



## SSU 2004-06

### PREVENT SLIP, TRIP AND FALL INJURIES

*By SeaBright Insurance Loss Control*

**A** slapstick comedian slips on a banana peel, and everyone laughs. A schoolboy stumbles and the kid behind him cracks, "Have a good trip?" But slips and falls are no laughing matter. Slip and fall injuries are the third leading cause of disabling work injuries in the U.S. in all types of business. Falls are the second leading cause of accidental death, after vehicle accidents, killing more than 14,000 people annually.

There are two basic types of falls: same level falls and elevated falls. We tend to concentrate on falls from elevation, since they can be very serious and sometimes fatal. But according to the Bureau of Labor Statistics (BLS), more falls occur from the same level, than from elevation, and many of these result in serious head injuries.

#### The Size of the Problem:

Falls on stairs, for example, are reported to result in more than 33,000 serious work injuries every year. The number of lost workdays from these incidents is staggering. According to the BLS, over 22% of slip/fall incidents resulted in more than 31 days away from work. Even injuries with less time loss than this have an impact on production, industrial insurance costs, and personal pain. In addition, when people slip while completing work tasks—and then recover their balance—they often suffer a muscle strain or back injury. These too can be serious, but are usually not reported as slip and fall accidents. If they were, the statistics for this problem would be even more significant.

#### Who Slips and Falls?

Gravity can get the best of anyone, on or off the job. Individuals who work on walking surfaces that are rough, irregular or unsteady are obviously at higher risk. But according to research, fall injuries are most likely to occur near the beginning or end of a person's working life. People at the beginning of their careers are still learning the ropes. New employees often worry more about doing a good job than about potential risks. On the other hand, veterans know the job so well that they sometimes overlook simple safety precautions. In either case, a slip or trip is most likely when workers are in a hurry or distracted. Supervisors must be aware of these risks and give attention to fall prevention, assuring that worker awareness is high.



## The Cause—Loss of Footing and Loss of Traction:

**Trip and Fall:** Loss of *footing* happens when there is less than full contact between the sole of your shoe and the surface that you walk or stand upon. Quite simply, walking is a matter of falling forward and catching yourself with one extended leg and foot; then repeating this with the opposite leg. We take these moves for granted, and in most cases *assume* that the surface we're walking on is level. But if an obstacle, such as clutter on the floor, a rock or snag on the ground, stops the forward motion of our front foot, we trip, stumble and fall. Of course, if we *see* the object, we can step over it. There are four major lessons to remember here:

1. Keep walkways clear of debris.
2. Keep work areas well lit, so obstacles can be seen.
3. *Watch* where your steps are taking you.
4. Wear shoes with adequate ankle support to assure the best control on uneven surfaces.

Most trips can be avoided if walking surfaces are smooth and free of clutter, and if walkers pay attention to where they are going.

**Slip and Fall:** Loss of *traction* can take place anytime you walk on an oily or slippery surface. With good friction between your shoes and the surface you stand or walk on, you'll have enough resistance to hold yourself upright on your center of balance, and also enable you to move forward solidly. But without this resistance, if your feet move even slightly out from under you, your center of balance becomes unstable. Gravity then seeks a more stable position for your body—which is usually on the floor or ground! Lessons to remember:

1. Keep floors and walkways clear of water, ice and slippery materials.
2. Require slip resistant shoes for people who work in potentially wet or greasy conditions or move rapidly from one type of walking surface to another.
3. Check the “static coefficient of friction” when purchasing slip-resistant shoes. This indicates the amount of slippage between the sole of the shoe and the floor surface as a person walks. OSHA recommends a minimum coefficient of 0.5, or even higher for tasks with greater risk of slipping. The best type of sole—neoprene, crepe, leather, soft or hard rubber—depends upon whether you walk principally on concrete, wood, tile, rough, smooth, wet or dry surfaces.
4. For those who work in outdoor, icy conditions, consider studded rubber pullovers for shoes and boots. These pull on and off easily by means of a heel tab and work like studded snow tires.

## How Can Supervisors Prevent Slip and Fall Injuries?

It isn't easy, because workers must understand both how to *prevent* these incidents and how to *recover from* such incidents as well. They need to train both their minds and their bodies. BLS research reports that 75% of workers with claims caused by falling had received no training in fall protection. Training that was provided merely focused on proper use of fall protection equipment when working at heights. Other traditional fall protection training has focused on keeping the worksite uncluttered.

When jobsite risks for slips, trips and falls are high, or when statistics show a significant number of accidents from falling, managers should plan, and supervisors should *support* and *promote* complete fall prevention and protection.

- **What Goes Into A Fall Prevention Program?**
  1. Determine if falling is a “problem” by examining company and industry data.
  2. Target types of workers who are most at risk.
  3. Strengthen the inspection and maintenance program to control exposure to falls. (Get your safety committee to use the attached checklist.)
  4. Investigate accidents and near misses that involve slips, trips and falls to establish root causes.
  5. Educate employees on ways to prevent falls.
  6. Teach employees the best ways to fall, in order to prevent injury.

- **Give Your Crew Tips For Smooth Walking on Slippery Surfaces:**

1. Take small steps—shorter than your foot length—to keep your center of balance under you.
2. Walk with your toes pointed slightly outward—which provides a wider, more stable base of support for maintaining balance.
3. Turn gradually—a sharp turn results in a sideways force that can cause loss of balance and a fall.
4. Keep *both* hands free for balance. Keep your hands out of your pockets.
5. Use “smart hands” to lower your center of gravity: Press your index and middle fingers together against your thumb together on each hand. Sounds weird, but it helps.
6. Wear shoes with good tread and slip-resistant soles, or studded shoe pullovers for walking on icy surfaces.

- **Teach the Smart Way To Use Stairs:**

1. Use the handrail from start to finish.
2. Avoid carrying loads on stairways—or only carry loads that you can see over.
3. Keep your eyes on where you’re going and descend stairs slowly—to keep your balance and identify tripping hazards.
4. Test potentially slippery stairs by tapping them with your foot. Going up or down, keep weight on your back leg until your front foot is safely on the next step. This maintains your center of gravity.

- **Follow the 3-Point Rule on Ladders:**

When ascending or descending the ladders of machinery or vehicles, always keep one hand and two feet, or one foot and two hands, on the ladder.

- **Post Reminders and Review Them In Safety Meetings:**

They don’t have to be fancy posters. Sometimes a message written on colored paper with a felt pen gets more attention than a fancy print job. Try posting statements in areas that have a tendency to become cluttered or where spills are common, such as, “IF YOU DROP IT, PICK IT UP!” or “IF YOU SPILL IT, WIPE IT UP!”

- **Borrow “How To Fall” Ideas from Athletes and the Martial Arts:**

As a supervisor, you may not be a trained athlete or an expert in Karate or Tae Kwon Do, but perhaps someone in the company is—and could talk to workers about how athletes fall without being seriously hurt. If the risk of slip & fall injuries is high, it may be worth bringing in an outside expert for a session. The cost is likely to be much less than a *single* slip/fall claim.

The “How To Fall” ideas included later in this issue aren’t the only solutions to every slip, trip and fall hazard. People vary widely in their flexibility, balance and agility—so there is no magic bullet. Considering how often slip/fall injuries take place, however, this problem deserves attention.

We don’t suggest providing karate lessons for employees, or gym mats for practicing how to fall, but discussions can be helpful. If employees can remember to “turn and roll” with a fall, to relax when they fall, to forget protecting the load and protect their body instead, they may avoid a painful injury.

**Gravity Always Wins, When It Comes To Falling  
— Unless You Are Prepared.**

# **A CHECK LIST TO HELP AVOID SLIP & FALL INJURIES ON YOUR CREW**

## **GENERAL VISIBILITY:**

- Are halls, stairways and walkways well lit?
- Are well-designed light switches handy for walkways that are not always lighted?
- Is lighting adequate in washrooms, where water spillage is likely?
- Does glare from floodlights or windows create poor visibility in work areas?

## **STAIRS:**

- Are handrails tight and at the proper level?
- Do handrails extend past the top and bottom step?
- Are white or yellow strips painted on the first and last step for better visibility?
- Are any steps very rough or defective?
- Are stair treads wide enough and are risers consistently spaced?
- Are materials stored on stairs, obstructing a clear passage?

## **FLOOR CONDITIONS:**

- Are any floor surfaces wet, oily, or highly waxed and polished?
- Is a good absorbent material available for spills, and handy to use?
- Are floor surfaces finished with non-slip coatings where spills are likely?
- Are any floor areas very rough, or do floors have holes and depressions?
- Do carpets or rugs have loose or frayed edges that may catch boots or shoes?
- Are aisles or pathways wide enough for easy passage and for carrying objects?
- Are ramps covered with non-slip surfaces or matting?
- Are walkways free from extension cords, air hoses and cables?
- Do boxes, containers, machine parts or other tripping hazards lie in pathways?

## **GROUND CONDITIONS:**

- Do tripping hazards exist, such as overlapped grating or bent plating?
- Do fall hazards exist, such as uncovered drains or manholes?
- Are holes or changes in ground elevation either filled or guarded?
- Are muddy walkways filled with gravel to reduce slipping?
- Are tools or materials left lying on the ground instead of properly stored?

## **EQUIPMENT:**

- Are vehicle steps or ladders of adequate size, surface and placement for safe dismounting?
- Are hand grips on ladders adequate for getting in and out of equipment?
- Have all ladders been checked for damage, and removed from service if they are unsafe?
- Do all employees who work around wet or greasy conditions wear slip-resistant footwear?
- Are studded shoe pullovers furnished to employees who work where walking surfaces are icy?

## **SAFE WALKING & WORKING PRACTICES:**

- Do workers use the Three-Point-Rule when getting in or out of vehicles and equipment?
- Do workers always *step*, rather than *jump*, off of vehicles, docks and platforms?
- Do workers use handrails from start to finish on stairways?
- Do workers know how to avoid slipping and falling, and how to avoid injury if they do fall?

# THE “ART” OF FALLING

## Tips From Sports & The Martial Arts



1. **Roll With The Fall (“Bruise the meat; don’t break the bones”):** Try to twist and roll backward, rather than falling forward. *Roll* onto the soft tissues of your buttocks, thigh and large back muscles, which protects the back of your head and your spine.
2. **Turn quickly to look at the spot where your body will hit the ground.** This will help turn your body to your side, rather than falling on your back. This move will also help to:
  - ... avoid impact to your spine;
  - ... prevent concussion to the head;
  - ... reduce the chance of whiplash to your neck.
3. **Relax as much as possible when you begin to fall.** You’ll be more likely to roll with the fall, than to strike an elbow or knee.
4. **Shout and Exhale (“Curse the Fall!”):** To reduce internal compression due to holding your breath, cry out as they do in the martial arts.
5. **Slap the Ground (“Hit it before it hits you!”):** Don’t “stiff-arm” the wall, floor or ground when you fall. “Slap” the surface with your extended palm and inner forearm just before impact. This maneuver helps to:
  - ...spread the impact;
  - ...reduce the force of the fall;
  - ...avoid wrist, elbow and shoulder dislocations.
6. **Toss the Load (“Free your arms”):** Protect yourself, instead of objects being carried, by letting go or tossing them clear when beginning to fall. The potential cost in damage to materials, or in clean up time, is almost always less than the cost of an injury.