

Indiana State Department of Health
Indiana FACE 96IN06701
Date: July 12, 1996

TO: Charles L. Barrett, M.D., M.S.P.H., Medical Epidemiologist
Epidemiology Resource Center

FROM: Richard L. Warren, Indiana FACE Investigator

SUBJECT: Material handler dies after being struck by a mold envelope dropped from a forklift

SUMMARY:

On June 5, 1996, a 42-year-old male (the victim) employed as a material handler at an aluminum wheel manufacturing company, died instantly after being struck by a mold envelope which was dropped from a forklift. The victim had parked his forklift out of the aisle and had gotten down to talk to a co-worker. The victim then stepped out from behind a rack of aluminum wheels (called a tree) as a forklift was coming around the corner with its load. The forklift was carrying a mold envelope containing two half-moon shaped molds in cradles. The mold envelope was 59" wide, 35" deep, and 50" high. The combined weight of mold envelope and mold components was 4368 pounds. The victim walked into the aisle with his back turned away from the oncoming forklift. Evidence suggests the forklift operator slammed on the brakes causing the forklift to pitch forward allowing the mold envelope to slide off the forks striking the victim and killing him instantly. The forklift operator jumped off the truck and with the help of several co-workers removed the mold envelope from the victim. The emergency medical service (EMS), police, and the county coroner were called. The victim was pronounced dead at the scene by the county coroner. The FACE investigator concluded that, in order to prevent similar incidents employers should:

1. Ensure that workers continually adhere to the safe work procedures that have been established by the employer.
 - a)
2. Ensure that if the load being carried obstructs forward view, the operator shall be required to travel with the load trailing.
 - a)
3. Ensure all traffic regulations be observed, including authorized plant speed limits.

INTRODUCTION:

On June 5, 1996, a 42-year-old material handler (the victim) working at an aluminum wheel manufacturing company died instantly after a mold envelope used in the manufacture of aluminum wheels was dropped from a forklift. On June 11, 1996, officials from the Indiana Safety and Health Administration (IOSHA) notified the Indiana FACE program of this fatality and asked if we wanted to do our investigation along with IOSHA. On June 11, 1996, the incident was reviewed with a representative from IOSHA, the FACE investigator and employer representatives.

The employer in this incident is an aluminum wheel manufacturer that employs 462 working three shifts. The employer supplies aluminum wheels for automobile manufacturers. The company has safety committees working on all three shifts in addition to their normal working duties. The company safety policies for forklifts include mandatory class room study, watching a video on forklift safety, and mandatory written and driving test. The driving test is repeated annually along with the video on forklift safety. At the start of each shift, each employee is required to give his truck a safety check and sign off he completed it. The employer has been accident free for 2 years. The victim was employed as a material handler for 3 1/2 years.

INVESTIGATION:

Normal daily activities occur in 3 work shifts. These duties include forklift operators transporting mold envelopes from one area of the plant to another. Inventories of aluminum wheels are stored on trees (racks). The racks are 54" wide x 79" long x 66" high and the other side cannot be seen when they are full of aluminum wheels. The tree in this incident was 15 feet from a T intersection where a forklift was coming around the corner carrying a mold envelope to another station.

The victim worked the second shift (3 to 11 PM). At the beginning of each work shift company safety policy states each forklift operator starting his shift will give his truck a safety inspection and sign off he has inspected his truck before beginning the shift. The truck involved in the incident had not been signed off for that shift but was signed off the previous day with no mechanical problems. The victim began the shift with his normal routine using his forklift to transfer mold envelopes from one station to another. For some unknown reason the victim had parked his forklift 18' 6" in front of a tree of aluminum wheels and had gotten off to talk with a co-worker in back of the tree by the T intersection. At the time of the incident a forklift was coming around the T intersection carrying a mold envelope in a forward position. When the victim suddenly walked out from behind the tree, the forklift operator slammed on the brakes to avoid hitting him. The forklift lunged forward and dropped the 4368 lb mold envelope on the victim killing him instantly. Evidence indicates the capacity of the forklift used in this incident was 5000 lb. The total weight of the mold envelope and its components was 4368 lb. This Could suggest why the truck lunged forward and lost its load when the brakes were slammed on. The skid marks left by the truck when the brakes were applied were measured as 2 feet 5 inches followed by a space of 11

inches and a second skid mark of 12 inches. This would indicate, because a forklift normally brakes with its rear wheels, that when the forklift operator slammed on his brakes the load shifted forward and the forklift tilted forward. The forklift operator stated that he could not see behind the tree nor could he see forward without looking from side to side as he was transporting the load. The forklift operator stated it is a common practice for all the forklift operators to carry the mold envelopes forward instead of trailing the load. The EMS, police and county coroner arrived on the scene in a matter of minutes.

CAUSE OF DEATH:

The cause of death as stated on the certificate of death is massive head and chest injuries with crushing trauma.

RECOMMENDATIONS AND DISCUSSION

RECOMMENDATION # 1: Employers should ensure that workers adhere to the safe work procedures that have been established by the employer.

DISCUSSION: Employers should continually stress the importance of adherence to established safe work procedures. Where industrial trucks are used on a round the clock basis, they should be examined after each shift. In this instance, company policy required such a safety check but there was no evidence that an inspection was done before the shift during which the fatal incident occurred. A load should be adequately secured to the fork lift to prevent its loss during a sudden stop or other abrupt maneuver. The company since the incident is now requiring the load be chained to the forklift before transporting.

RECOMMENDATION # 2: Employers should ensure that if the load being carried obstructs forward view, the operator shall be required to travel with the load trailing.

DISCUSSION: In this incident the forklift operator's view was hindered by the load being carried in a forward position could have only seen the victim directly in front when it was too late to stop. Evidence indicates when the victim was talking to the co-worker behind the tree of aluminum wheels the view was also obscured from the forklift operator. As stated by the forklift operator involved in the incident carrying the mold envelopes in a forward position is common practice in the plant. It was also stated that some loads in the past have been lost but without incident. OSHA regulations 1910.178 (4) states the operator shall be required to slow down and sound the horn at cross aisles and other locations where vision is obstructed. If the load being carried obstructs forward view, the operator shall be required to travel with the load trailing.

OSHA regulation 1910.178 (6) states the operator shall be required to look in the direction of, and keep a clear view of the path of travel. The employer is now enforcing this regulation.

RECOMMENDATION #3: Employers should ensure all traffic regulations be observed, including authorized plant speed limits.

DISCUSSION: In this incident evidence indicates the forklift operator may have been traveling too fast for his load. When the forklift operator slammed on his brakes the first measured skid mark was 2 feet 5 inches followed by a space of 11 inches and a second measured skid mark of 12 inches. This would indicate, because a forklift normally brakes with its rear wheels, that when the forklift operator slammed on his brakes, the load shifted forward and the forklift tilted forward. After losing its load it came back down with the brakes still on and skidded another 12 inches. OSHA regulation 1910.178 (14-n) states all traffic regulations shall be observed, including authorized plant speed limits. A safe distance shall be maintained, approximately three truck lengths from the truck ahead, and the truck shall be kept under control at all times. OSHA regulation 1919.178 (8) states under all travel conditions the truck shall be operated at a speed that will permit it to be brought to a stop in a safe manner.

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What is the FACE Program?

FACE is one of many prevention programs conducted by the Indiana State Department of Health (ISDH). FACE stands for "Fatality Assessment and Control Evaluation." The purpose of FACE is to identify factors that increase the risk of work-related fatal injury. Identification of risk factors will enable more effective interventions to be developed and implemented. The FACE Program does not just count fatalities. It uses information gained from each fatality investigation to develop programs and recommendations aimed at preventing future occupational fatalities.

Who can you contact for additional information?

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