

January 4, 1995

Nebraska FACE Investigation 94NE059

**SUBJECT:**

Asphalt Roller Crushes Flagman

**SUMMARY:**

A 20 year-old road construction company flagman was crushed to death when he fell from and was subsequently run over by an asphalt roller.

The Nebraska Department of Labor investigator concluded that to prevent future similar occurrences, employers should:

- \* Establish a comprehensive training program for all personnel operating specialized machinery to include "hands-on" training and documentation.
- \* Establish a thorough vehicle maintenance and inspection program.
- \* Develop, implement and enforce a comprehensive safety program that includes, but is not limited to, training in all hazard recognition.

**PROGRAM OBJECTIVE:**

The goal of the workplace investigation is to prevent work-related deaths or injuries in the future by a study of the working environment, the worker, the task the worker was performing, the tools the worker was using, and the role of management in controlling how these factors interact.

This report is generated and distributed **solely** for the purpose of providing current, relevant education to the community on methods to prevent severe occupational injuries.

**INTRODUCTION:**

On November 3, 1994, at 8:30 a.m., a 20 year-old road construction flagman died as a result of injuries he sustained from being crushed by an asphalt roller. The Department of Labor was first aware of this incident by reading about it in the newspaper. The Nebraska FACE investigator accompanied an OSHA investigator to the incident site on November 14, 1994 and interviewed the employer, witnesses to the incident and other company employees.

The employer is a road construction company who has been in business for 36 years. The company employs approximately 75 personnel. This was the first fatality in the history of the company. The company had a written safety program and a designated safety officer who also performed other duties. The company conducted weekly safety meetings to promote job safety.

## **INVESTIGATION:**

The victim had been employed by the company for three days. He was performing duties as a flagman. The company was in the process of resurfacing a highway when this incident occurred.

The asphalt roller operator was driving the roller up an approximate 10 degree incline and attempted to shift into a higher gear while he was moving forward. The roller did not shift to the higher gear and became stuck in neutral. The roller then began moving backwards down the incline and the operator was unable to stop it with the foot brake. No attempt was made to apply the emergency brake. As the roller was going downhill and gaining speed (a witness said it appeared to be going approximately 20 mph), the operator saw cars approaching on the road. To avoid the possibility of hitting the cars he decided to turn the roller into the ditch. He informed the flagman, who was riding on the roller, of his intentions and told him to jump clear of the roller when he drove off the pavement. A witness said it appeared the victim was thrown from the roller when it left the pavement. When the roller left the pavement it rolled backward into a culvert at an opposite incline and then rolled forward. When it rolled forward the roller drum rolled over and came to rest on the flagman's head. A witness to the incident immediately responded and directed the roller operator to reverse the roller off the victim. The injuries were too severe for any first aid to be rendered. The victim died at the incident site.

There were several events that eventually led to this fatality. First, the flagman should not have been a rider on the asphalt roller. It was written company policy that non-operators were not allowed to ride equipment. Everyone I spoke with was aware of this policy. Secondly, the asphalt roller operator should not have attempted to shift gears while the roller was in motion. The asphalt roller involved in the incident had a placard by the gear shift that stated "Do not attempt to shift transmission while machine is moving. Failure to follow these instructions could result in loss of control which could result in serious injury or death." The roller operator said this prohibition was not explained to him when he was trained on the operating the roller. He said the training was only 10 to 15 minutes, verbal and "hands-on." No written training on operating the asphalt roller was given to the operator nor was the limited training provided documented.

Thirdly, the operator stated he applied the foot brake with as much force as he could and it had no effect. An inspection of the roller after the incident revealed an aerosol can of starting fluid in the area of the brake pedal. It is quite possible this can was lodged under the brake pedal when the pedal was pushed thus preventing the brakes from engaging. Subsequent tests on the roller showed the foot brake to be operational.

## **CAUSE OF DEATH:**

The cause of death was massive head trauma.

## **RECOMMENDATIONS/DISCUSSION:**

Recommendation #1: Establish a comprehensive training program for all personnel operating specialized machinery to include "hands-on" training and documentation.

Discussion: A specific training plan should be developed for each piece of specialized machinery. This plan should cover all basic operating procedures and all safety precautions. Had the asphalt roller operator in this incident been thoroughly trained on operating this specific roller the incident might have been prevented. The training should have stressed the danger of shifting gears while roller is in motion. This training should also be well documented. This would assist an employer in knowing who is authorized to operate what equipment.

Recommendation #2: Establish a thorough vehicle maintenance and inspection program.

Discussion: 29CFR1926.601 Motor Vehicles (6) (14) states all vehicles in used shall be checked at the beginning of each shift to assure following parts, such as tires, hoses, brakes, etc., equipment, and accessories are in safe operating condition and free of apparent damage that could cause failure while in use. A pre-use inspection of the incident roller should have detected the loose aerosol can near the brake pedal. Had this can been removed or properly secured during the pre-use inspection the brake might have worked properly when applied and the incident might have been prevented.

Recommendation #3: Develop, implement and enforce a comprehensive safety program that includes, but is not limited to, training in all hazard recognition.

Discussion: A key factor in any safety program is compliance and enforcement. When requirements are written in a safety plan, such as not riding on equipment, results of violating these requirements should also be discussed.

## **REFERENCES:**

1. Office of the Federal Register National Archives and Records Administration, Code of Federal Regulation, Labor, 29CFR 1926.601, 1994