and lived. Some method of sight into the tube could prevent a death, or in this case, a near-death.

SECTION 12.5 (4th ¶); You address diameter only (of the handgrip). Include a statement that recommends that the handgrips and footrests comply with protrusion requirements in Section 9.2 as well as Section 10. RATIONALE; this is covered by ASTM Sections 8.11.2 and 8.11.3. Kids can stand on the side of the toy and the handle can penetrate their eye socket (per Teri H.).

SECTION 12.6.1;
A) (1st ¶); Delete the word "may" (stand on seats). It implies that you approve of this behavior.

B) (2nd ¶); Again, add that "S" hooks be closed ≤.04". See my comments for Section 8.2.

SECTION 12.6.2;
A) (Page 35, 1st ¶); replace "unoccupied" with "occupied" to match ASTM and because a new seat can droop down after use and wear and attain a different result. One can always put an inspection bag or almost anything to simulate occupancy.

B) (Page 35, 2nd ¶); Figure 21 should match ASTM. Drop the 33" reference. RATIONALE; a seat can droop down after use and wear and attain a different result, it may have more or less chain, etc.. Adopt the 60" up from level surfacing. Add "level" so people stop measuring from slight declines, on up to pits, in the surfacing, and failing this test as well as the use zone test. You might consider a reference such as "Be aware of where the level grade should be. Keep loose-fill surfacing level to avoid declines under swings, slides, etc." This was addressed in my letter to CPSC dated 1/2/97.

SECTION 12.6.3
A) (TOT SWINGS); How is "under 4 Y.O." going to fit into the range of 2-5 or 5-12 as the only categories established? Maybe it can say "under 2"?

B) You might consider a specific reference to Appendix B6.1 since there is normally a lot of flex in the leg openings of tot seats, and the probes should be pulled through with a 50 lbf. gauge to check for entrapment.

C) change from "unoccupied" to "occupied" for reasons stated earlier in 12.6.2 above.

SECTION 12.6.4 TIRE SWINGS; Replace your Figure 23 with ASTM Fig. A1.24 for better clarification. The area of focus, in your illustration, is the furthest away and it should be made clear.

SECTION 12.6.5; The word "DUAL" means two, which does not address the hazard. The hazard is that the rings hang too far from the beam. Keep the original word "Swinging". Also, there is always the question of what the difference is between an "exercise ring" and an "overhead ring". You should define it with a statement such as "The hazard is such that when not in use, a ring or bar that is hung far from the beam can be taken and swung at another child and cause impact injuries." and / or the statement "Exercise rings or bars are generally suspended by long chains, whereas overhead hanging rings can be suspended by very short chains such as one or two links."

APPENDIX "A"; This is great, but only if identified as a "routine maintenance checklist". Make a statement that it by no means is an audit checklist since it does not list all of the hazards to check for since it is missing Sections 9.3, 9.6, 10.1, etc., etc.. I also think it would be a good idea to reference the ASTM standard in this checklist for further items not covered.

APPENDIX "B";

Lower member ?

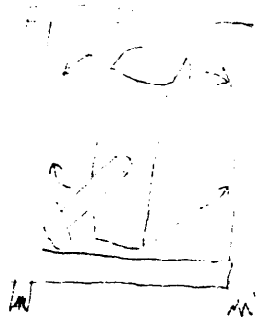
B1. GENERAL, 1st ¶); Can you address a maximum lower boundary height instead of just the ground, because I have seen low cross-pieces on the ground with an entrapment gap above it, as well as when fences have horizontal cross-pieces on the bottom that are 1" above ground. These are absolutely not hazardous entrapments, yet to correct them causes needless and expensive repairs. Mainly, people need to know where do we draw the line, at what height for the lower cross-piece? Please make a statement such as "The ground and any lower boundary up to ___" high are exempt." The kids can lay there, stuck, but certainly do not hang, even if panicked.

B.1 GENERAL, 2nd ¶); again, change the statement from 3.5" or <9" to "3.5 inches by 6.2 inches up to 9" in diameter" to correctly reflect the size of the probes & openings. See my comment for Section 9.6.1,

B.2.2, last (new) sentence; this does not allow for the 4" depth of penetration test. Also, can the inspector hook up a 50lbf. gauge? Because of the recommendation to make these templates flat has led people to forget about the 4" depth & 50 lbf. tests. I suggest that you only refer to the three dimensional probes.

B.3; add "(3) the opening admits the Small Torso Probe but the ground is the lower boundary". RATIONALE; although this exemption is mentioned elsewhere, so are these two procedures. Your goal is to point out all three of the times that it "meets the recommendations", not just two of them.

B.4; People have been known to have a problem understanding "rotate", and they continue to pass openings if it will not rotate inside of the opening (which should obviously fail). They do not understand what "adverse orientation" means. May I suggest saying the second sentence this way; "While keeping it parallel to the plane of the opening, the probe should be moved in an attempt to penetrate the opening, i.e., major axis of the probe oriented parallel to the major axis of the opening."
See my illustration on the next page for the confusion with the current statement.
I understand it, but many others do not. A simple clarification may avoid a death!
Ditto this recommendation throughout the revision.



#77

B.6; You refer to flexible nets, but there are many more examples that may be overlooked. When you consider other areas where the opening "can be altered when force is applied", you see other examples such as vertical pipes on a pipe wall barrier, leg holes on tot seats, etc.. Please include these examples in this section.

B.6.1;
A) I think you want to refer to Figure B-7 and B-8, as in the current guidelines, not B-8 and B-9, right?

B) The problem with the probes is that they do not come with a 50 lbf. gauge or a hookup for one. Again, see my comments from Section 9.2, part B). If you refer to a source, it should be more than just one, that's all.

B.6.2; Add a "(3)". See above comment in B.3

APPENDIX "C", page 44; Consider whether or not you want to recommend not installing this type of surfacing over hard surfaces. See my comment in Section 4.5.

OTHER RECOMMENDATIONS

1) In response to my letter of 1/2/97, John, you mentioned that you may consider a statement regarding proper usage and behaviors in signage, since improper behavior is a major cause of accidents. Can you include this in this revision? Any way that I can help incorporate that into the revision for you?

2) Can you include a statement for arch climbers, flexible climbers, and spiral climbers, that the final height should be no higher than the platform height? As we had discussed before, it needlessly allows the user to go higher than the height of the platform and increases the fall height as well as surfacing depth. These pieces can be designed so the user can grab onto handholds to facilitate his transition.

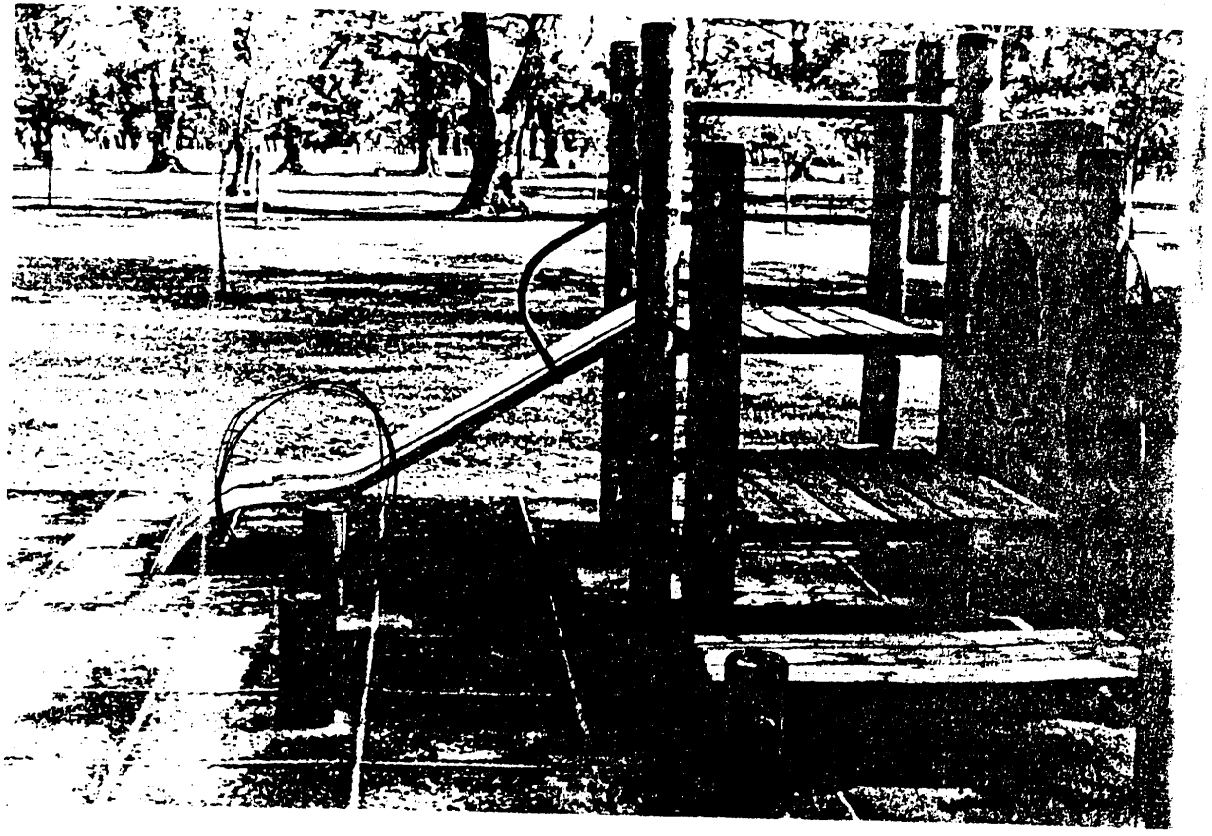
John, can you let me know, in writing, if you feel that I had some valid comments and if I brought up any points that no one else did? It would mean a great deal to me! Thanks!

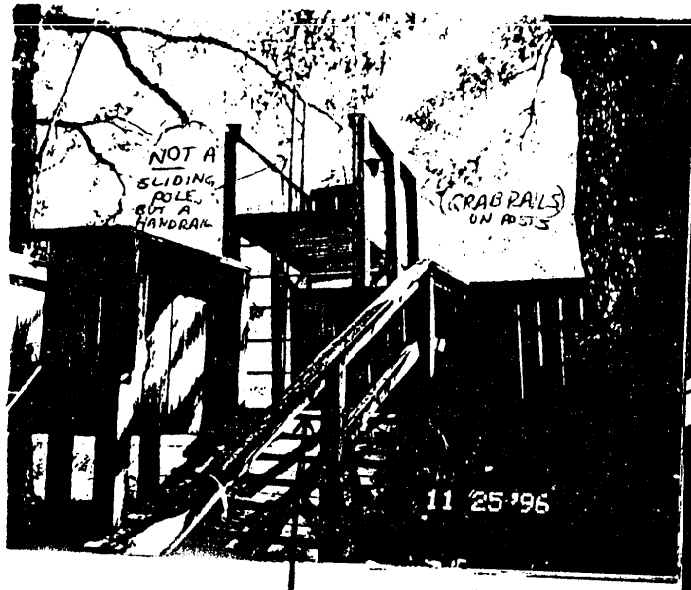
Sincerely,

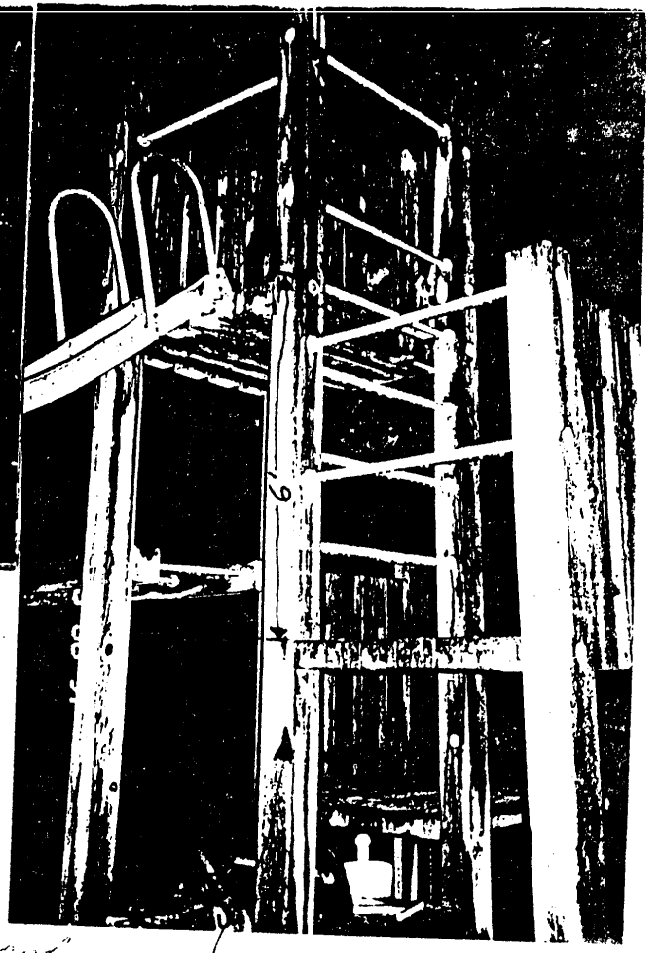
SCOTT BURTON

Section 5.1.7 comments on USE ZONES FOR COMPOSITE STRUCTURES

Person fell from side of slide onto adjacent climber posts and nearly broke neck. Lawsuit is filed. They removed all of the climber, except the posts when this picture was taken. The issue of the posts being buried is irrelevant. The facts remains that whether they were posts, a climber, a platform, another slide, etc., it was too close to the slide.





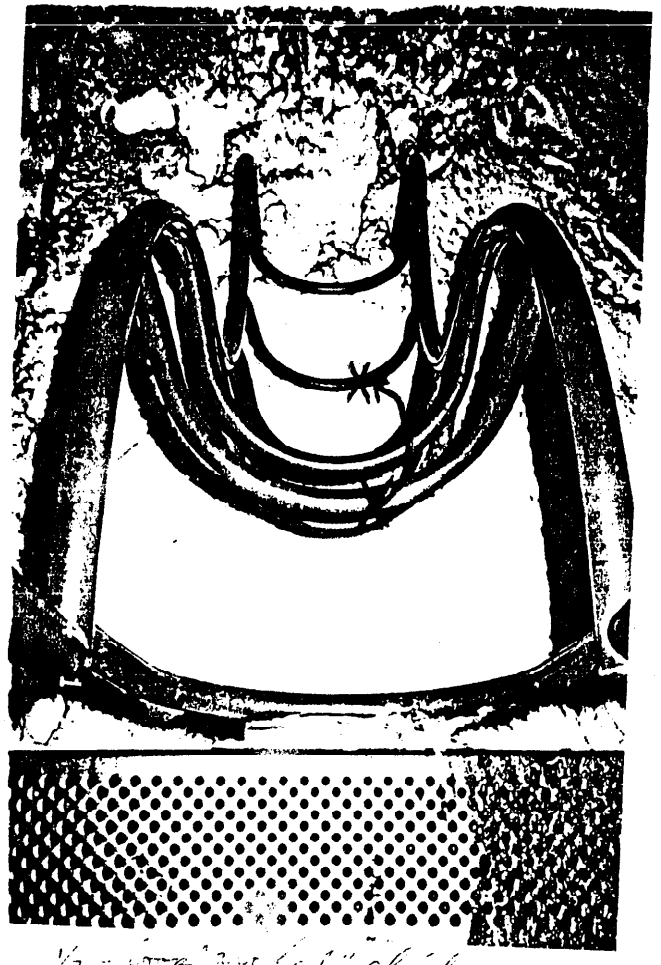


Actually, this deck is at ground level, then the ground (hill) tapers down. Main point is, it is 7'6" from ~~to~~ lower deck to upper deck.

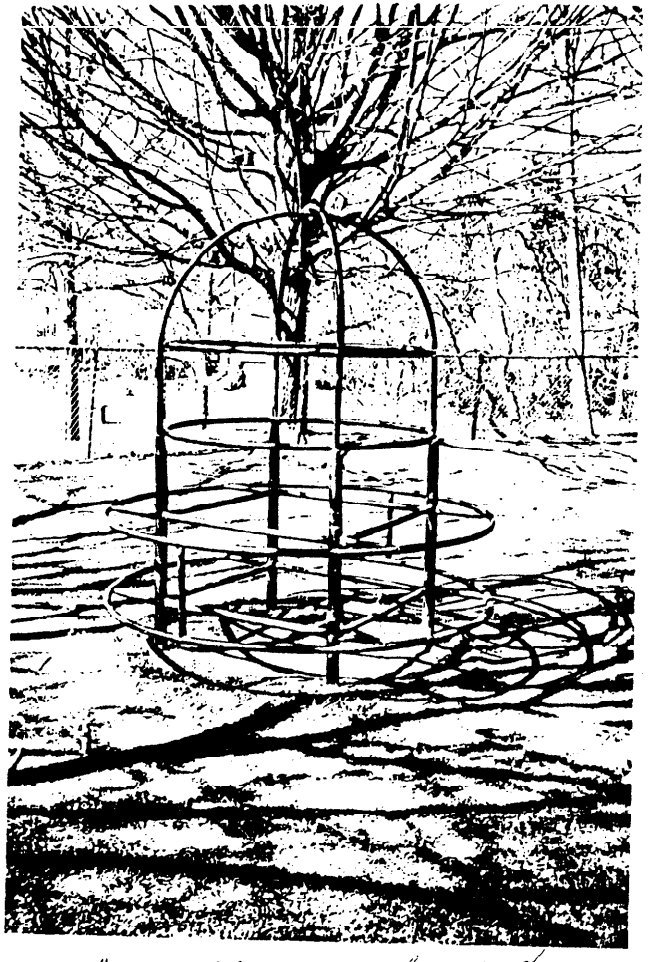
Some consider lower deck as above ground level since it begins to taper off ~~[illegible]~~ under the deck.

Section 11.3 (E) last paragraph

(6' apart)



½ [illegible] "[illegible]" climber seen [illegible] view. User can [illegible] about 5½ feet [illegible] 'X' to the [illegible]

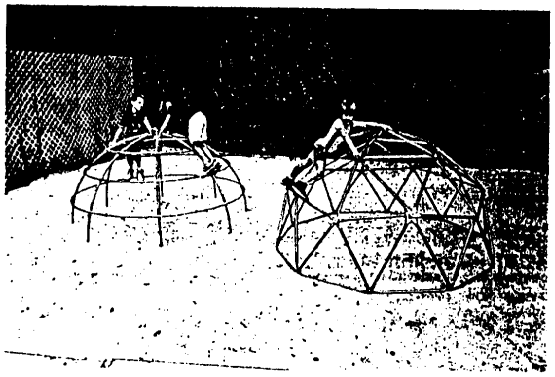


"Tower Climber" outlawed due to [illegible] rule. Many [illegible]

SECTION 12.1.2
(MY PG. 1 of 2)

METAL CLIMBERS

FREE INSTRUCTIONAL SAFETY SIGNS INCLUDED WITH EVERY PLAYGROUND PURCHASE!

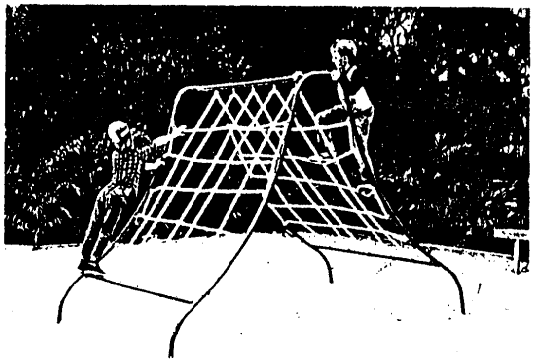


GEODOMES

Choose between the unique [illegible] shown on the left or the standard bolted style on the right. Bolted style is color coded for easy site assembly. All rungs are 1⅛" o.d. galvanized steel pipe and both are 4'H x 8' diameter.

[illegible] #91; bolted style

*CUSHIONED AREA; 20' DIAMETER



PLAY-NETS

[illegible] allow kids to have loads of fun while getting the exercise they need! Made of durable rope with customized connectors. Frame is 1⅛" o.d. galv. painted pipe. All are 6' high.

Pictured above is #460.

#460; sgl., 11'Lx7'6"W

#461; dbl., 22'Lx7'6"W

#462; Super, 22'Lx30'W

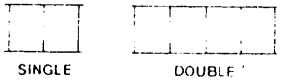
*CUSHIONED AREA;

#460; 23'L. X 20'W

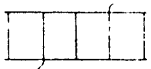
#461; 34'L. X 20'W

#462; 34'L. X 42'W.

SINGLE

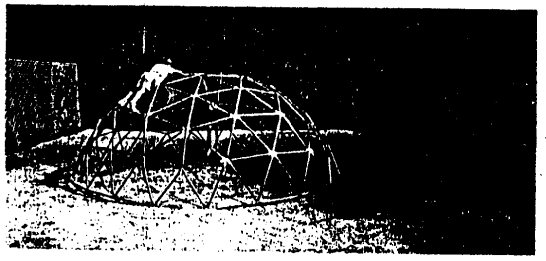


SINGLE DOUBLE



SUPER PLAYNET

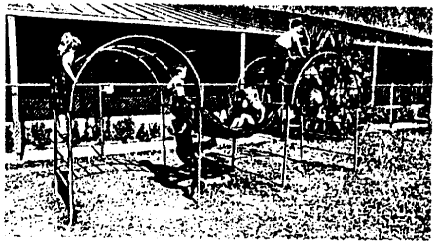
SECTION 12.1.2 (Pg. 2 of 3)



SUPERDOME

This is one bundle of safe fun! Bolted style is 6'6"H. x 16' diameter. Not too high for kids! All rungs are 1⅛"o.d. galvanized steel pipe.

#43; Superdome *CUSHIONED AREA; 29' DIAMETER



MAGIC CARPET

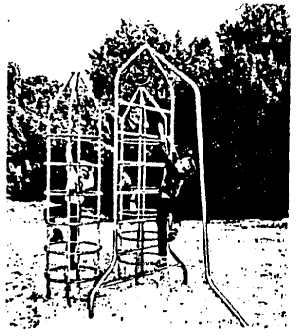
Our **UNIQUE** climber is the only one that has a standard SAFETY TIRE NET to protect possible falls! Legs are 1⅛"o.d. and side rails are 1⅛"o.d., all galvanized steel pipe. Ladders are on each end for easy traffic flow!

#180; 18'L.x5'2"W.x6'H

*CUSHIONED AREA; 30'L. X 17'W.

The center (concave) pipe section is reinforced with tires due to a history of falls to earth

[illegible] equipment over hard surfaces, such as [illegible] fall to these surfaces can result in [illegible] Acceptable mats or a minimum [illegible] page) of well maintained loose surfa



SPACE SHUTTLE

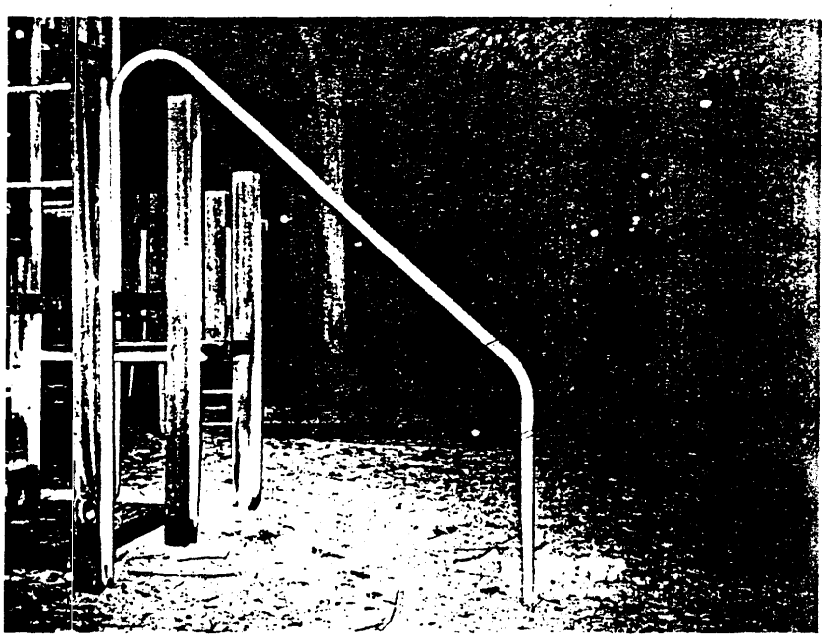
This big spaceship really attracts the youngsters! Rocket "engines" are climbers, as well as the ship's body. The tail is a firepole.

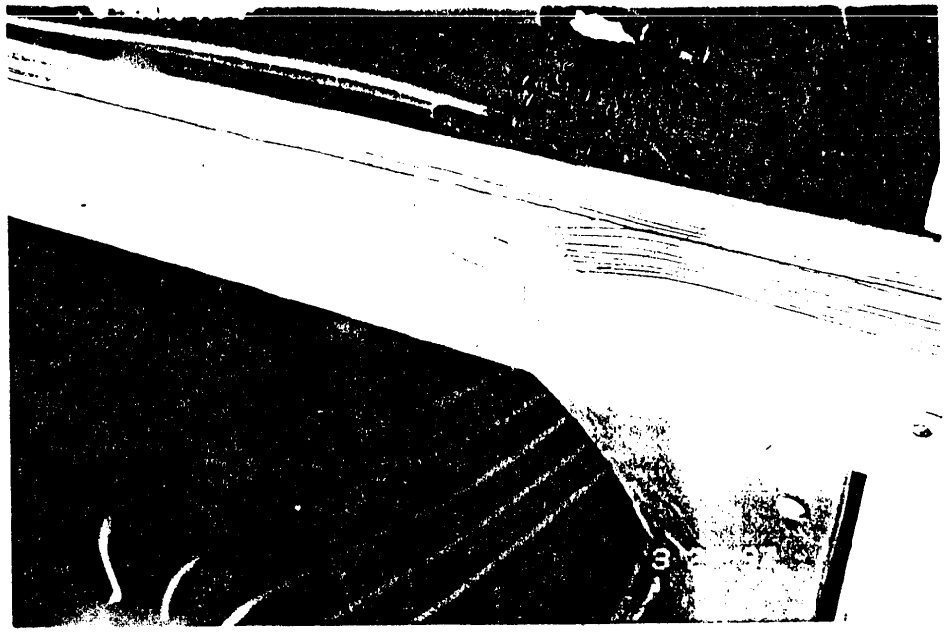
#183; 7'L. x 5'w. x 8'H

*CUSHIONED AREA; 19'L. X 17'W.

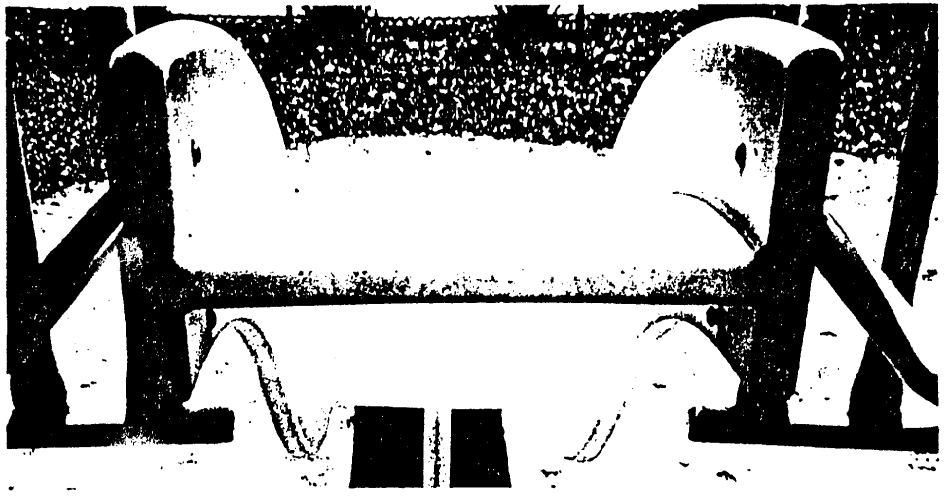
Fig. 1.6 [illegible]

[illegible]





SECTION 12.4.3



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NATIONAL PLAYGROUND SAFETY INSTITUTE
A Program of the National Recreation and Park Association
2775 South Quincy Street, Suite 300
Arlington, Virginia 22206
Telephone: (703) 820-4940 *Fax: (703) 671-6772*

July 7, 1997

John Preston
Consumer Product Safety Commission
Washington, D.C. 20207

Dear John:

I am writing on behalf of the Executive Committee of the National Playground Safety Institute to express our sincere concern regarding the differences between the proposed draft of the CPSC Handbook for Public Playground Equipment and the ASTM F1487-95 Standard.

As you are well aware, our institute is basing its curriculum around the CPSC Handbook and the ASTM Standard. The differences between the two documents create confusion for our students. They want to know which document is more correct. Last October we were encouraged to believe that it was the intent of the Consumer Product Safety Commission to eliminate as many of these discrepancies as possible. Upon reviewing the proposed handbook there appear to be even more discrepancies than before. Many states are mandating compliance with the CPSC Handbook and requiring that equipment sold in their state be IPEMA certified. It is important for the industry to have the two documents compliment each other rather than contradict, especially now that attempts are being made to harmonize our standard with Canada.

The curriculum for our institute will have to change once the revised handbook is published as will several of our publications that reference the existing handbook. We would appreciate it if you could let us know in advance of publication what changes you are making so that we might have a head start in changing our curriculum and in making editorial changes to our text books. This is especially important for our institutes in California as the proposed implementation of their 1991 law regarding playgrounds mandates compliance with the most recent CPSC Guideline.

Thank you for your kind consideration of this matter and good luck! I look forward to seeing you in September.

Best Regards,

Teri Hendy
Chairperson

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July 9, 1997

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

Dear John:

Had one additional comment on your proposed new draft of the CPSC Guidelines - this on section 12.1.5 Horizontal Ladders and Overhead Rings.

The very last sentence of that section states that "the use of rungs for takeoff in landing is not recommended". This is fine and understandable when one end of the horizontal ladder is attached to a platform on a composite unit. When you have the free standing horizontal ladder however, you need the rung for take off. Could that last sentence be reworded to state that one end of the horizontal ladder opposite from the take off end should be free of any obstruction?

I am sure you have already received many comments objecting to the limitation of the height of horizontal ladders to 78" for school age children. I concur, and hope that you do change back to the ASTM allowable maximum height of 84".

Best regards,

Jay E. Blanke
Marketing Director

JEB/kas