

TO: Director, National Institute for Occupational Safety and Health

FROM: California Fatality Assessment and Control Evaluation (CA/FACE) Program

SUBJECT: Machine Operator Dies when a Molding Press Machine Closes on Him

SUMMARY
California FACE Report #07CA011

A 27-year-old male Hispanic machine operator died when he was crushed in a molding press machine that closed on him. The victim was in the process of setting up the machine when a piece of plastic dropped inside. The victim reached inside to retrieve it, and the machine closed and crushed him. It is not known if the victim had received training about how to safely retrieve displaced material. The CA/FACE investigator determined that, in order to prevent future occurrences:

- Press machine manufacturers should design presses that minimize the chances of material falling into or becoming lodged in the machine.
- Employers should design and implement machine specific safe work procedures for removal of displaced materials from press machines.
- Employers should fully train press machine operators in retrieving displaced material and verify their knowledge and skills through testing.

INTRODUCTION

On November 7, 2007, at approximately 5:00 p.m., a 27-year-old male Hispanic machine operator died when he was crushed by a molding press machine that molds sheets of plastic into display products. The CA/FACE investigator was notified of this incident on November 15, 2007, by the Department of Investigations of the Division of Occupational Safety and Health (Cal/OSHA). On May 14, 2008, the CA/FACE investigator inspected the site of the incident and interviewed the company business manager and four employees. A machine operator demonstrated the machine operation and safety features. On June 5, 2008, a telephone call was conducted with two additional employees with the assistance of a Spanish interpreter.

The employer of the victim was a plastic display manufacturer. The company had been in business for 15 years and had 40 employees. The victim had worked for this company for one month and had no prior experience as a machine operator. The victim was born in Mexico and had been in the United States for 14 years. The victim had a sixth grade education and only spoke Spanish. He communicated with other employees and his immediate supervisor in Spanish.

The company had a non-specific written Injury and Illness Prevention Program (IIPP). There were no written machine specific procedures for incidents in which material fell into or was lodged in the press. There were no routine safety meetings or training for employees. All training was conducted for employees only as needed for specific machine operations. The victim was deemed knowledgeable in machine operation by his supervisor after on the job training and observation in his native language. It is not known if the victim received specific instruction on how to remove displaced material.

INVESTIGATION

The site of the incident was a business that manufactured plastic display products. The machine involved in the incident was a creasing and cutting press machine (Zhejiang Wity Machinery Group Co., Ltd., Model ML-1400). During operation, the machine operator lays a sheet of plastic onto the flat bottom table of the machine. The bottom table automatically tilts forward and presses the plastic against the top table that contains the cutting and shaping dies.

According to his supervisor, on the day of the incident the victim was installing dies. The press was powered on to test the die settings. The victim placed a sheet of plastic into the flat bottom table of the machine, and the sheet fell into the machine. As the victim reached with his hands into the machine to retrieve the plastic sheet, the machine cycled and the victim was crushed between the top and bottom tables. Coworkers were unable to extricate the victim from the machine. Emergency personnel were finally able to remove the victim after partially disassembling the machine. The victim was pronounced dead at the scene.

CAUSE OF DEATH

The cause of death according to the death certificate was blunt force and compressive injuries of the chest.

RECOMMENDATIONS / DISCUSSION

Recommendation #1: Press machine manufacturers should design presses that minimize the chances of material falling into or becoming lodged in the machine.

Discussion: When employees retrieve materials that have fallen or become lodged in areas of press machines, they may be at risk for serious injury or death from moving machine parts. In this incident, the machine had no guards or barriers to prevent material falling off the back of the table. If this creasing and cutting press had been designed with such barriers or guards, the victim would not have needed to retrieve the material.

Recommendation #2: Employers should design and implement machine specific safe work procedures for removal of displaced material from presses.

Discussion: During routine machine operations and/or setup, material may become lodged in the press. When this happens, the operator may need access to potential pinch points to retrieve the material. During this process the operator is at risk for entrapped body parts, serious injury, or death. In this case, the machine operator attempted to retrieve a piece of plastic that had fallen into the machine. If the employer in this incident had implemented safe procedures for retrieving displaced materials, the victim may not have placed himself in a pinch point of an energized machine. Examples of the types of procedures that might have been used are lock-out/tag-out or the use of a long-handled tool.

Recommendation #3: Employers should fully train all press machine operators in how to retrieve displaced materials and verify their knowledge and skills through testing.

Discussion: It is not known what training the victim had received in dealing with displaced material prior to the incident. At a minimum, press machine safety training should instruct workers to never reach into an unguarded pinch point of a powered press with bare hands. Although the victim had been observed operating the machine and was judged competent by the employer, there was no comprehensive, documented evaluation program that could have precisely demonstrated the victim's knowledge of safe work practices. By instituting comprehensive training programs with thorough follow-up evaluation, employers can insure that every worker receives the same level of instruction covering every aspect important to the safe operation of their machine.

References:

California Code of Regulations, Subchapter 7. General Industry Safety Orders, Subchapter 7. General Industry Safety Orders

Group 2. Safe Practices and Personal Protection Article 7. Miscellaneous Safe Practices

§3314. The Control of Hazardous Energy for the Cleaning, Repairing, Servicing, Setting-Up, and Adjusting Operations of Prime Movers, Machinery and Equipment, Including Lockout/Tagout.

Group 8. Points of Operation and Other Hazardous Parts of Machinery Article 55. Power Operated Presses

<http://www.made-in-china.com/showroom/zjguangya/product-detailKouxQrdkgaWh/China-Creasing-and-Die-Cutting-Machine-ML-1400-.html>

EXHIBITS:



Exhibit 1. The machine involved in the incident in the open position.



Exhibit 2. The machine involved in the incident in the closed position.



Exhibit 3. The area where the victim reached into the machine.



Exhibit 4. Additional view of the machine involved in the incident.

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FATALITY ASSESSMENT AND CONTROL EVALUATION PROGRAM

The California Department of Public Health, in cooperation with the Public Health Institute and the National Institute for Occupational Safety and Health (NIOSH), conducts investigations of work-related fatalities. The goal of the CA/FACE program is to prevent fatal work injuries. CA/FACE aims to achieve this goal by studying the work environment, the worker, the task the worker was performing, the tools the worker was using, the energy exchange resulting in fatal injury, and the role of management in controlling how these factors interact. NIOSH-funded, State-based FACE programs include: California, Iowa, Kentucky, Massachusetts, Michigan, New Jersey, New York, Oregon, and Washington.

Additional information regarding the CA/FACE program is available from:

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