

Controlling One Hazard Introduced Another

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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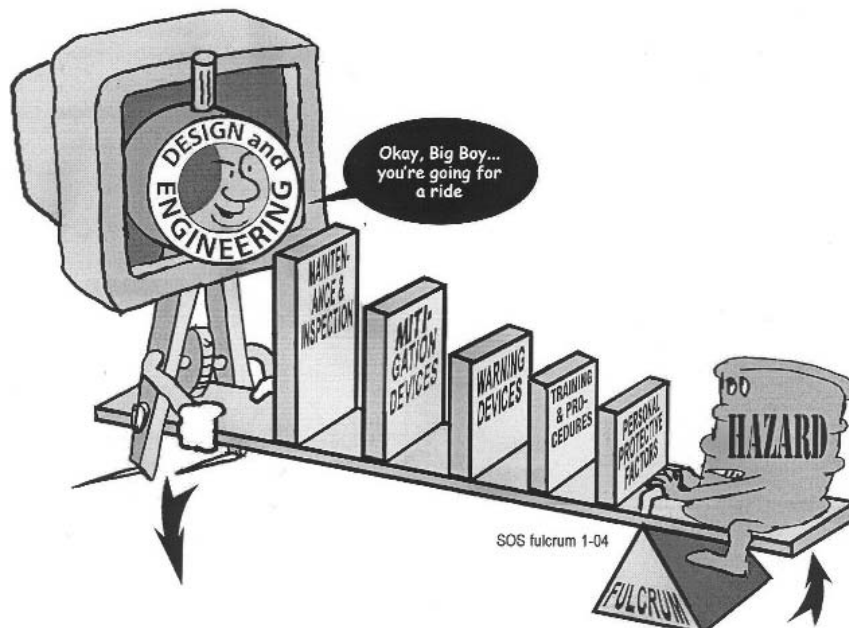
Background Information

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

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Lessons Learned Statement

When developing a Job Hazard Analysis (JHA), all hazards must be considered, not just the obvious. In this case, the JHA worked for the hazard identified; but the solution created two additional hazards. When doing a JHA, consider not only the present hazard but also any hazard that may be created after the job starts. *Systems of Safety* are designed to identify and control hazards by eliminating or controlling the hazard.

By integrating *Systems of Safety* into all stages of work from start to finish, hazards can be identified and corrected as they appear.

A well-designed system for disposing of waste bags that minimizes the risk of injury to workers is a use of *Systems of Safety Design and Engineering/Engineering of Equipment*.

Utilizing *Systems of Safety Personal Protective Factors/Stop Work Authority* would prevent further risk of injury.

Training workers to recognize additional hazards after the start of a job and request a revised work plan when unforeseen hazards develop is a use of *Systems of Safety Training and Procedures/Hazard Assessment and Analysis*.

Walkdowns after revising work plans help identify additional hazards and is a use of the *Training and Procedures System of Safety/Pre-Startup Safety Review*.

Discussion

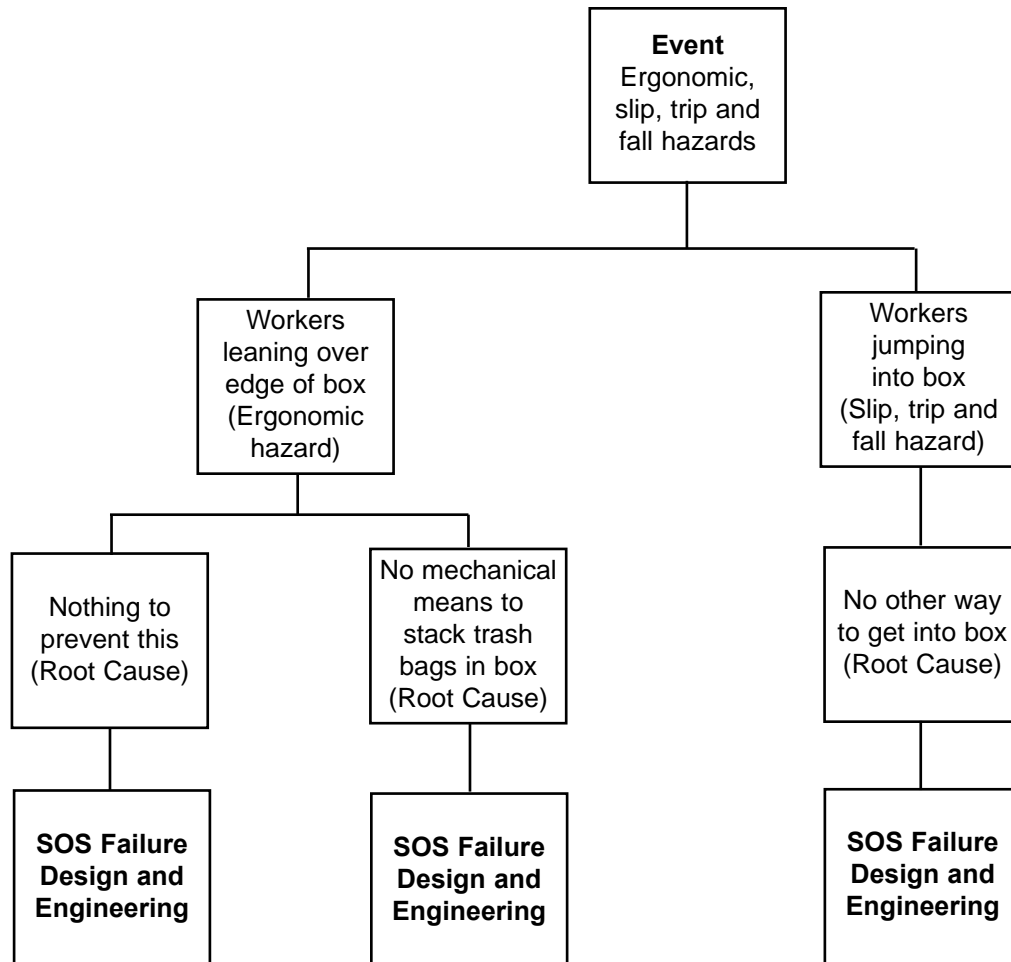
A job that involved the removing and bagging of used HEPA air filters and then placing them into a staged waste box presented a hazard when the workers had to carry the bags up a ladder and toss them into the box.

During the Job Hazard Analysis [JHA] process site walkdown and work package development, the workers decided that carrying bagged filters up a ladder against the side of the waste box and then lifting the bags over the side of the waste box posed an unacceptable risk to workers. Workers requested that the waste box be prestaged at the edge of the loading dock to facilitate placing bagged filters into the box. Locating the waste box next to the loading dock introduced two additional hazards. The workers had to either lean over the edge of the box to place filters into the box while supporting their bodies with their free hand, or had to jump four feet into the box to stack bags to allow more space.

The two new hazards presented undesirable ergonomic positioning of the body and slip, trip and fall hazards.

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. Immediately stop the job.
2. Train workers to stop the job and request a revised work plan when unforeseen hazards develop on job.
3. Provide workers with a safe method (possibly mechanical) of loading waste into the box.
4. Have engineering install handrails or guards, use portable platforms or evaluate the use of walk-in waste boxes with access doors.

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: Controlling One Hazard Introduced Another

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.

