



Fork Truck Accident While Using Unloader

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.



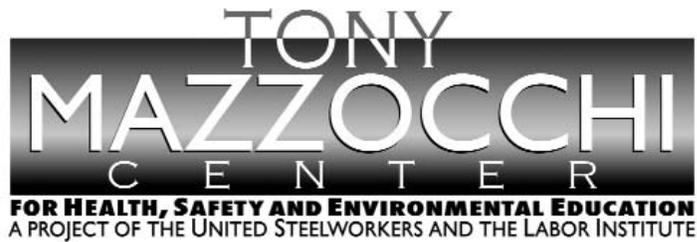
Major Safety System	Design & Engineering	Maintenance & Inspection	Mitigation Devices	Warning Devices	Training & Procedures	Personal Protective Factors
Level of Prevention	Highest—the first line of defense		Middle—the second line of defense			Lowest—the last line of defense
Effectiveness	Most Effective		←————→			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	
	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:

The proper use of *Systems of Safety* when planning for moving heavy, awkward loads, such as a long section of 12-inch pipe, can make this job much safer.

The fact that the crane wasn't designed to carry loads outside the work area of the building added another hazard to the process of moving the heavy pipe. The use of the **Design and Engineering Systems of Safety** to allow the travel of the crane through the door would have made the job much safer. A consideration of the slope in areas where heavy loads are transported could lead to the use of **Design and Engineering** to make the surfaces safer.

Providing help for an employee when faced with a job task which is hazardous for one person to attempt is an important use of the **Design and Engineering System of Safety**, work organization and scheduling and should have occurred in this situation.

The correct procedure for moving pipes was not relayed to all workers. A proactive approach to **Training and Procedures Systems of Safety** may have prevented the incident.

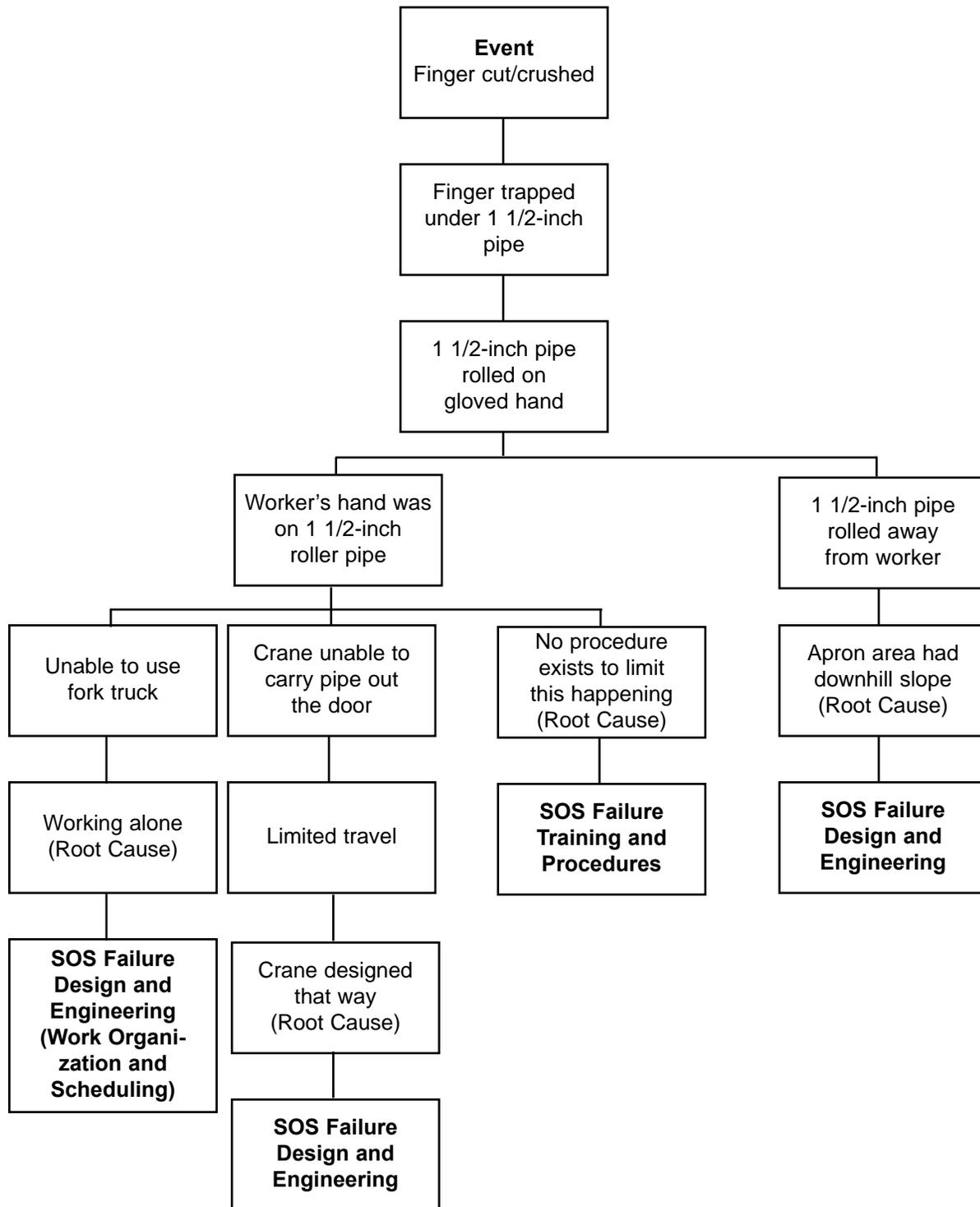
Discussion:

The employee cut a short piece of 12-inch pipe off of a 20-foot length. In order to move the unneeded piece (approximately 19 feet) out of the shop, a sling was set in the middle of the length of pipe and the overhead crane was used to carry the piece as far through the West exit door as the crane travel would permit. Upon reaching the crane travel limit, the 12-inch pipe was set down with one end placed on a piece of wood and a short (approximately 18-inches) piece of 1 ½-inch pipe, was located beyond the middle of the 12-inch pipe as the 1-inch pipe was lowered. The sling was repositioned back toward the inside end of the 12-inch pipe and the crane was raised off of the wood. The 12-inch pipe then rolled out the door on the 1 ½-inch piece of pipe until the 1 ½-inch piece lodged in the seam between the building and the outdoor apron.

At this time, the 12-inch pipe was set on the wood again so the 1 ½-inch pipe could be relocated to the sloped apron outside the building. Because the apron is sloped downhill, the employee put their hand on the end of the 1 ½-inch pipe to keep it from rolling down the hill and raised the end of the 12-inch pipe to begin the process of rolling it out the door again. When the 12-inch pipe lifted off the wood, it moved forward and the glove on the employee's left hand was pulled under the 1 ½-inch pipe, causing their hand to be trapped under the pipe. The employee had to use the crane to roll the 12-inch pipe backward in order to free their hand. One finger was cut and four stitches were used to close the cut.

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. Recommend that the work group audit tasks that require assistance and share the findings with those who assign workers to these tasks.
2. Look at current JSA requirements to be sure of compliance. This should also include conditions when jobs change.
3. Review alternative ways in which large pieces of pipe can be safely transported through the doorway. This may include possible design changes in the overhead crane.
4. Develop a procedure that minimizes safety risks when moving large pieces of pipe through the doorways.
5. Ensure employees are trained on using new procedure.
6. Evaluate the slope of the dock to determine if it should be leveled.

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: Fork Truck Accident While Using Unloader

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:

Doug Stephens
United Steelworkers International Union
3340 Perimeter Hill Drive
Nashville TN 37211

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

