4 Caught In Machine – Inspection #1293969

A **34 year old male** employee was fatally injured when he was caught in a machine while trying to retrieve a part that had fallen from the indexing carousel chamber. The victim was operating a machine called Hanger Blaster 2 prior to the incident. The victim's upper torso and neck became caught between the indexing carousel chamber and stationary machine frame.

The machine encloses a revolving carousel door-less blast chamber (designed to rotate counter clockwise) divided into two compartments. The machine's loading area is open and accessible during the blast cycle so that one chamber can be loaded while the blasting occurs in the other chamber. The victim's job duty for this operation was to load and unload parts on the metal trees located in the chamber of the Hangar Blaster 2 Machine. The tree in the chamber was loaded with parts and the machine was indexed so that the unfinished parts could be moved to the blast area for finishing. While indexing the chamber, a part fell from the tree, falling between the floor of the carousel chamber and the machine's frame. Two Team Leaders became aware of the fallen part from the noise it made and approached the machine to assist. Team Leader #1 opened the back of the machine and instructed Team Leader #2 to index the machine so that a clear visual inspection could be made from the back of the machine to the front. The victim was assisting two team leaders in retrieving the part by placing his body into the machine. Several attempts were made to reach the fallen part before the machine unexpectedly indexed.

Although it is not known exactly why the machine indexed, it is believed that while reaching in to the chamber, the victim came into contact with a "reverse pressure" safety switch on the chamber which was wired independently of the e-stop therefore allowing the carousel to continue to rotate counter clockwise even after pressing the e-stop. Additionally, one of the team leaders may have indexed the chamber thinking that by indexing the chamber it would move away from the victim's body allowing him room to grab the part; instead it actually pinned the victim. The team leader may not have realized that this particular chamber was designed to rotate counter clockwise when he indexed the chamber.

The investigation concluded that the employees initiated service and maintenance activities on the Hanger Blaster 2 machine without locking out the machine which would have protected them against an unexpected release of energy. It was also determined that the company did not effectively train their employees on lockout tag-out nor did the company conduct periodic reviews of the LOTO program.

Citation(s) as Originally Issued

A complete inspection was conducted at the accident scene. Some of the items cited may not directly relate to the fatality.

Citation 1 Item 1

1910.147(c)(4)(i)	**Procedures were not developed, documented and utilized for the control of potentially hazardous energy when employees were engaged in activities covered by this section.**

	In that four employees were exposed to a caught-in hazard as employees failed to apply energy control measures to the Hangar Blaster 2 machine.

Citation 1 Item 2

1910.147(c)(4)(ii)(B)	**The energy control procedures did not clearly and specifically outline the steps for shutting down, isolating, blocking and securing machines or equipment to control hazardous energy.** In that the machine specific procedures provided by the company for the Hangar Blaster Machines did not instruct employees of the correct location for the electrical disconnect nor did it contain information on isolating the pneumatic energy source as required by the owner's manual.

Citation 1 Item 3

1910.147(c)(6)(i)	**The employer did not conduct a periodic inspection of the energy control procedure at least annually to ensure that the procedure and the requirement of this standard were being followed.** In that the employer did not conduct periodic inspections of the energy control program to ensure the employee was using correct procedures and energy control devices.

Citation 1 Item 4

1910.147(c)(7)(i)(B)	**Affected employees were not instructed in the purpose and use of the energy control procedure.** In that seven employees that are required to work in an area in which servicing or maintenance is performed were not instructed in the purpose and use of energy control procedures.

Citation 1 Item 5

1910.212(a)(1)	**One or more methods of machine guarding were not provided to protect the operator and other employees in the machine area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips and sparks.** a) In that two employees were exposed to a machine guarding hazard as they were working at or near the Hangar Blaster 2 machine that did not

	provide protection to the employees from being caught between the revolving carousel and the machine's frame. b) In that one employee was exposed to a machine guarding hazard as he was able to open the rear door of the Hangar Blaster 2 Machine without being protected from the blast wheel projecting shot. The interlock that was inoperable would stop the blasting wheel from turning, thus keeping the employees free from shot being sprayed onto them.

Citation 2 Item 1

1910.133(a)(1)	**Protective eye equipment was not required where there was a reasonable probability of injury that could be prevented by such equipment.** In that two employees located in the production area were not required to wear safety glasses.

Citation 2 Item 2

1910.253(b)(4)(iii)	**Oxygen cylinders in storage were not separated from fuel-gas cylinders or combustible materials (especially oil or grease), a minimum distance of 20 feet.** In that the employer failed to store oxygen and acetylene tanks 20 feet from each other or provide a fire wall. The tanks were located 13.5 feet from each other.

Citation 2 Item 3

1910.1200(h)(1)	**Employees were not provided effective information and training on hazardous chemicals in their work area at the time of their initial assignment and whenever a new hazard that the employees had not been previously trained about was introduced into their work area.** In that the employer failed to provide initial training on hazardous chemicals for two temporary employees that were exposed to chemicals including, but not limited to, Cast Steel Shot, and Anticorit SV.

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Photo 1 of 2 – Hanger Blaster machines; machine on the right was involved in the incident

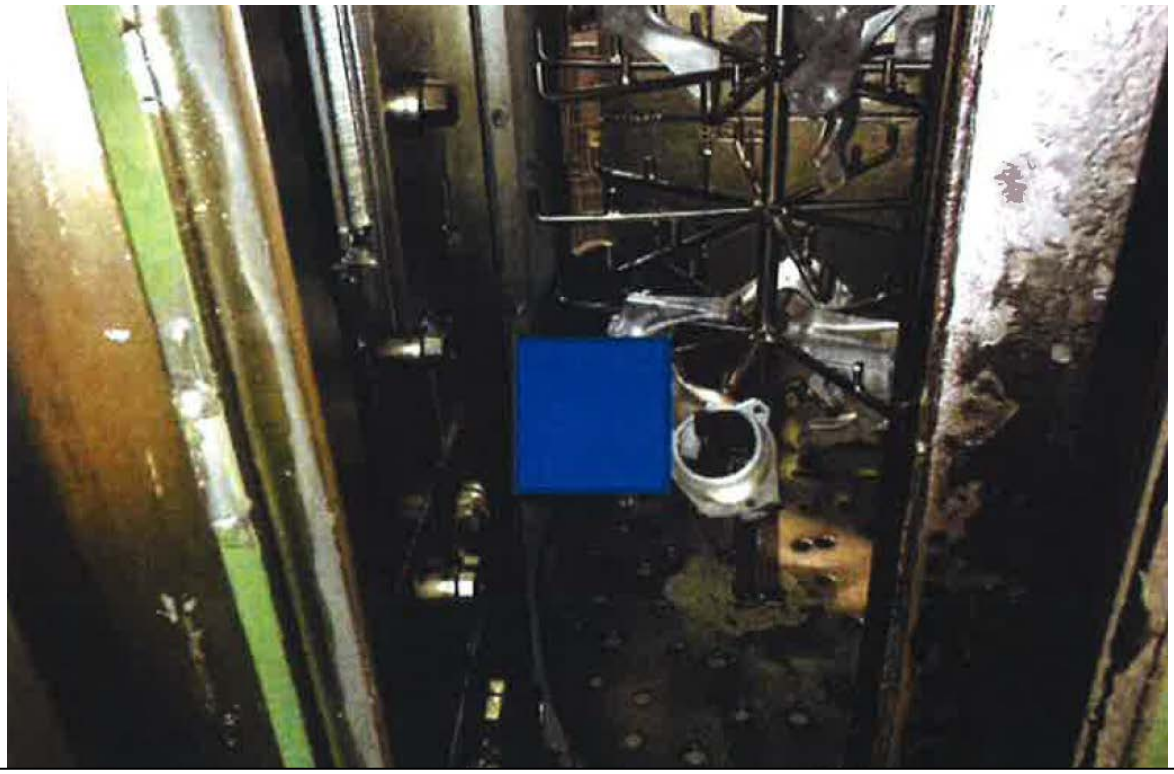

Photo 2 of 2 – Shows an interior view of Hanger Blaster 2 Machine form the front. This is where the victim was attempting to retrieve a fallen part.