

INCIDENT FACTS

REPORT #:
22MI057

REPORT DATE:
May 18, 2024

INCIDENT DATE:
June 30, 2022

WORKER:
56-year-old

INDUSTRY:
Iron and Steel Forging

OCCUPATION:
Maintenance
Technician

EVENT TYPE:
Crushed by



The fallen motor assembly (circled in red) and the wooden shipping blocks.



Designated lifting channels.

Maintenance Worker Crushed by Conveyor System Component

SUMMARY

A 56-year-old maintenance technician was fatally crushed during the installation of a conveyor motor assembly on a new forging line. He had worked for his employer, an iron and steel forging company, for one year prior to the incident. During the installation, he was working as part of a team alongside the site-maintenance lead, who was operating a powered industrial truck, and another maintenance technician.

On the day of the incident, the team was working to level and anchor the new conveyor motor assembly to the floor. The motor assembly was about 7 feet in height and 5 feet in width and weighed approximately 1,800 pounds. The electrical connections had already been made and the 4x4 lumber that was attached on the base from shipping still needed to be removed. To complete this task, a Toyota LP Model 8FGU30 powered industrial truck (PIT) was used to suspend the motor assembly above the floor. The PIT featured forks measuring 56 inches in length and 5 inches in width, with the exact distance between the forks undetermined at the time of the incident. On the day of the incident, fork extensions were not used to execute the lift, nor are they required in proper lifting procedures of the assembly. The maximum load capacity of the PIT was specified to be 5,620 pounds by the manufacturer.

The motor assembly was equipped with designated fork channels for lifting but due to other equipment (a crane) blocking the PIT from accessing the assembly from the proper angle, the lifting channels were not used. Rather, the forks were placed at an angle in-between the channels on the crossbars. There was an open pit directly behind the location where conveyor motor assembly was being installed, designated for equipment to be placed. Once the motor assembly was lifted, one of the 4x4s was removed by the assisting maintenance technician. As soon as the victim removed his 4x4, the motor assembly shifted and began to fall. He attempted to stop the motor assembly from falling but the force of the impact knocked him into the adjacent open pit onto a small ledge. The motor assembly followed, landing on top of the employee and fatally crushing him.

The powered industrial truck was then used to lift the unit off the victim. Emergency services were called, and he was transported to a local hospital where he was later pronounced deceased. The operator of the PIT had documented PIT training consisting of visual aids (including videos), an in-person training presentation, hands-on training time with the equipment, and a written test.



Wide view of the incident location. The crane is to the right, open pit under blue equipment, and motor assembly (red arrow).

REQUIREMENTS

Employers must:

- Ensure that only a load that cannot fall off of the load engaging means during the normal movements of the truck is lifted or transported.

RECOMMENDATIONS

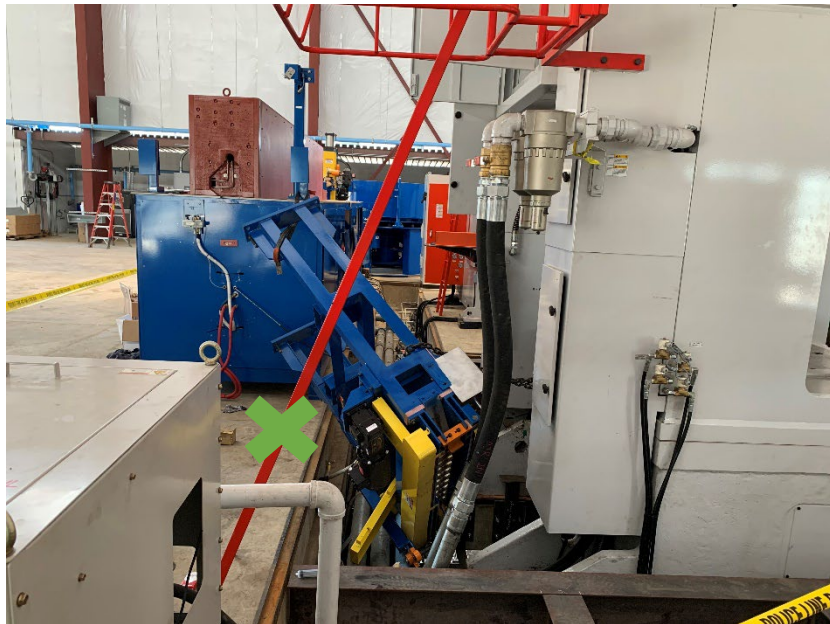
MIFACE investigators concluded that, to help prevent similar occurrences, employers should:

- Keep the load stable and centered by proper fork placement, secure uneven or loose loads, and keep the forks as wide as possible.
 - Use the appropriate lift fixture for the type of load when necessary.
- Prohibit all work under loads suspended by temporary single supporting means.
- Ensure the area is free of additional hazards (e.g., uncontrolled fall hazards, other equipment, etc.).

CITATIONS

MIOSHA General Industry Safety and Health Division issued the following serious citation at the conclusion of its investigation.

- Serious: 408.12193(e): GI PART 21, POWERED INDUSTRIAL TRUCKS
 - An operator shall:
 - (a) Operate a truck equipped with attachments as a partially loaded truck when not transporting a load.
 - (b) When loading a forklift truck, place the load engaging means under the load as far as possible and tilt the mast backwards to cradle the load.
 - (c) Exercise caution when tilting loads especially when they are segmented.
 - (d) Lift or transport only a load that is within the rated capacity of the truck.
 - (e) Lift or transport only a load that cannot fall out of a basket or container, or off the load engaging means during the normal movements of the truck.
 - (f) Tilt an elevated load forward only when in a deposit position over a rack or stack.



A side view of the incident location. A green X marks the approximate location of the decedent immediately before the fatal incident.

[MIFACE](#) (Michigan Fatality Assessment and Control Evaluation), Michigan State University (MSU) Occupational & Environmental Medicine, 909 Fee Road, 117 West Fee Hall, East Lansing, Michigan 48824-1315.

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