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**LOG OF MEETING
DIRECTORATE FOR LABORATORY SCIENCES**

SUBJECT: ASTM F08 Committee Meeting

DATE OF MEETING: May 4-8, 2008

DATE OF LOG ENTRY: May 12, 2008

PERSON SUBMITTING LOG: Richard McCallion

LOCATION: Denver, Colorado

CPSC ATTENDEE: Richard McCallion

NON-CPSC ATTENDEE(S): Members and Guests of ASTM F08 Committee on Sports Equipment and Facilities. Attendance lists were not available at the time of this report.

SUMMARY OF MEETING:

CPSC staff attended various task group and subcommittee (s/c) meetings in part or in full during the 3-day meeting. They included:

- ASTM F 08.17 on Trampolines
- ASTM F08.53 on Headgear and Helmets (Task group, Shirtsleeves, and s/c meetings)
- ASTM F08.63 on Playground Surfacing Systems.
- Fifth International Symposium on Safety in Ice Hockey

ASTM F 08.17 on Trampolines

Trampoline Subcommittee
5/8/2008

The committee is proceeding with updates to standards including new requirements for steel structural members. Many of the changes being discussed are the result of large retailers such as Wal-Mart developing internal product testing standards. They have expressed a desire to bring the ASTM standards under this group more in line with their standards, which they believe to be stricter.

ASTM F08.53 on Headgear and Helmets

Helmet Labeling Task Group

5/6/2008

The draft guideline was balloted and received 2 negatives and multiple affirmative with comment votes. The first negative was regarding SI units not being the prevailing units in the guideline. This was found non-persuasive. Both SI and U.S. units are included. The second negative took exception to the statement regarding destruction and replacement of damaged helmets. Multiple impact helmets are subject to this guideline and would require replacement upon impact. The task group found this negative persuasive and decided to re-work section 4 of the guideline to provide an exemption for multiple impact helmets.

Equestrian Headgear Task Group

5/7/2008

The group is working on a crush provision to be added to F1163. Many equestrian head injuries are the result of the rider being stepped or rolled on by a horse. The intent of a provision for crush protection is to lessen injury severity. Discussions included ideas on how to perform the lab testing. This could include a dynamic or static test in addition to testing with or without a headform in the helmet. A couple of test labs will look at the different test scenarios in addition to crush provisions already developed.

The task group is working on updating the standard and was concerned about possible legislation to incorporate ASTM F1163 as a federal regulation before completing the updates.

Headgear Shirtsleeves

5/7/2008

The shirtsleeves meeting involved presentations on new developing technology, continuing testing by test labs, and changes to various standards. An MIT engineering student presented his research on helmet liners that utilize fluid channels. The idea is to use tube like structures with a glycerin medium to distribute the impact forces over a wider area of the helmet. The research is in a very early stage and will continue. There are many issues such as weight and temperature issues to be researched. There was minimal discussion on possible toxins in helmet materials. Some manufacturers are concerned based on the current toy issues.

Chemicals that deteriorate the foam liner of a helmet were the topic for more concern. Randy Swart of BHSI applied a common insect repellent product to various places and in varying quantities on helmet liners. It dissolved to liner material but did not seem to have an effect on the impact attenuating ability of the helmet. There is also concern that hygiene products may have the effect of reducing the effectiveness of a helmet.

There is continued interest to see how helmets perform at low velocities especially in regard to concussive injuries. The first round of impact tests showed a linear relationship with higher velocities in an ambient environment. Dave Halstead presented testing he performed in

regard to rotational injuries. He believes there may be a relationship between rotation and concussion that could result from very low impact energies. The lower velocity impact tests are continuing in a second round. Standard changes include the roll-off requirements being balloted and the addition of "B" and possibly "C" size headforms being added to F1146. The task group recommended that a letter be sent to Congress to change the current bills regarding equestrian helmets to not require hard shells only and to provide a way to periodically update the standard.

Headgear Subcommittee

5/8/2008

The committee asked CPSC staff about the possibility of updating the bike helmet standard, and staff indicated that there was no plan for an update at this time. If CPSC is directed to develop new helmet regulations, staff indicated that we would welcome ASTM input.

ASTM F08.63 on Playground Surfacing Systems

Playground Surfacing Subcommittee

5/8/2008

George Sushinsky, formerly of CPSC, is now the chair person for the committee. Most of the meeting focused on a discussion of negatives received on balloting of F1951 on surfacing accessibility. This standard will more than likely be a continuing major topic of discussion in the next meeting. I attended a task group meeting regarding the development of a playground surfacing flammability standard. A preliminary draft was developed using existing floor surface test procedures. The task group will continue working toward standard development but resolution will not be easy as the subcommittee is very polarized. CPSC staff is not aware of any injuries resulting from surfacing fires; most fires result in property damage.

Fifth International Symposium on Safety in Ice Hockey

This was a two day event in which CPSC staff attended the second day only. The second day of the seminar included presentations on helmet technology and injury studies, in addition to other issues that relate to hockey injuries. There were multiple presentations relating to the current and future technology of hockey helmets. A study on the shelf life of helmets revealed no significant reduction in impact attenuation over several years. This study was performed in a controlled room temperature environment and performed over five years. Two different test methods were compared in another study. The methods used a typical monorail drop and a Hybrid III head and neck with a pendulum impactor. There were also two different reports on continuing studies examining new helmet liner materials.

Injury studies include head and neck injuries sustained in various scenarios. Equipment other than helmets is being scrutinized to determine how padding such as elbow pads can be designed to reduce head injuries. Elbow impacts to the head are common during normal play. Increasing the padding amount and stiffness may help reduce head injuries in the future.

However, concussive injuries are the biggest focus for researchers at this time. There were three or four presentations on concussions. Current research is still focusing on the causes of these types of injuries; however, helmet designers are starting to work on helmets and materials to deal with an increasing number of concussive injuries to sports participants. Some of the increase was attributed to better diagnostics. It was also noted that part of the increase could be attributed to the reduction of catastrophic injuries; i.e., that helmets reduce catastrophic injuries that leave a user with a less serious concussion. Regardless of the reason, concussive injuries are the main focus of many in the helmet industry.

The last presentations were on legal aspects of hockey injuries with respect to equipment upkeep, facilities conditions, and player practices. The “Heads Up, Don’t Duck” program was discussed during this part of the symposium. This program teaches hockey players to keep their heads up prior to hitting the boards, goal, or other player to reduce the chance of neck injury.

Overall, helmet designs and injury data for sports like hockey and football typically propagate across to different activities and help create better safety equipment. Some of the developments from hockey are currently being adapted in the next generation of bike helmets. Specifically, the presentations on new materials and testing were presented again in the helmet subcommittee meeting.