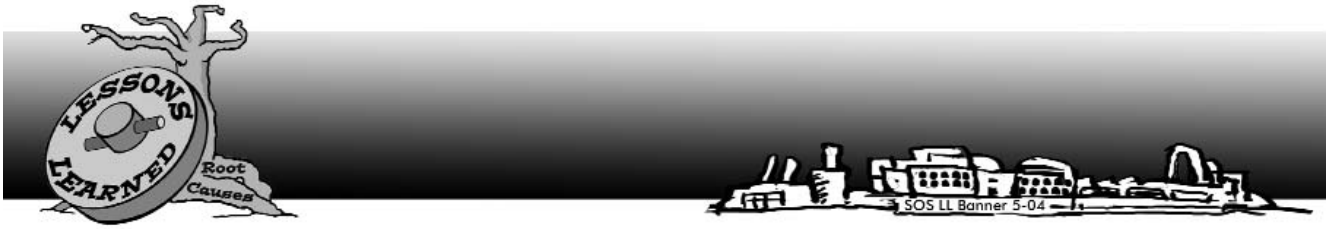


# Worker Injured on Scissor Lift

## 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 07, Issue 102**

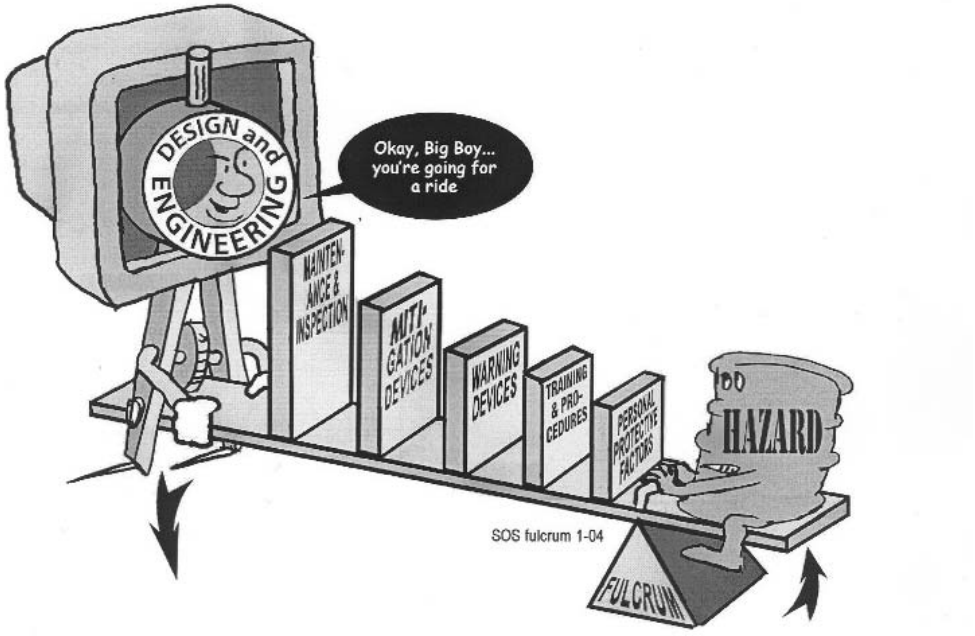
**Background Information**

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 Burned by Plasma Arc Cutter**

**Volume 07, Issue 94**

**Date Issued: July, 2007**

**Lessons Learned Statement**

Modifications to equipment are sometimes necessary in almost every workplace. We all know that "one size fits all" is a myth. But, modifying equipment or tools is a tricky business that can result in tragedy and even death. Equipment modifications come under the **Design and Engineering** ***System of Safety***.

**Design and Engineering** is the best system to eliminate hazards; but if the redesign or modifications are not well thought out, it can create more hazards rather than eliminating them.

If a design change or modification is made, it must be communicated to the entire workforce. Communication is an important part of the **Training and Procedures** ***System of Safety***. If we change the equipment, we must update the procedures and make sure everyone is retrained and informed. If the worker in this incident had been informed of the modification to the safety rail on the scissor lift, he would have known to inspect the rail before attempting to use the lift.

**Discussion**

A scissor lift was needed to perform a lengthy job in an area that was radiologically contaminated. It was recognized that the lift would have to be disposed of as radioactive waste when the job was finished, so a lift was purchased for this job alone.

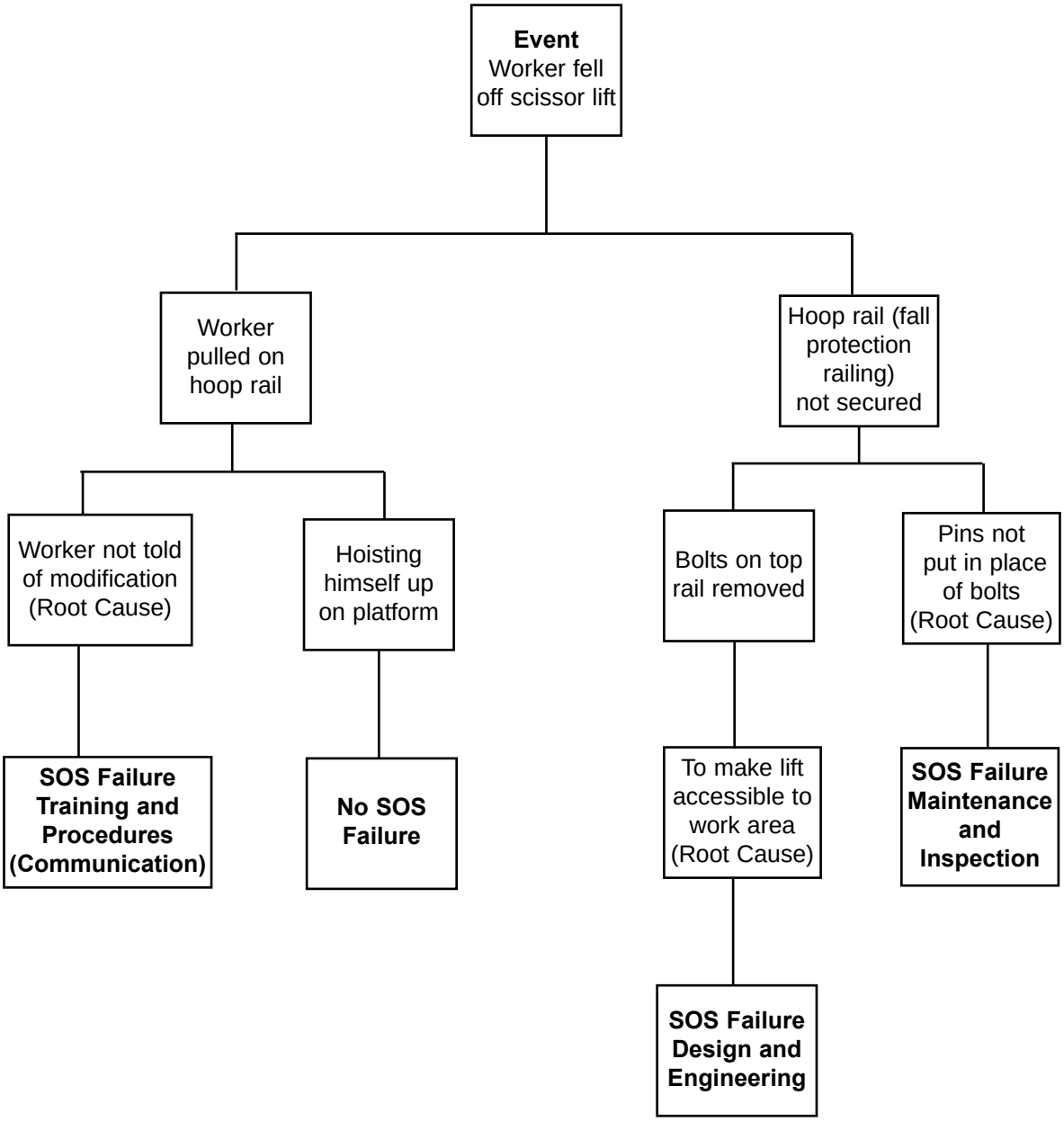
It was determined that the hoop rail (the railing around the platform that provides fall protection) would need to be modified to allow access to the work area. The rail had to be able to pivot down to get the lift close enough to the equipment to perform the job at hand. The bolts at the top of the rail were removed; allowing the rail to pivot down on the bottom bolts. The top bolts were to be replaced with pins that could be removed quickly when needed to access the work area.

The modification was not communicated to the regular operators in the area or to the training team. Additionally, the scissor lift was staged for the job after the modification and the pins were either not installed or they were removed, which would allow the rail to pivot down if any force was applied to it. Had the workers or trainers been informed of the modification, they would have known to check the status of the pins to hold the rail in place.

When a worker was trying to access the platform, he opened the swinging access gate with his right hand, placed his left foot on the steps and grabbed the top of the hoop rail with his left hand. As he attempted to pull himself up on the platform, the rail pivoted on the lower bolts causing the worker to fall backwards to the asphalt surface. He landed on the back of both elbows and the back of his head. The worker was not seriously injured but could have been killed if the rail had pivoted while the lift was raised to its full height.

## 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. Replace bolts that were removed. The rail only needed to pivot long enough for the lift to be put into place. The railing then could have been put back the way it was; eliminating the chance of someone forgetting to put pins in place.

2. Get a handle on communication to operators and trainers, either with regularly scheduled meetings or memos and emails that require a response.

3. Have the crews that are going to do the work stage the equipment and inspect it before starting job.

**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 which actions or recommendations participants discussed pursuing at their workplace(s).

**Thank you for completing this form.**

# EVALUATION

## Lessons Learned: Worker Injured on Scissors Lift

**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:

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

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FOR HEALTH, SAFETY AND ENVIRONMENTAL EDUCATION
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**Name of Class_____ Date of Class_____**

**Instructors: _____**

| Please Check One* H | M | Print Name | Signature |
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***H = Hourly Worker**
**M = Management or Salaried Worker**