MASSACHUSETTS DPH/DLI/NIOSH
FACE MA-92-05
DATE: May 04, 1992

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

FROM: Massachusetts Fatal Accident Circumstances and Epidemiology (MA FACE) Project Field Investigator

SUBJECT: Carpentry Foreman Dies in Fall From Scaffolding in Massachusetts

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SUMMARY

A 29 year male old carpenter (victim) fell 19 feet to his death off of unguarded carpenters bracket scaffolding at a homesite under construction in Massachusetts. At the time of the incident, the building shell was intact beneath a 3-4 inch blanket of ice encrusted snow which had fallen in the hours preceding sunrise. Once positioned on the snow and ice encrusted scaffolding, the victim began pulling the snow towards him with a man-made device to clear the surface for roofing material application. As the snow accumulated about his feet, the victim slipped or tripped off of the planks and fell striking the back of his head and shoulders on the frozen ground below. The victim was pronounced dead approximately 5 hours later in the regional medical center. The Massachusetts FACE Investigator concluded that employers should:

* implement current standard(s) which require the inclusion of guardrailing systems (i.e.,toprails, midrails, toeboards, endrails) when working on elevated platforms

* implement current standard(s) which require the use of safety belts/harnesses, lifelines, and lanyards when working from elevations

* consider and address worker safety in the planning phase of construction projects and on a daily basis if necessary

* develop, implement, and enforce a comprehensive safety program that includes, but is not limited to, training in fall hazard recognition and the use of fall protection devices. Select and appoint a designated safety person

* assure that emergency telephone numbers are conspicuously posted, that an immediate means of nearly instantaneous communication for medical assistance be present and that responsible certified personnel are present on jobsites to render first aid and CPR in emergency situations, if necessary

INTRODUCTION

On December 18, 1991 the Massachusetts FACE Investigator was notified by the Massachusetts Department of Labor and Industries that a municipal police department chief reported a 29 year old carpenter had fallen on a construction site suffering potentially life threatening injuries approximately 1 hour earlier on the same day. The Massachusetts FACE Investigator, anticipating a targeted FACE project death, responded within an hour and joined the Town Police Chief and the Massachusetts Department of Labor and Industries Safety and Health Inspector to review the incident site which remained basically unchanged. Multiple photographs of the site, police report, witness/co-worker statements, employer input, and the death certificate were obtained during the course of the investigation.

The employer in this incident was a general building contracting company in business for 15 years employing 7-10 full time employees as laborers and carpenters. The company did not have any written safety program or designated safety officer. No safety training of any kind was provided. Personnel interviewed indicated that they had experience in the use of fall protection and/or motion-stop systems with previous employers. The victim had been employed by the company for 9 years 3 months and had classroom and on-the-job experience.

INVESTIGATION

The company had been contracted by a private concern to construct a 4,000 square foot home. At the time of the incident, the building shell was intact and the crew were preparing to continue roofing operations to make the shell more weather tight. On the morning of Wednesday 18 December 91, following a 3-4 inch ice encrusted snow accumulation from the evening and early morning hours prior, the victim and four co-workers had reported to the jobsite in the usual manner. After positioning themselves in different locations on and around the perimeter of the roof which had a 6:12 pitch (i.e., the roof rose 6 inches for every 12 feet in length), they proceeded to clear the accumulated snow prior to commencing the day's planned activities.

The victim had first constructed a man-made snow scraper made of 1" by 3" pine stock in a " T " formation and was then witnessed crawling through a second story window opening and across 16 inches of unguarded open space to gain access to the carpenter's bracket scaffolding where he was to begin the process of snow clearance. Shortly after beginning operations for the day, the victim, also acting as the foreman on this jobsite, was situated on the carpenters bracket scaffolding planks pulling snow from atop the roof with the hand-made scraper in preparation to apply underlying felt paper prior to application of finish roofing material. Once in position, the plan was to draw the snow he could reach towards him, while a man at the top of the roof would push unattainable snow down to him, to then be drawn off the roof with the man-made scraper. During this process, the victim was witnessed by a co-worker drawing snow off of the roof that was partially accumulating at his feet. This eyewitness described that the victim, in the course of this process appeared to slip/trip on the accumulated snow about his feet and fell 19 feet off of the carpenter's bracket scaffold planking, twisting in the air and striking the ground, rear of head and shoulders first. The eyewitness immediately yelled to a senior co-worker that the victim had fallen from the planking and to summon an ambulance. In addition to being summoned by the eyewitness, the senior co-worker claimed to have heard the impact from another side of the building. Leaving his position upon similarly constructed staging through a similar window opening and reaching the victim first, the senior employee found the victim lying face up, head toward the building, and breathing at the time, with blue coloring. The victim shortly thereafter ceased breathing at which time the senior co-worker administered CPR (his CPR certification had recently lapsed) and kept him warm until EMT assistance arrived approximately 30 minutes later (remote area and weather/road conditions hindered quicker response). The incident location was in a desolate and most rural portion of Massachusetts approximately 15 miles from the nearest trauma center. Narrow ice and snow encrusted roadways and emergency personnel unfamiliarity with the incident territory hindered quicker response. The victim arrived at the regional medical center 1 hour and 13 minutes later. The victim was officially pronounced dead 3 hours and 9 minutes following medical center arrival.

CAUSE OF DEATH

The Medical Examiner certified the cause of death as multiple injuries including cervical spine fracture. Laceration of liver was also listed.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Employers should implement current Standard(s) which require the inclusion of guardrailing systems (i.e., toprails, midrails, toeboards, endrails) when working on elevated platforms.

Discussion: Massachusetts Department of Labor and Industries Regulations and OSHA Standard 29 CFR 1926.451 require that guardrails, midrails, toeboards and endrails be installed on all open sides and ends of platforms more than ten feet above the ground or floor. Virtually all of the scaffolding in place at the time of the incident lacked such appropriate fall protection which would have proved instrumental in preventing this fatality.

Recommendation #2: Employers should implement current standard(s) which require the use of safety belts/harnesses, lifelines, and lanyards when working from elevations.

Discussion: Massachusetts Department of Labor and Industries Regulations and OSHA Standard 29 CFR 1926.451 (u)(3) requires that in the absence of standard and generally accepted guardrailing systems, the employer remains responsible for current in-place standard(s) that require the wearing of appropriate personal protective equipment in all operations where there is an exposure to hazardous conditions or where it is indicated that the need for using such equipment is necessary to reduce the hazard(s) to the employees. In the absence of such guardrailing, safety belts/harnesses and lanyards tied off to a secured point would have proved instrumental in the prevention of this incident.

Recommendation #3: Employers should consider and address worker safety in the planning phase of construction projects and on a daily basis, if necessary.

Discussion: Prior to project engagement and prior to each phase thereafter, the employer and/or project foreman should identify and review the potential hazards with the employees and discuss how to control the hazards and how the work can be performed safely. These discussions should include information on hazards in the immediate work area as well as information on the overall site that could create additional hazards for workers. When identified hazards inhibit or prohibit safe work practices, alternative work should be considered or operations halted until conditions warrant

continuance.

Recommendation #4: Employers should develop, implement, and enforce a comprehensive safety program that includes, but is not limited to, training in fall hazard recognition and the use of personal protective devices. Select and appoint a designated safety person.

Discussion: Employers should emphasize safety of employees by developing, implementing, and enforcing a comprehensive safety program that includes, but is not limited to training workers in the recognition and avoidance of fall hazards, along with training in the proper selection and use of personal protective equipment. A selected and designated safety person versed in required fall protection requirements may have proven most helpful in the prevention of this incident.

Recommendation #5: Employers should assure that emergency telephone numbers are conspicuously posted, that an immediate means of nearly instantaneous communication for medical assistance be present and that responsible certified personnel are present on jobsites to render first aid and CPR in emergency situations, if necessary.

Discussion: Employers should assure that emergency telephone numbers are conspicuously posted on each and every jobsite. Posting of such numbers (specific to each jobsite, as emergency numbers frequently change from area to area), helps to assure telephoning accuracy and saves valuable time during the course of extreme emergencies. Additionally, there should be an immediate means of communication on every jobsite (i.e., telephone, cellular telephone, two-way radio(s), etc., especially on remote jobsites in areas where there exists no immediate means of readily accessible communication. Finally, while this particular jobsite employed a person past certified in administration of CPR, certification was nonetheless lapsed. It remains imperative that jobsite personnel know the whereabouts of such telephone numbers, communications equipment, first aid equipment, and include persons knowledgeable and certified in rendering immediate medical aid.

REFERENCES

1. Office of the Federal Register: Code of Federal Regulations, Labor 29 Part 1926.451 (1990)

2. Commonwealth of Massachusetts, Massachusetts Department of Labor and Industries - Rules and Regulations for the Prevention of Accidents in Construction Operations - Code of Massachusetts Regulations, Labor 454 Parts 10.25 and 10.104