



## The National Institute for Occupational Safety and Health (NIOSH)



# Warehouseman Falls 70 feet to His Death Through an Open Elevator Shaft in New Jersey

New Jersey Case Report: 90NJ010 (formerly NJ9008)

DATE: April 11, 1991

## SUMMARY

On July 2, 1990, a 45-year-old warehouseman died as a result of a 70-foot fall through an open elevator shaft in a refrigerated warehouse of frozen food products. The victim took a loaded pallet jack by elevator to the seventh floor and left the elevator door open while a co-worker took the elevator to the eighth floor. The victim stepped backwards into the open elevator shaft and fell to his death. NJDOH FACE personnel determined that:

- All freight elevators must have an operating interlocking safety device which does not permit the elevator to move while its doors are open;
- A communication device (telephone) should be placed on each elevator and at each floor. The elevator operator can then be summoned to bring the elevator to a specific floor;
- An audible alarm device must be provided in the elevator to call for assistance in case of emergency;
- The employer and employees must jointly evaluate each job task and prepare written safety instructions for each job.

## INTRODUCTION

On July 2, 1990, a warehouseman, moving a pallet of frozen food, stepped backwards into a open elevator shaft on the 7th floor of a refrigerated warehouse and fell 70 feet to the bottom of the elevator shaft. On July 3, 1990, an OSHA safety supervisor informed the New Jersey FACE investigators of the fatality. On July 5, 1990, a FACE investigator and an OSHA compliance officer and OSHA trainee met with company officials and the victim's co-workers. We rode the elevator to the 7th floor, and photographed the site of the fatal fall. The employer is a small frozen food warehousing company which has been in business five years. The company employs 25 people. The company has no safety officer and no written safety policy and procedures. The workers, including the deceased, were members of a large national union. The victim was hired by an earlier company on the same premises, five years prior to the current management. It was unknown whether the victim had any formal training in operating his pallet jack or the warehouse elevators.

The refrigerated warehouse is 63 years old. It has four freight elevators each of which have a front and a back door and a capacity of 4,000 pounds. The elevators go to eight floors. The internal dimension of each elevator is 7 ft. 4 inches long by 6 ft. 10 inches wide. The elevator does not move unless someone in it is operating it. There is no summoning device for calling the elevator to any floor. For example, at the time of the incident, in order to "call" the elevator to the first (main)

floor, workers had to open the outer door to the elevator and see if the elevator was there. If not, the inside wooden gate had to be lifted and the worker had to yell up the elevator shaft to ask the person operating the elevator to bring it down. Likewise, workers had to lean into the open elevator shaft from upper floors to call the elevator to a higher floor.

The workers– mostly warehouseman– manually operate electric pallet jacks that carry frozen food to and from the upper floors. The pallet jacks have a small electric motor, a handle, and a forklift for carrying pallets loaded with frozen food. The pallet jack is operated from the handle which can be moved side-to-side, or up and down.

## INVESTIGATION

After the victim worked his regular shift (8 to 4:30), he continued to work overtime. At 5:30 pm he took a load of frozen food from the first floor to the freezer (8° F) on the seventh floor; a co-worker rode the same elevator.

The victim got off at the seventh floor. The co-worker took the elevator to the eighth floor. The door to the elevator shaft on the seventh floor remained open. Prior to the victim's arrival on the seventh floor, another co-worker dropped off a load of frozen food on the seventh floor. He was walking with his pallet jack toward the victim as the victim exited the elevator. The victim's pallet was 112 inches long (motor and forklift was 72 inches and handle was 40 inches in the extended operating position). Due to a structural pole 103 inches from the elevator door, the pallet jack must be maneuvered to the left or right to get onto the floor. Thus, the victim had to maneuver his pallet jack around a tight corner. The co-worker asked the victim to let him pass by with his pallet jack; the victim said "keep coming" to the co-worker.

The floor area just outside the elevator had some ice on it as condensation froze due to the 8° F temperature on the seventh floor. When asked to move backward, the victim stepped back with his pallet jack into the open elevator shaft while holding on to its handle. The co-worker rushed over to help the victim, who was dangling in the open elevator shaft holding on to the handle of the pallet jack. The victim grabbed on to a "cable" in the elevator, probably an electrical wire, but could not hold on to it and fell 70 feet to his death. He was pronounced dead at the scene.

## CAUSE OF DEATH

The cause of death was listed by the medical examiner as multiple traumatic injuries from a fall down an elevator shaft at work.

## RECOMMENDATIONS/DISCUSSIONS

**Recommendation #1: All freight elevators must have an operating interlocking safety device which does not permit the elevator to move while its door is open. (ANSI Standard A17.3-1986)<sup>1</sup>**

Discussion: The interlocking safety devices on all 64 doors (4 elevators x 8 floors x 2 doors) to the elevators in the warehouse had been disconnected for several years. This made it possible for the elevators to move with their doors open, exposing employees to a fall hazard.

**Recommendation #2: A communication device (telephone) should be placed on each elevator and at each floor. The elevator operator can then be summoned to bring the elevator to a specific floor.**

Discussion: At the time of the incident, when the elevator went to another floor, an employee had to lean into the open shaft to yell to the person operating the elevator to bring it to the floor at which it was needed. With a communication device (telephone) in the elevator itself, an employee can pick up a phone outside of the closed elevator door on any floor and call to the person operating the elevator.

**Recommendation #3: An audible alarm device must be provided in the elevator to call for assistance in case of emergency. (ANSI standard A17.3 1986)**

Discussion: An alarm device would help to notify other employees that emergency assistance is needed. A telephone in the elevator could then be used to call for specific assistance as needed.

**Recommendation #4: The employer and employees must jointly evaluate each job task and prepare written safety instructions for each job.**

Discussion: Although a legal responsibility of the employer, safety concerns should be a joint effort of both labor and management. Evaluations done jointly are more likely to create an atmosphere of safety awareness than if evaluations are done unilaterally. Safety materials, prepared as photographs with a minimum amount of text, should be made appropriate for the lowest level of educational achievement of the employees.

## REFERENCES

1. The American Society of Mechanical Engineers, Safety Code for Existing Elevators and Escalators ANSI/ASME 17.3,1986. United Engineering Center, NY, NY.

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### FATAL ACCIDENT CIRCUMSTANCES AND EPIDEMIOLOGY (FACE) PROJECT

Staff members of the FACE project of the New Jersey Department of Health, Occupational Health Service, perform FACE investigations when there is a work-related fatal fall or electrocution reported. The goal of these investigations is to prevent fatal work injuries in the future by studying: the working 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.

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Page last reviewed: November 18, 2015  
Content source: [National Institute for Occupational Safety and Health](#)