

The Missouri Department of Health in cooperation with the National Institute for Occupational Safety and Health (NIOSH) is conducting a research project on work related fatalities in Missouri. The goal of this project, entitled *Missouri Fatal Accident Circumstances and Epidemiology (MO FACE)* is to show a measurable reduction in traumatic occupational fatalities in the state of Missouri. This goal will be met by identifying causal and risk factors that contribute to work related fatalities. The identification of these factors will enable more effective intervention strategies to be developed, and implemented by employers and employees. This project does not determine fault or legal liability associated with a fatality incident nor with current regulations. All MO FACE data will be reported to NIOSH for trend analysis on a national basis. This will help NIOSH provide employers effective recommendations for injury prevention. All personal/company identifiers will be removed from all reports to send to NIOSH to protect the confidentiality of all those voluntarily participating with the program.

**FACE Investigation: #92MO00101**

**SUBJECT:** Sanitation Worker Dies After Falling from Rear of Moving Refuse Collection Vehicle in Missouri.

**SUMMARY:**

A 33 year-old male sanitation worker (victim) died after falling from the back of a moving refuse collection vehicle. The victim, co-worker, and driver were following a routine commercial refuse collection route. It was raining and the victim was standing on a steel platform on the right rear side of the truck. The truck had completed a left turn and traveled approximately 70 feet when the victim fell from the platform and on to the street. His head struck the pavement in the area of the concrete curbing on the right side of the roadway. He was found unconscious and bleeding from the nose and mouth. He was taken by ambulance to the local hospital then later transferred by ambulance to a trauma center. According to the coroners report the victim had multiple birth defects including cerebral palsy and had some weakness on one side of the body. The associated risk of these disabilities, if any, is not determinable. The MO FACE investigator concluded that, in order to prevent similar occurrences, employers should:

- \* Consider the use of a fall restraining system for the riders on the garbage collection vehicles.
- \* Provide a non-slip platform on which the employee should stand.
- \* Require that safety shoes with non-skid soles be worn by employees at all times.
- \* Institute a job-analysis program to determine the physical qualifications of the position and necessary physical capabilities of the employee.

## INTRODUCTION:

On March 18, 1992, a 33 year-old male sanitation worker (victim) sustained fatal head injuries after falling from the rear of a moving refuse collection vehicle. The Missouri Department of Health was notified through a news clipping service the same month. The Occupational Safety and Health Administration (OSHA) did not investigate the incident because incidents involving municipal employees were out of their legal jurisdiction. The investigation was initiated by the MO FACE investigator on April 14, 1992. Reports from the local police department, the local ambulance service and the county coroner's office were obtained. Photographs include the vehicle involved and the incident sight. The supervisor and the two co-workers were personally interviewed. The municipality involved employed 215 persons. Their sanitation department employed 19 persons. The municipality had a general written safety policy, a safety coordinator and had specific safety rules for riding on the refuse collection vehicles. Employee training was accomplished through monthly classroom safety meetings and on the job supervision. All refuse collection vehicles were equipped with two way radios through which personnel are to contact the dispatcher in the event of an emergency. The Sanitation Department provided each employee with two types of gloves and did require work boots to be worn at all times. The victim was employed in the Sanitation Department for almost 15 years, and had an excellent safety record.

## INVESTIGATION:

The employer had assigned the commercial refuse collection crew to a routine commercial route. The crew consisted of a refuse truck driver, and two refuse collectors, one of which was the victim. The weather conditions were rainy and 43 degrees.

According to the employer's written standard operating procedure, and which was posted on both sides of the truck, employees could routinely ride on the back of the truck when distance between stops was less than 2/10 of a mile. The victim was standing on a "skid-resistant", steel platform approximately 22 inches from ground level on the right rear of the truck and holding on to the hand holds, located to the side of the compactor cavity. The driver exited right from a private parking lot traveled 1/2 block and then turned left onto a city street. The co-worker, riding on the left rear side of the vehicle, and the victim had been talking immediately before the accident. The co-worker looked forward and then looked back and noticed the victim had slipped from the platform but was still holding to the hand holds. The victim lost his grip and fell to the street approximately 70 feet from the corner. The victim's head struck the pavement in the area of the concrete curbing on the right side of the street. The co-worker signaled to the driver to stop. The driver radioed in an emergency situation. An ambulance and police were summoned to the scene. He was found unconscious and bleeding from the nose and mouth. Cardio-pulmonary resuscitation was initiated by EMT personnel. The victim was transported by ambulance to a regional hospital and then transferred by ambulance to a Level 1 trauma center.

The victim had on rubber boots with laces and lugged soles. He was wearing rubber non-slip gloves. According to the police report, the temperature was 43 degrees, it was daylight, and raining. The gloves were tested by the police investigator and found the slip resistance to be impaired when the gloves were wet. The road was straight and level and the driver's vision was not obscured. Site inspection showed no road hazards nor recent road repairs in the vicinity of the incident.

According to the coroner's report, the victim had multiple birth defects including cerebral palsy and had a weakness on one side of his body. The presence of these disabilities was not considered influential in determining causative factors in this case though were noted to inform employers to be aware of the physical capabilities of their employees.

This employer does have and did enforce a comprehensive safety program. They held scheduled safety meetings monthly and employed a safety incentive program. Employers should continue to emphasize the safety of their employees and continue training workers in the recognition and avoidance of all work hazards.

We see here that anytime a 33 year-old male, 15 year veteran of the position, and with an excellent safety record, can fall from a slow moving refuse truck and be fatally injured is definite cause for alarm. Not only with regard to the municipality involved but also to the industry as a whole. The fact remains that a refuse collector fell to his death. There is a great need to prevent falls like this. The most effective way to prevent similar falls is through a fall prevention device. The implementation of a tie off lanyard that attaches to the rider any time he rides on the platform is a definite must.

#### CAUSE OF DEATH:

According to the Medical Examiner, the cause of death was blunt trauma to the head with marked subarachnoid hemorrhage, and cerebral edema

#### RECOMMENDATIONS/DISCUSSION:

Recommendation #1: Employers should install a tie-off lanyard on to the truck and provide riders on the vehicle with a safety belt that attaches to the lanyard.

Discussion: The employer should install a point of tie off on the truck to which a lanyard is attached. The lanyard is then connected to the employee's safety belt any time the employee rides on the platform. The fall in this instance played a causal role in the fatality. An effective counter measure to prevent a similar fall is through attachment to the truck by a lanyard.

Recommendation #2: Employers should install non-skid, "self-cleaning riding and cab steps

and extended, slip resistant handholds"<sup>1</sup> on the vehicle.

Discussion: The employer should install platforms for the employees to stand on that are self-cleaning and have a non-skid surface. The platform provided did have a skid resistant surface but since the surface was wet and it may not have provided the slip resistance needed. The employer should also install slip resistant handholds, The handholds provided were of a smooth tubular steel with no slip resistant coating and with the reported impairment of the slip resistance of the gloves when wet may have not provided the gripping capacity needed to safely ride on the vehicle.

Recommendation #3: Employers should require safety shoes with non-skid soles be worn at all times while on the job.

Discussion: The employer should implement 29 CFR 1910.132<sup>2</sup> that required personal protection equipment be provided, used, and maintained whenever it is necessary to prevent injury from existing hazards. In this incident, the victim was wearing a rubber laced style boot with lugged soles, it is not clear why the victim's feet left the platform, but want to emphasize the need to use any and all safety wear that is required and suggested to use.

Recommendation #4: The employer should institute a job-analysis program to determine the physical requirements, the position, and the required physical capabilities of the employee.

Discussion: The victim reportedly had multiple birth defects, including cerebral palsy, and weakness on one side of his body. This is not considered to be a causal factor in this case because the employee had been on the job for 15 years with an excellent safety record. Historically, physical impairments had not been detrimental in the execution of the victim's duties. This fact is discussed in order to bring to employers attention the need to match the physical capacity of the position to the physical capabilities of the employee. It may be in the employer's best interest to watch for signs of physical impairments in order to protect employees from dangerous situations incurred while on the job.

## REFERENCES:

1. U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, Public Health Service, Centers for Disease Control, National Institute for Occupational Safety and Health. Residential Waste Collection: Hazard Recognition and Prevention. pp. 3-4. March 1992.
2. Office of the Federal Register, Code of the Federal Regulations, Labor, 29 CFR Part

1910.132 pp. 400. July 1, 1990.

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