



Employee Twists Back

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.



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Lessons Learned

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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 Design and Engineering of Equipment, Processes and Software Management of Change (MOC)** Chemical Selection and Substitution Safe Siting Work Environment HF	Inspection and Testing Maintenance Quality Control Turnarounds and Overhauls Mechanical Integrity	Enclosures, Barriers Dikes and Containment Relief and Check Valves Shutdown and Isolation Devices Fire and Chemical Suppression Devices Machine Guarding	Monitors Process Alarms Facility Alarms Community Alarms Emergency Notification Systems	Operating Manuals and Procedures Process Safety Information Process, Job and Other Types of Hazard Assessment and Analysis Permit Programs Emergency Preparedness and Response Training Refresher Training Information Resources Communications Investigations and Lessons Learned Maintenance Procedures Pre-Startup Safety Review	Personal Decision-making and Actions HF Personal Protective Equipment and Devices HF Stop Work Authority
	Organizational (must address a root cause) Staffing HF Skills and Qualifications HF Management of Personnel Change (MOPC) Work Organization and Scheduling HF Work Load Allocation of Resources Buddy System Codes, Standards, and Policies**					

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 sub-systems 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 system, not Design and Engineering.

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Lessons Learned Statement:

Due to the labor intensive and awkward steps required to perform this task, an employee twisted his back and lost time from work. With the implementation of **Design and Engineering** changes to this system, this accident could have been avoided. The practice of employees working alone and without an appropriate pre-job briefings puts employees at risk. Using the **Training and Procedures System of Safety**, the workers would have been aware of the hazards involved with this task and been able to avoid this situation.

Discussion:

Conditions prior to incident:

- Contractor had identified a need for weather protection for sensitive equipment located outside.
- A subcontractor was hired to erect a facility (R-605A), including steps and a windscreen for weather protection.
- The Contractor had accepted the system and turns over the operation to Site Services organization.
- Site Services initiated the removal of the accumulated water, using external pumps and hoses, in the diked area of the R-605A facility.

- Subsequently, this task was transferred to Waste Operations which initiated the work order request for decanting the accumulated water.
- A pre-task hazard review was developed and the team now attends daily pre-job briefings.

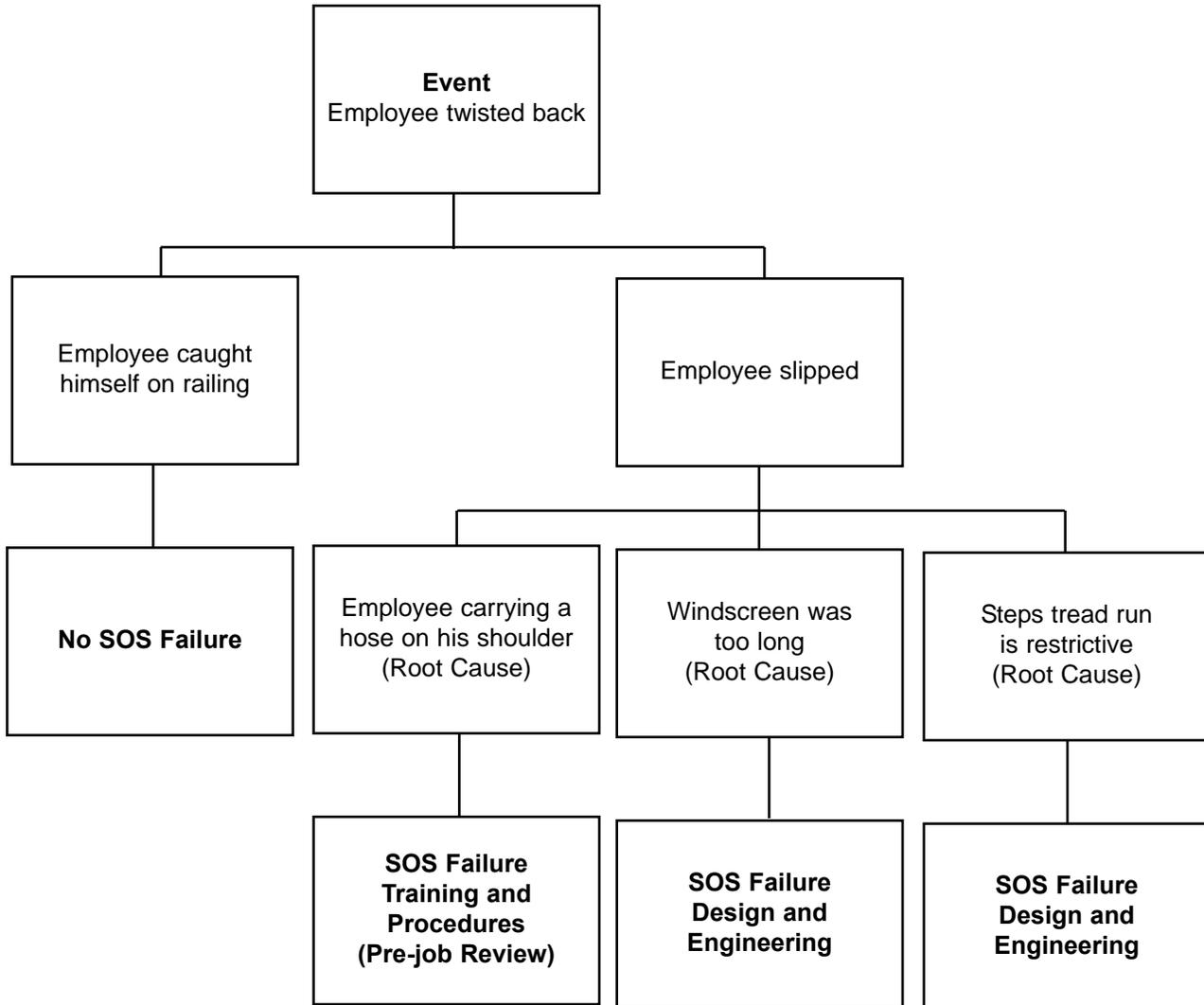
An employee was returning a hose and pump to the R-605A Fuel Depot after draining the diked area around the tanks. While he was carrying the hose through the windscreen and up the steps at the R-605A Fuel Depot, the employee slipped, lost his balance and began to fall. The employee caught himself by grabbing the only handrail available on the north side of the stairs. The employee twisted his back. At the end of his shift, while changing out of his work clothes, the employee's back felt sore. The employee notified Waste Operations Supervision of the injury. The employee was transported to the Fire Department because the Medical Facility was closed.

Additional Facts:

1. To obtain and replace hoses and pumps, employee has to go up and down the steps of a stile and over a dike while carrying the equipment.
2. The windscreen is bolted together in such a way that to access the stairs, employees have to duck.
3. The employee returning the pump and hoses was not initially assigned to the decanting task.
4. The R-605A steps overlap each other in such a way that the tread run is restrictive; it is only about seven (7) inches.
5. The R-605A steps are not evenly spaced; the tread rise is not consistent.
6. The windscreen was too long when it was installed.

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

Root Cause: Crew was short staffed (Training and Procedures/ Pre-job review).

- All employees reassigned to jobs that are underway should be given an appropriate pre-job and hazard review that addresses the requirements for the task.

Root Cause: Windscreen was too long (Design and Engineering)

- Remove or adjust windscreen to avoid interference with stair access.
- Locate equipment in a more accessible area such as a stationary hose reel permanently placed near the dike area.
- Hard pipe system so that employees don't have to manhandle equipment required for the job.

Root Cause: Steps tread too restrictive (Design and Engineering)

- Inspect tread run on stairs for possible redesign.

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: Employee Twists Back

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
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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:

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

