Automated Barrel Lifting Device

Claremont Folding

WestRock | Performance Excellence

Claremont, North Carolina

Project Overview

Safety Issue

In the past when a drum was almost empty, EE would lift the barrel and place a board under the tote to raise the drum to empty the content

- This was an unsafe act that needed improvement
- The EE were doing their required task, but we needed a safer solution
- The EE recognized the hazards and took action

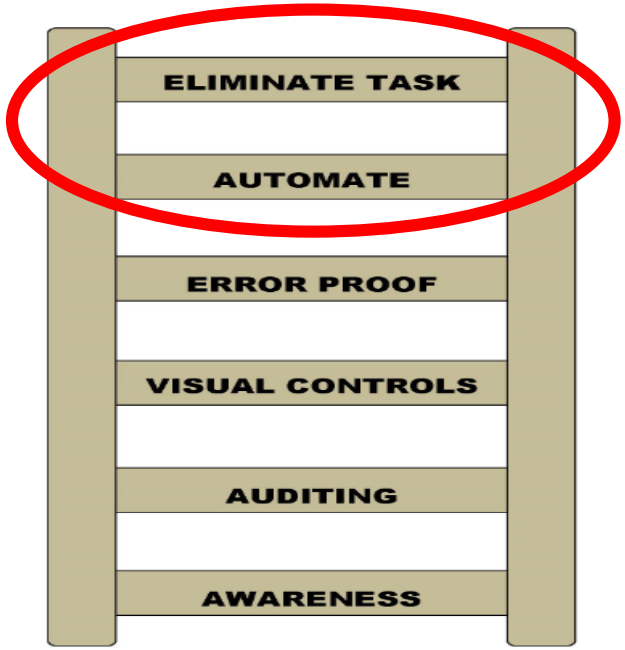
Possible Solution

EE came up with the idea to add a safety ledge to the front side of the barrel rack to keep the barrels from sliding off when lifted

The EE requested a safety ledge on the front side of the barrel rack via Work Order.

Countermeasure Ladder

One of our Maintenance Techs (Jack Heavner) was made aware of the unsafe condition. He thought the idea of a safety ledge on the front was a good improvement, however he took it upon himself to come up with a solution to make the task safer by eliminating the unsafe task of physically raising the barrel to place a large block of wood under the back side of the barrels



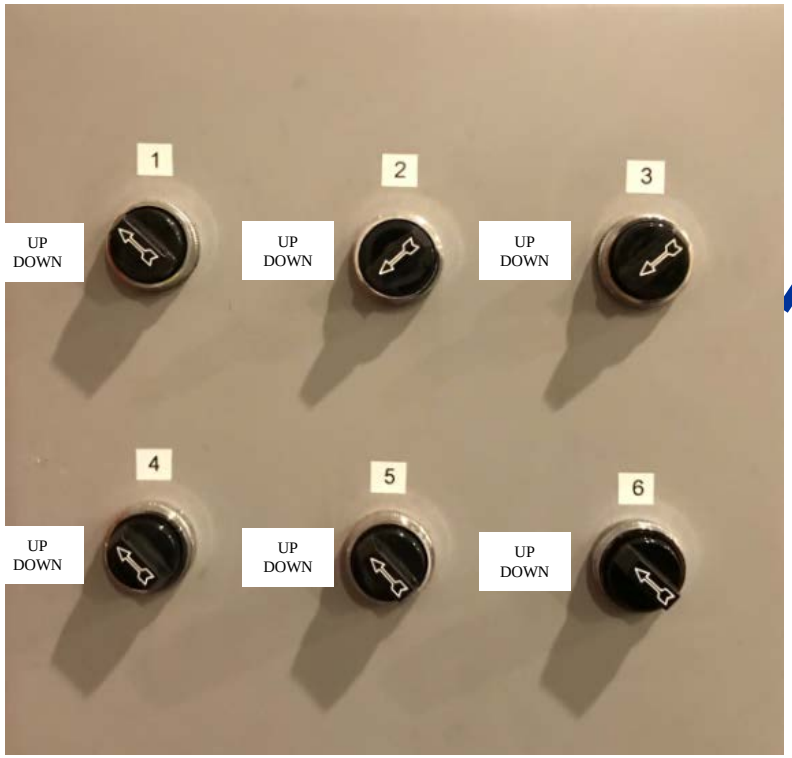
Safety Solution

- Jack designed a pneumatic system that would safely raise the barrels with a switch of a button
- He also installed the safety ledge to keep the drum secure when lifted as requested

Safety Solution

Backside view of the system

Safety Solution



Switch station is used to control the lifts.

Activating the switch raises and lowers the barrels via pneumatics

Completed Solution

Hazard Risk Assessment (HRA)

Hazard Risk Assessment Worksheet

Facility / Plant : Claremont Folding Plant

Team Members: Jack Heavner, Kyle Mayberry

03-01-2019

Job Analyzed: Oil Shed Barrel Improvement

Risk Assessment

92% Hazard Reduction

		A		B		C		A x B x C						D x E x F
		Severity of Potential Incident		Frequency of Exposure		Likelihood of Occurrence								
		Death	5	At all times	5	Highly Likely	5						5	
		Disabling	4	Once / Hour	4	Probable	4						4	
		Lost Time	3	Once / Day	3	Likely	3					Likely	3	
		Recordable	2	Once / Week	2	Unlikely	2				eek	2 Unlikely	2	
	Hazard Identified	First Aid	1	Once / Month	1	Highly Unlikely	1	Risk Factor	Recon Countermeasure	First Aid		ce / Month 1	Highly Unlikely 1	Result Risk Factor
1	Lifting the barrel by hand could cause a strain or injury	3		2		4		24	Design and install automation to lift the barrels	1		2	1	2
2	The barrel could fall and smash a part of the EE body	3		2		4		24	Add a stop to the front side of the rack to keep the barrel from falling off of the rack	1		2	1	2
3	Barrel could slide of the front of the rack and hit EE	4		2		4		32	Add a stop to the front side of the rack to keep the barrel from falling off of the rack	1		2	1	2
4	Creates multiple pinch points	3		2		3		18	Design and install automation to lift the barrels	1		2	1	2
4	Very bad ergonomically for the body	4		2		3		24	Design and install automation to lift the barrels	1		2	1	2
						Base:		122					Actual:	10

Summary

The original plan was to add a safety ledge. The maintenance tech who was assigned the WO recognized the hazards still present with adding only a safety ledge. He presented the idea of automating the task to eliminate the potential hazards

The physical work hazards have been removed and replaced with automated lifts

We have now given associates a safer and easier way to complete the necessary task

Hazard Reduction of 92%

Westrock's Values

Values

- **Integrity**. We never one time tried to cut any corners or hide any of the challenges we faced,
- **Respec**t – With showing respect to our fellow workers across multiple departments, we were able to assemble a team of multi-talented individuals to find solutions to a potential safety issue including PLCEs
- **Accountability** – Jack took it upon himself to not only provide a short term solution but designed a fail safe device that would ensure no employee was put in danger when operating it. He took this upon himself and was accountable in completing the task.
- **Excellence** – We started this task by designing a stand that was manually operated and completed with a far superior solution that should become standard in other WestRock sites.

Westrock's Behaviors

Behaviors

- **Communicate The Why** – When involving our maintenance team this behavior was so effective that the solution was even better than anyone could have imagined.
- **Align Goals** – This was a cross functional team and the final design was created by someone who would possibly never have to use it but he did it because of the importance of the safety of an employee in another department.
- **Empower** – Our employees were empowered to design, manufacture and commission the equipment with no involvement of the management team.
- **Recognize and Reward** – We have been rewarded in that we have found a way to make a needed task safer. This continues to boost our safety culture. "Claremont really does care about my safety"