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, known as the Missouri Occupational Fatality Assessment and Control Evaluation (MO FACE), is to show a measurable reduction in traumatic occupational fatalities in the State of Missouri. This goal is being 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 fatal incident or 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 with effective recommendations for injury prevention. All personal/company identifiers are removed from all reports sent to NIOSH to protect the confidentiality of those who voluntarily participate with the program.

FACE INVESTIGATION: #92MO048

SUBJECT: Refuse Collector Crushed by Refuse Truck Compactor

SUMMARY:

A 24-year-old refuse collector died as a result of being crushed by the compactor blade of a refuse truck. The victim had reached into the truck compactor compartment to salvage a piece of brass from a discarded lavatory. The compactor blade inadvertently activated and the victim could not escape.

The MO FACE investigator concluded that to prevent future similar occurrences employers should:

* **develop, implement and enforce a comprehensive safety program that includes, but not limited to, training in hazard recognition and avoidance.**

* **install warning lights and warning sound indicators when compactor mechanism is engaged.**

INTRODUCTION:

On December 1, 1992, at approximately 1:20 p.m., a 24-year-old refuse collector died due to injuries received when the compactor blade of a refuse collection truck inadvertently activated and crushed the victim's neck and chest. The Missouri Department of Health FACE Investigator was notified of the fatality by the city police, the city and county safety coordinator, the responding ambulance crew, and the county coroner between 2:15 P.M. and 4:00 p.m. the same day. The Occupational Safety and Health Administration did not investigate the incident due to they do not have jurisdiction over government agencies. Records obtained regarding this incident include the police report, coroners report and the death certificate, and site photographs. The MO FACE investigator interviewed the city safety director and the director of the city refuse department.

The municipality involved employs 215 persons. The city's Sanitation Department, initiated in 1947, employed 19 persons. The municipality had a general written safety policy, a safety coordinator and had specific safety rules with respect to operating the compactor. Employees were trained through monthly 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 case of emergency. The victim was employed in the sanitation department since August of 1991 and was

one of two employees that train all new employees.

INVESTIGATION:

The victim, co-worker, and the refuse truck driver were assigned a routine residential refuse collection route. The workers had been on the job since about 7:00 a.m. that morning and were at the last refuse pickup for the day. The workers had picked up a discarded cast iron sink-lavatory and the victim stated to the co-worker he would like to have the faucet attached to the sink. The workers picked up the sink and placed it into compactor and then activated the compactor blade in an attempt to break the sink so the faucet could be easily recovered. After cycling the compactor completely the faucet broke free from the sink but was lost in the remaining garbage in the compactor. The victim started the compactor cycle again in an attempt to uncover the faucet. The compactor cycled on more time. The victim started a third cycle when the victim spotted the faucet and stopped the compactor blade in mid cycle. He then reached into the compactor to retrieve the faucet when the compactor blade began cycling again. The co-worker tried to warn the victim and pull him out to the compactor but the blade was already pinning and pulling the victim into the compactor. The co-worker then went to the side of the truck, pulled the emergency shut-off switch and yelled to the driver to shut down the truck.

A neighbor was nearby and heard the co-worker yell, she saw the pinned victim and went and called 911. The driver of the truck radioed in the emergency on the vehicle two way radio.

Emergency responders were dispatched to the scene and attempted to rescue the victim. The injuries sustained caused instant death and the coroner was summoned to the scene.

CAUSE OF DEATH:

Crushed Chest Injury, Transection of Lower Cervical Spine.

RECOMMENDATION/DISCUSSION:

RECOMMENDATION #1: Employers should develop, implement and enforce a comprehensive safety program that includes, but not limited to, training in hazard recognition and avoidance.

DISCUSSION: Employers should emphasize the safety of their employees by developing, implementing, and enforcing a comprehensive safety program. The safety program should include, but not limited to, training workers in the proper selection and use of personal protection equipment, along with the recognition and avoidance of workplace hazards.

This employer did have and did enforce a comprehensive training program. We want to emphasize that all employers need to stress to their employees the importance of recognizing and avoiding all hazards in the workplace. Even with their safety program in place, and with signs placed in several highly visible areas on this vehicle warning of these potential hazards, the workers failed to comply. The workers involved in this incident may not have realized the potential hazards of working with powerful compaction equipment.

Train yourself and your employees in workplace hazard recognition and avoidance.

RECOMMENDATION #2: Install warning lights and warning sound indicators when compactor mechanism is engaged.

Discussion: Though the installation of these warning devices will not engineer out the existence of this hazard, they will bring attention to the workers that the compactor is activated and to stand clear.

INTERVENTION:

During discussions of this incident, all parties involved came to a consensus on safety measures to be taken. These measures consisted of installing warning lights and audible alarms on all city refuse collection vehicles. These warning signals would activate and continue to operate when the truck's PTO and compactor are in use, and could potentially aid in alerting workers to the present danger. The city installed these warning signals on their trucks and will continue to maintain them.

SIGNATURES:

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Thomas D. Ray	Daryl Roberts
MO FACE Chief Investigator	Chief
Program Coordinator	Bureau of Environmental Epidemiology

Dissemination List

National Institute for Occupational Safety and Health	NIOSH
Alaska Department of Health and Social Services	AK FACE Program
California Public Health Foundation	CA FACE Program
California Public Health Foundation	CA FACE Program
Colorado Department of Health	CO FACE Program
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Indiana State Department of Health	IN FACE Program
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Minnesota Department of Health	MN FACE Program
State of New Jersey Department of Health	NJ FACE Program
Wisconsin Division of Health	WI FACE Program
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Jackson County Missouri Office of the Medical Examiner
Mine Safety and Health Administration
Missouri Department of Agriculture
Missouri Department of Elementary & Secondary Education
Missouri Department of Health, Office of Injury Control
Missouri Department of Labor and Industrial Relations
Missouri Department of Public Safety
Missouri Department of Social Services
Missouri Farm Bureau
Missouri Head Injury Advisory Council
Missouri Hospital Association
Missouri Injury Control Advisory Council
Missouri Police Chiefs Association
Missouri Safety Council
Missouri Sheriff's Association
Missouri Southern State College
Missouri State Labor Council, AFL-CIO
North Central Missouri Safety Council
OSHA Area Office, Kansas City, MO
OSHA Area Office, St. Louis, MO
Safety and Health Council of Western Missouri & Kansas
Safety Council of Greater St. Louis
Safety Council of the Ozarks
Shelter Insurance Companies
St. Joseph Safety Council
St. Louis City Medical Examiner Office
St. Louis County Department of Community Health
St. Louis County Medical Examiner Office
The Educational Center on Family Violence
University of Missouri, Agricultural Engineering