

## BULLETIN - ICE WORKER HEAD PROTECTION

January 2012

*The Canadian Recreation Facilities Council (CRFC) represents 13 provincial/territorial member recreation facility associations across Canada and has elected to release this awareness bulletin to encourage internal workplace discussions and action on a subject that is considered high risk for the recreation profession.*

*\*\*\*This bulletin is intended for information purposes only and should not be considered\*\*\*  
a sole source for policy and/or procedure development.*

*In Canada some sixty thousand workers get injured annually due to fall related accidents. This number represents about fifteen percent of the "time-loss injuries" that were accepted by workers' compensation boards or commissions across Canada. Not mentioning a great economical loss, it amounts for a lot of pain and suffering and sometimes (much too often) even death." All these, in most of cases, do not have to happen. What is needed is:*

- *understanding how fall accidents happen,*
- *identifying the trouble areas, and*
- *eliminating or minimizing hazards of falling (Source: CCOHS)*

Recreation ice facilities are encouraged to review the **Personal Protective Equipment (PPE)** needs of workers who conduct any type of work on the ice surface.

### **History of Head Protection in Ice Arenas**

Rarely has head protection been worn by ice facility workers over the years. Head protection today is still not considered to be fashionable or essential. However, times and the arena industry has changed.

#### Headgear in Hockey:

*Although unconfirmed, it may have been defenseman George Owen who wore a leather helmet in his first season with the Boston Bruins in 1928. Before that, some players wore headgear for looks -- and it wasn't always helmets that the players put on. Quebec's Herb Scott wore a pink handkerchief around his head in a game against Ottawa in 1892. Expecting rough play in a Stanley Cup game in 1905, referee Mike Grant wore a construction worker's hardhat. Defenseman Johnny Crawford hid a baldhead under a leather helmet in the 1940s. Going without a helmet was a dangerous thing to do. Countless injuries could have been avoided and more than a few hockey careers wouldn't have ended so early, if all players had worn helmets. It wasn't until the 1970s that the NHL created a rule that any players signing on for the NHL after June 1, 1979, had to wear a helmet. Those already playing were allowed to make their own choice about whether or not to wear a helmet.*

*Mr. Craig MacTavish, of the St. Louis Blues, was the last bareheaded NHL player, skating his final season in the 1995-1996 season.*

*Source: <http://www.collectionscanada.ca/hockey/kids/024003-2000-e.html>*

### **What Does Canada Occupational Health and Safety Regulations Say?**

The Canada Occupational Health and Safety Regulation does not speak directly for the need to wear head protection by workers in ice facilities. However, it does reference where there is a hazard of head injury in a work place, protective headwear that meets the standards set out in CSA Standard Z94.1-M1977 shall be used. CRFC member organizations have noted an increase in the use of head protection by arena staff. Some of these cases may be a direct result of incident/accident reports while others in the industry are merely gauging the trend toward safety prevention and have taken action.

### Is it Really Necessary?

The *City of Mississauga, Ontario* received “orders” from the *Ministry of Labour (MOL)* to have their skate patrol staff wear head protection. In response, effective March 2006, the *City of Mississauga* requires all skate patrollers to wear CSA approved helmets. The *City of Ottawa, Ontario* requires that any worker that enters onto an ice surface must wear head protection. Other “orders” from the MOL include those to several school boards for the need to protect teachers who conduct supervisory duties on an ice sheet; and the need to wear head protection. *These examples indicate a higher expectation by government officials (and employers) toward worker protection in these environments.*



### Slips and Falls

Slips are primarily caused by a slippery surface compounded by wearing inappropriate footwear. Two types of slips occur throughout normal walking activity. The first of these occurs as the heel of the forward foot contacts the walking surface, as the front foot slips forward the person falls backward.

The second type of fall occurs when the rear foot slips backward. The force to move forward is on the sole of the rear foot, as the rear heel is lifted and the force moves forward to the front of the sole, the foot slips back and the person falls.

### Understanding the Coefficient of Friction

The force that allows you to walk without slipping is commonly referred to as “traction.” Experience shows that dry concrete sidewalks have good traction, while icy surfaces or freshly waxed floors can have low traction.

Technically, traction is measured as the “coefficient of friction” (COF). The coefficient of friction depends on two things: the quality and condition of the walking surface and the soles of your shoes. A higher coefficient of friction means more friction, and therefore more traction.

To prevent slips and falls, a high coefficient of friction (COF) between the shoe and walking surface is needed. On icy, wet or oily surfaces, the COF can be as low as 0.10 with shoes that are not slip resistant. A COF of 0.40 to 0.50 or more is needed for excellent traction. To put these figures in perspective, a brushed concrete surface and a rubber heel will often show a COF greater than 1.0. Leather soles on a wet smooth surface, such as ceramic tile or ice, may have a COF as low as 0.10. *Shoes with soft rubber soles and heels with rubber cleats provide a high coefficient of friction (COF).*



### Behaviours that Lead to Falls

In addition to wearing the wrong footwear, there are specific behaviours that can lead to slips, trips, and falls. Walking too fast or running can pose a significant risk for fall injuries. In normal walking, the most force is exerted when the heel strikes the ground, but in fast walking or running, more force is on the heel of the front foot which pushes harder off the sole of the rear foot; thus, *a greater COF is required to prevent slips and falls.* Rapid changes in walking direction create a similar risk.



Anyone can fall, but the risk of falling becomes greater with age. As a worker ages stability and balance is affected and more falls can occur without having prevention measures in place.

Other problems that can lead to slips, trips and falls are:

- distractions;
- not watching where one is going;
- carrying materials that obstruct view;
- wearing sunglasses in low-light areas;
- failure to use handrails or the pull handle on an ice resurfacer; and
- improper mount/dismount procedure on the ice surface or in the storage area.

These and other behaviours can lead to falls, injuries, or even death.

NOTE: When mounting or dismounting the ice resurfacer use the proper 3-point contact method. *The Three-Point System means that three of your four limbs are in contact with the ladder or vehicle at all times, either one hand and two feet, or two hands and one foot; only one limb is in motion at any one time; always step down backward, never "jump" or "fall" down forward.*

### Learning How to Fall

Naturally, the goal is not to slip, trip or fall but the possibility of a fall still exists. Staying safe may involve:

▪ Wearing proper footwear	▪ Keeping both hands free
▪ Walking slowly	▪ Use ice cleats
▪ Taking small steps	▪ Considering use of head protection
▪ Being aware of footing	

When falling, the objective is to have as many square inches of your body make contact with the surface as possible, thus, spreading out the impact of the fall.

- Tuck your chin in, turn your head, and throw an arm up. It is better to land on your arm than on your head.
- While falling, twist or roll your body to the side. It is better to land on your buttocks and side than on your back.
- Keep your wrists, elbows and knees bent.
- Do not try to break a fall with your hands or elbows.

Report, record and thoroughly investigate all slips, trips and falls, with or without injury; take corrective action immediately to prevent similar incidents from occurring.

### Which Workers May Require Head Protection While on the Ice?

Each workplace should assess the safety of workers performing work on or near the ice surface. This includes:

- Ice resurfacer drivers
- Ice technicians
- Assistants to facility staff
  - ✓ Ice scrapers
  - ✓ Net peggers
- Timekeeping staff walking across the ice surface to and from their work stations
- Skate patrol staff

Consideration should also be given to special event staff (volunteer or other) and government officials who may be conducting facility inspections on the ice surface as part of their job.

### Is Head Protection the Only PPE to Consider?

Other PPE such as ice cleats, gloves, eye protection, hearing protection and long pants and shirt sleeves may also be required when working on the ice. Consider these items when conducting a Job Hazard Analysis for arena attendants.

*Installation of protective netting around the dasherboard system in ice arenas is another practical measure to protect those who work and play in these environments.*

### Controlling Hazards With PPE

Where a hazard is identified, try to control that hazard at the source or between the source and the worker. Before turning to PPE, consider the following:

- eliminate the hazard through engineering controls at the source, this could mean having to modify or replace equipment
- substitute hazardous materials or substances with less or non-hazardous alternatives
- redesign the work process (e.g. modify sequence of tasks to improve safety)
- isolate the hazardous agent (e.g. designated room or local ventilation)
- develop administrative controls (e.g. limit the time exposed to the hazard)



### Selecting the Right On-ice Head Protection

The CRFC is not an authority on head protection. Each workplace must assess their workplace activities and decide upon the appropriate personal protective equipment for workers by way of a job hazard assessment. Include any known or potential hazards that a worker might encounter throughout their daily activities.

Managers, or the most qualified staff person, should first observe the workplace and the tasks being performed. Employees should be invited to participate in the review process. A review of incidents and accident reports is an important part of the policy and procedure development.

***It is important to note that a hazard assessment is not a one time event and that ongoing review is an important part of the Internal Responsibility System.***

For on-ice activities any form of head protection that is selected must be CSA approved and include a chinstrap assembly. Include the proper use and care of the selected head protection and the chin assembly attachment in any policy that is created.

- Train workers to properly inspect the headwear prior to using it.
- Heat, solvents, paint, stickers, sunlight or impact can all weaken the shell of the headgear.
- Replace headgear immediately after impact occurs even if there is no visible sign of failure.
- Regularly clean headgear as dirt and stains may hide in small cracks.
- Do not alter headgear in anyway from its original design.
- Store headgear properly when not in use.
- Headgear may pose a health and safety risk for (head-related) communicable disease. Consider a system of disinfection for the equipment; or limit use to one worker only.

### Recommendations

Establish and implement policies and practices for all recreation facility staff. The following recommendations are provided for your consideration:

- Provide safety training for all new employees.
- Retrain all employees on a regular basis.
- Require that all on-ice workers wear proper footwear for their job duties and work environment. Working with an edger may require wearing ice cleats.
- Report and thoroughly investigate any slips, trips and falls, with or without injury. Take corrective action and provide additional training to prevent a similar incident.

Any piece of PPE will only work if it is worn consistently and correctly. Protective headgear must fit snugly and be properly adjusted for the person wearing it. All straps should be firmly in place at all times. The head piece should be thoroughly inspected prior to each use and stored properly when not in use.

#### Sources:

Canadian Centre for Occupational Health & Safety (CCOHS)  
 City of Ottawa Helmet Policy and file staff pictures  
 City of Mississauga Arena Committee  
 CSA Z94.1-05 Industrial Protection Headwear-Performance, selection, care and use  
 Education Safety Association of Ontario (ESAO)  
 Ontario Recreation Facilities Association Inc.  
 Preventing Injuries from Slips, Trips and Falls - University of Florida  
 Town of Halton Hills Draft Helmet report  
 Worker Safety Insurance Board (WSIB)  
 Photo Credits: City of Ottawa

#### ©Canadian Recreation Facilities Council, 2012

The information contained in this reference material is distributed as a guide only; it is generally current to the best of our knowledge as to the revision date, having been compiled from sources believed to be reliable and to represent the best current opinion on the subject. No warranty, guarantee or representation is made by CRFC as to the absolute correctness or sufficiency of any representation contained in this reference material and CRFC assumes no responsibility in connection therewith; nor can it be assumed that all acceptable safety and health measures are contained in this reference material, or that other or additional measures may not be required in particular or exceptional conditions or circumstances.

Reference to companies and products are not intended by the publisher as an endorsement of any kind.

T. 416-426-7062 F.416-426-7385  
[www.CRFC.ca](http://www.CRFC.ca) [info@CRFC.ca](mailto:info@CRFC.ca)