

**TO:Director, Occupational Health Surveillance Program,
Massachusetts Department of Public Health**

**FROM:Massachusetts Fatality Assessment and Control
Evaluation (MA FACE) Program Field Investigator**

**SUBJECT:Cleaning Company Laborer Crushed by Toppled Paper
Bales While Working at Massachusetts Recycling Plant
MA-93-04**

DATE:April 18, 1994

SUMMARY

On April 30, 1993, an 18 year old, male cleaning company laborer was killed and a co-worker was seriously injured when several 1,300 pound wire-bound paper bales fell on top of them at a Massachusetts paper recycling plant. The victim and coworker were performing routine sweeping duties in the plant when the stacked paper bales toppled down on them from an eighteen foot height. The victim was pronounced dead on the scene, and the coworker was airlifted to a regional hospital where he survived the acute trauma.

To prevent similar future occurrences, the Massachusetts FACE Program concluded that employers should:

- ensure that forklift operators properly stack and secure materials to prevent slippage or collapse;
- consider using stanchions with chains to brace stacked materials;
- ensure that contracted cleaning company personnel are fully informed of potential jobsite safety hazards.

In addition, government agencies should:

- clarify who is responsible for providing both general and job specific health and safety training to personnel from temporary agencies.

INTRODUCTION

On May 3, 1993, the state medical examiners office notified the Massachusetts FACE Program through its hotline that an 18 year old, male, cleaning company laborer had been crushed to death at

a waste paper recycling plant. On May 6th, the MA FACE Field Investigator travelled to the incident site and interviewed the paper recycling plant owner. The Massachusetts Department of Labor and Industries and the municipal police department were also contacted to provide incident information. The police report, corporate organization papers, death certificate and multiple photographs were obtained during the course of the investigation.

Although the victim was employed by an independent cleaning service, it is the waste paper recycling plant and its associated hazards that are the basis of this report. The owner described his company as a year round paper recycling and packaging company, which employed an average of 8-10 persons over its 4 year and 2 month existence. He routinely contracted with the cleaning service which would provide 3-4 man crews, primarily laborers, on a regular basis.

The company did not employ a designated safety person or have any written safety policies or procedures in place at the time of the incident.

INVESTIGATION

On April 30, 1993, an 18 year old cleaning company laborer reported with his co-workers to a Massachusetts waste paper recycling plant to provide routine cleaning services. The plant packaged and supplied recycled waste paper. Waste paper material was collected, separated, bound and stacked in bales on-site. The bales were stored until they were sold to papermaking facilities.

The victim and two of his co-workers were alone in the main facility sweeping up in relatively close proximity to one another around 3:55 p.m. Only 90 minutes into their first day of employment at this site, the men were sweeping in the vicinity of the plant waste paper conveyor and stacked paper bales when four of the bales of wire bound waste paper fell approximately 18 feet onto the victim and one of his co-workers. The bales weighed approximately 1,300 pounds and measured approximately 4 feet, by 2 1/2 feet, by 5 feet each. Immediately after the incident, the uninjured co-worker called out for help, and several plant employees responded, aiding in the removal of the paper bales from on top of the men. Moments thereafter, emergency medical services responded to the scene, treated the felled co-worker for multiple injuries, and airlifted him to a regional hospital where he was admitted and listed as stable. The victim however, suffered massive crushing injuries to the upper body and head and was pronounced dead at the scene. A local funeral service transported his body to the area state hospital for autopsy.

Upon immediate inspection of the incident site, the reporting municipal police official observed paper and cardboard bales stacked separately in the plant. The bales were stored approximately 25 feet deep and 18 feet high (7 bales high), along the side of the building. The investigation revealed three problems which may have had a bearing on the incident. First, because it was not possible to stack the bales 7 high using the plant's forklift, the forklift operators were apparently stacking the bales two at a time. The top bales of each column thus overhung the next lower bale by a foot or more, and this may have caused the bale columns to become top heavy. Secondly, due

largely in part to non-exacting bale size and/or shape, lower bales in many columns were not always stacked in a square and firmly seated position on top of one another.

And lastly, the felled column of bales were not supported on the right side. Since no conflicting evidence existed to suggest that the bales were pushed or vibrated from position by operational machinery, the most likely cause of the incident was the manner in which the bales were stacked.

CAUSE OF DEATH

The medical examiner listed the cause of death as multiple injuries.

RECOMMENDATIONS/DISCUSSION

Recommendation #1:Employers should ensure that forklift operators properly stack and secure materials to prevent the possibility of collapse.

OSHA Standard 29 CFR 1910.176 (b) requires that storage of material not create a hazard. Bags, containers, bundles, etc., stored in tiers shall be stacked, blocked, interlocked, and limited in height so that they are stable and secure against sliding or collapse. The stacked waste paper bales at the recycling plant were neither interlocked, blocked, limited in height, nor secured to prevent their collapse. In addition to training on the use of forklift equipment, forklift operators should be fully trained on the proper procedures for stacking and storing materials. Had the forklift operators been trained on the requirements for storing stacked materials, as well as on the importance of these requirements, this incident may have been prevented.

Recommendation #2:Employers should consider using stanchions with chains to brace stacked materials.

In addition to properly stacking baled materials, employers should consider using stanchions linked by chains to further support the bales. To use stanchions, employers would first need to develop a floor plan for the storage of baled materials. Once a plan for consistent storage was devised, employers could determine the optimal placement of the stanchions, and drill holes in the floor for their placement. If stanchions and chains had been routinely used to secure the paper bales from slipping, this incident may have been prevented.

Recommendation #3:Employers should ensure that contracted cleaning company personnel are fully informed of potential jobsite safety hazards.

This incident stresses the importance of basic training in hazard awareness. Temporary labor personnel are frequently placed into potentially hazardous jobsites without the benefit of fundamental hazard awareness training. Both permanent employees and temporary personnel have

the right to be fully trained and informed of potential work area hazards on all job sites. Employers should document all known hazards that exist in their places of business and ensure that all on-site personnel, whether permanent employees or temporary contract labor, are fully informed. If the cleaning service personnel and the equipment operators had received hazard awareness training, they may have identified the hazards from the improperly stored materials, and this incident may have been prevented.

Recommendation #4: Government agencies should clarify who is responsible for providing both general and job specific health and safety training to personnel from temporary agencies.

Many federal safety standards with training requirements specify that both contract and permanent employees must be trained on workplace hazards. Often, however, the scope of training and the party responsible for providing the training are not delineated for the temporary workers. Government agencies should consider specifying who is responsible for training temporary workers. Because temporary employment agencies hire workers who are typically placed in a wide variety of workplaces, it is difficult for such employers to provide effective job specific training. Such employers could, however, provide general health and safety training to their personnel. Government agencies should consider requiring contracting employers to provide temporary workers with job specific safety training, while requiring the temporary agencies to provide general safety and health training. Had such a training requirement been in effect at the time of this incident, the workers may have been trained on the hazards of the job, and the fatal crushing may have been prevented.

LIST OF REFERENCES

Office of the Federal Register: Code of Federal Regulations,
Labor 29 Parts 1910.176 (b) (1992)