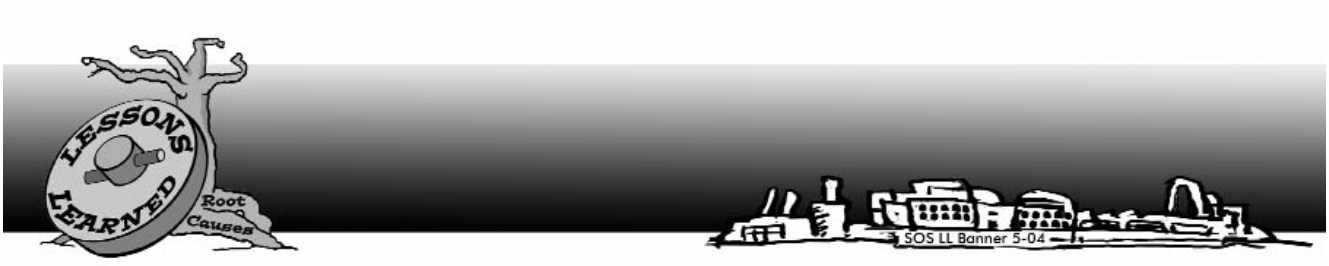


# Worker Twists Ankle on Uneven Walkway

## Purpose

To share "lessons learned" gained from incident investigations through a small group discussion method format.

To understand "lessons learned" through a Systems of Safety viewpoint.

TONY MAZZOCCHI CENTER
FOR HEALTH, SAFETY AND ENVIRONMENTAL EDUCATION
A PROJECT OF THE UNITED STEELWORKERS AND THE LABOR INSTITUTE

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**Lessons Learned**

**Volume 09, Issue 01**

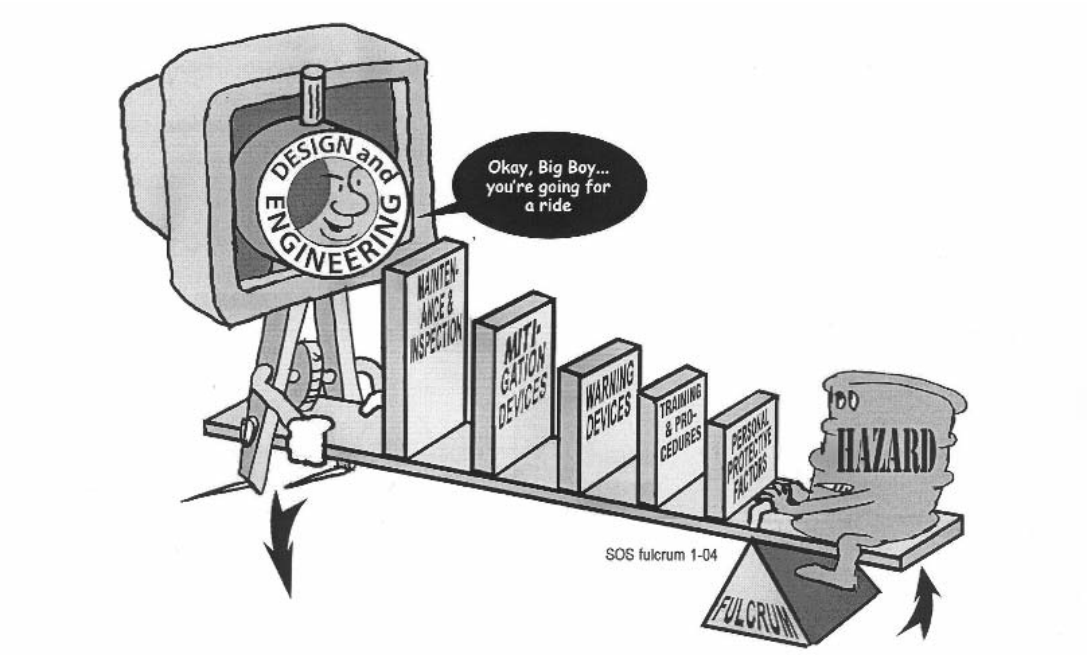
**Background Information**

Before beginning this Lessons Learned, please review this and the next page which contain information that will introduce the concepts of Lessons Learned and Systems of Safety.

Creating a safe and healthy workplace requires a never ending search for hazards that sometimes are not obvious to us. These hazards exist in every workplace and can be found by using various methods. Lessons Learned are just as the name suggests: learning from incidents to prevent the same or similar incidents from happening again.

**Systems Are Not Created Equal: Not equal in protection and not equal in prevention.**

Using our Systems Focus to uncover system flaws or root causes is only one part of controlling hazards. We also need to look at the systems involved to decide on the best way to deal with the problem. The most effective way to control a hazard is close to its source. The least effective is usually at the level of the person being exposed. The system of safety in which the flaw is identified is not necessarily the system in which you would attempt to correct the flaw.



| Major Safety System | Design & Engineering | Maintenance & Inspection | Mitigation Devices | Warning Devices | Training & Procedures | Personal Protective Factors |
|---|---|---|---|---|---|---|
| **Level of Prevention** | **Highest—the first line of defense** | **Middle—the second line of defense** | | | | **Lowest—the last line of defense** |
| **Effectiveness** | **Most Effective** | ← | | | → | **Least Effective** |
| *Goal* | *To eliminate hazards* | *To further minimize and control hazards* | | | | *To protect when higher level systems fail* |
| **EXAMPLES OF SAFETY SUB-SYSTEMS**** | **Technical**<br><br>Design and Engineering of Equipment, Processes and Software<br><br>Management of Change (MOC)**<br><br>Chemical Selection and Substitution<br><br>Safe Siting<br><br>Work Environment HF<br><br>**Organizational *(must address a root cause)***<br><br>Staffing HF<br><br>Skills and Qualifications HF<br><br>Management of Personnel Change (MOPC)<br><br>Work Organization and Scheduling HF<br>Work Load<br><br>Allocation of Resources<br><br>Buddy System<br><br>Codes, Standards, and Policies** | Inspection and Testing<br><br>Maintenance<br><br>Quality Control<br><br>Turnarounds and Overhauls<br><br>Mechanical Integrity | Enclosures, Barriers Dikes and Containment<br><br>Relief and Check Valves<br><br>Shutdown and Isolation Devices<br><br>Fire and Chemical Suppression Devices<br><br>Machine Guarding | Monitors<br><br>Process Alarms<br><br>Facility Alarms<br><br>Community Alarms<br><br>Emergency Notification Systems | Operating Manuals and Procedures<br><br>Process Safety Information<br><br>Process, Job and Other Types of Hazard Assessment and Analysis<br><br>Permit Programs<br><br>Emergency Preparedness and Response Training<br><br>Refresher Training<br><br>Information Resources<br><br>Communications<br><br>Investigations and Lessons Learned<br><br>Maintenance Procedures<br><br>Pre-Startup Safety Review | Personal Decision-making and Actions HF<br><br>Personal Protective Equipment and Devices HF<br><br>Stop Work Authority |

HF - Indicates that this subsystem is often included in a category called Human Factors.
* There may be additional subsystems that are not included in this chart. Also, in the workplace many subsystems are interrelated. It may not always be clear that an issue belongs to one subsystem rather than another.
** The Codes, Standards and Policies and Management of Change subsystems listed here are related to Design and Engineering. These subsystems may also be relevant to other systems; for example, Mitigation Devices. When these subsystems relate to systems other than Design and Engineering, they should be considered as part of those other systems, not Design and Engineering.

**Revised October 2006**

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**Title: Worker Twists Ankle on Uneven Walkway**

**Identifier: Volume 09, Issue 1**

**Date Issued: July 25, 2009**

**Lessons Learned Statement:**

The lack of a good design; the lack of an inspection program; and the failure to mark hazards came together to cause a worker injury. ***Systems of Safety*** are utilized to provide prevention for this type of incident. Having a well-designed walkway and an adequate drainage system is using the **Design and Engineering** ***System of Safety*** approach to a safer workplace.

Despite previous reports of the condition of the drains, there was no action taken within the **Maintenance and Inspection** ***System of Safety*** to put the drains on a regular inspection program. Implementing an inspection program would be applying the protection afforded by this ***System of Safety***.

Identifying and marking hazards in the workplace is working within the **Warning Devices** ***System of Safety*** to prevent worker injury.

The **Training and Procedures** ***System of Safety*** provides a way to inform workers of known hazards and raise worker awareness to those hazards.

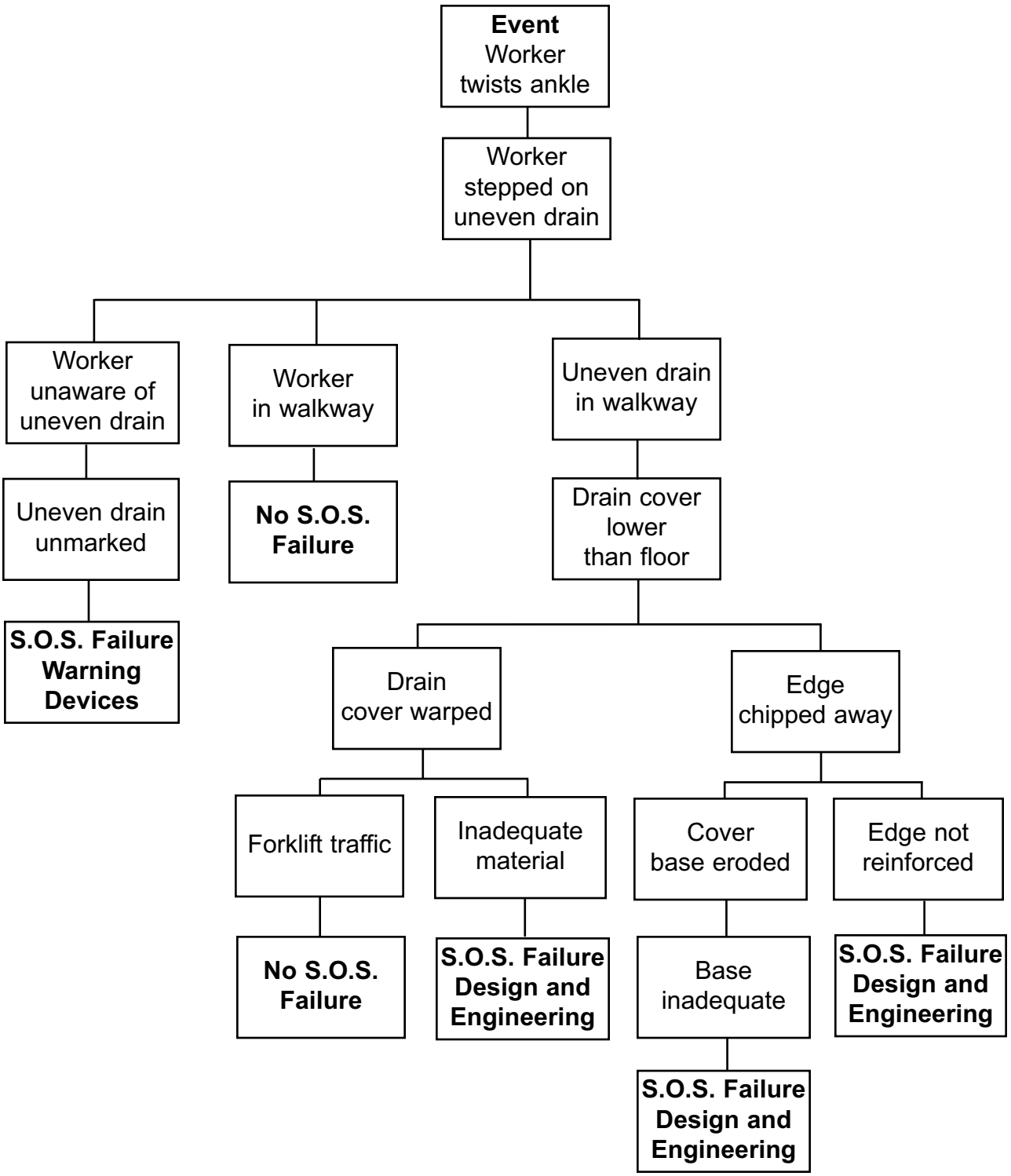
## Discussion:

While walking from the work area to the break room, a worker twisted his ankle. The worker had stepped on the edge of the concrete and a metal plate, which is part of the walkway drain. The drain is a trough, approximately 8 x 10 inches, cut into the concrete. The drain is covered with a piece of metal channel with holes drilled into it to allow the water to access the drain.

The investigation revealed that forklifts driving over the drain had warped the channel and chipped the edge of the concrete around the drain. This created a gap between the drain cover and the floor. The constant traffic had also caused the base that the metal cover sits on to erode away. The erosion allowed the metal channel to settle below floor level.

## Analysis

**The Logic Tree** is a pictorial representation of a logical process that maps an incident from its occurrence, "the event," to facts of the incident and the incident's root causes.



## Recommended Actions

1. Mark all drains located in walkways with black and yellow striped tape.
2. Eliminate unused drains and fill drains with concrete.
3. Put a new, taller metal plate in the drain so that it is level with the floor.
4. Redesign drain covers to withstand forklift traffic and to eliminate the gap between the cover and the floor.
5. Put drains on a regular inspection program.

## Education Exercise

Working in your groups and using the Lessons Learned Statement, Discussion, Analysis and Recommended Actions, answer the two questions below. Your facilitator will give each group an opportunity to share answers with the large group.

1. Give examples of ways to apply the Lessons Learned Statement at your workplace.

2. Of the examples you generated from Question 1, which will you pursue in your workplace? (**Note:** When we say something you may pursue, we mean a joint labor-management activity or a union activity rather than an activity carried out by you as an individual.)

# Trainer's Lessons Learned Success Inventory

Following a Lessons Learned (LL) session, **the trainer who led the LL** should complete this form. This information will: 1) Help you reflect on the successes and challenges of the session; 2) Help USW with new curriculum development; and 3) Help USW as a whole better understand how the LL Program is supporting their workers.

By reviewing LL from different sites or from other areas of their workplaces, workers are able to analyze the information and apply these lessons to their own workplaces in order to make their workplaces healthier and safer.

1. Site name (if there are participants from more than one site, please list all).

_____

2. Date of LL training _____
3. LL number used in today's Training_____
4. Your name_____
5. **Summary of Education Question 1:** Please summarize participants' examples of ways to apply this LL Statement to their workplace.

**Please continue on reverse side.**

6. **Summary of Education Question 2:** Please summarize actions or recommendations participants discussed pursuing at their workplace(s).

**Thank you for completing this form.**

# EVALUATION

## Lessons Learned: Worker Twists Ankle on Uneven Walkway

**Please answer the two questions below:**

1. **How important is this lessons learned to you and your workplace? (Circle one.) Rate on a scale of 1 to 5, with 5 being the most important.**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|

2. **What suggestions would you make to improve this Lessons Learned?**

## End of Training Trainer's Instructions

Please complete the information below.

Trainer's Name _____
(Please Print)

Date of training: _____

No. of Participants: Total _____ Hourly _____ Management _____

Location of Training: _____

USW Local # _____

Send:

1. This page;
2. The Education Exercise (page 8);
3. The Trainer's LL Success Inventory Form (pages 9 and 10);
4. The evaluation for each participant (page 11); and
5. The Sign-in Sheet (page 13) to:

| | |
|---|---|
| **If you are a TOP Site (excluding DOE TOP Sites)** | **Send to: Steve Cable 2915 Gradient Drive St. Louis, MO 63125** |
| **All other sites (including DOE TOP Sites)** | **Send to: Doug Stephens United Steelworkers 3340 Perimeter Hill Drive Nashville, TN 37211** |

Thank you for facilitating the sharing of this Lesson Learned with your coworkers.

# SIGN-IN SHEET


***(Please print clearly.)***

**Class Title:** _____ **Class Completion Date:** _____

**Location (City, State)/Facility:** _____

**Grant Program:** _____ **Dist. & LU #:** _____

**Instructors: 1)** _____ **2)** _____

**3)** _____ **4)** _____ **5)** _____

| | Name (Print first and last.) | Check one: Hourly | Management |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
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