

TO: Director, National Institute for Occupational Safety and Health

FROM: California Fatality Assessment and Control Evaluation (FACE) Program

SUBJECT: A window washer falls approximately 60 feet off a swing stage scaffold when one of the electric hoists fails.

SUMMARY
California FACE Report #00CA003

A 32 year-old male window washer died when he fell approximately 60 feet from a swing stage scaffold when the center shaft of the electric hoist controlling the left side of the swing stage scaffold failed. The over speed secondary brake, an internal part of the hoist, also failed allowing the scaffold to drop to a vertical position. The decedent fell to the concrete parking lot below. He was wearing the appropriate fall protection harness, but the lanyard was not attached to the safety lifeline because it was still on the roof of the building. Another employee was also in the scaffold at the time of this incident. This employee was also wearing the appropriate fall protection harness, however he tied his lanyard off to the swing stage scaffold handrail prior to movement. The primary brake and the over speed secondary brake were dependent on the center shaft for proper operation. The hoist also comes equipped with an auxiliary slack rope brake system that locks the hoist to a second wire rope. This system was not used at the time of the incident. The owner also stated that his employees were authorized and properly trained to operate the hoist. There was no supervisor on site.

The CA/FACE investigator determined that, in order to prevent future occurrences, employers should, as part their Injury and Illness Prevention Program (IIPP):

- Ensure employees always attach the lanyard to the fall protection harness and the independent safety lifeline before operating a swing stage scaffold.
- Ensure all safety features of the hoist system are used as prescribed by the manufacturer when feasible.
- Ensure employees are supervised when using window washing equipment and safety gear.

INTRODUCTION

On March 29, 2000, at approximately 2:20 p.m., a 32 year-old male window washer died when he fell approximately 60 feet from a swing stage scaffold onto the pavement below. The center shaft of the electric hoist operating one side of the swing stage scaffold failed. The primary and secondary brake of the hoist also failed causing the swing stage scaffold to drop to a vertical position. The CA/FACE investigator learned of this incident on April 3, 2000 through the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) office in the area where the incident took place. On April 18, 2000, the CA/FACE investigator interviewed the owner of the company.

The employer of the decedent was a small window washing company that operated year-round and had been in business for 23 years. The decedent and one other employee were the only employees at the site on the day of the incident. There was no supervisor on site. The decedent had been employed with this company only nine months, but according to the company owner, had 12 years of previous window washing experience.

According to the owner, the company had a written Injury and Illness Prevention Program (IIPP) with the required elements, even though they had only six employees. A copy of their IIPP was not made available. According to the company owner, training for his employees was done mainly through on-the-job- training. The employer owned the hoist that failed in this incident.

INVESTIGATION

The site of the incident was a 12-story building with windows on all four sides. The north side of the building was landscaped with a parking lot. The building was equipped with permanent rooftop attachments to accommodate the scaffold rigging needs. The equipment being used was a swing stage, type-F, elevating scaffold. This scaffold measures approximately 20 feet long and 3 feet wide. It had a carrying capacity of approximately 2,000 pounds and was attached to the building by two 5/16" wire rope cables dropped from the roof. These cables were attached to electric hoists on each end of the scaffold, which raised and lowered the scaffold.

The electric hoist is a scaffold hoist with self-reeving and breech loading capability. It uses a single wrap traction sheave and traction rollers to lift the load. The hoist comes equipped with an emergency power cut-off, an over speed secondary brake, and an auxiliary slack rope brake which attaches to a second wire rope. Also secured to the roof were two safety lifelines that were dropped over the side of the building for the workers to attach to their fall protection devices.

After the window washing process was completed on a bank of windows, the scaffold was on the ground. The decedent and his co-worker decided to finish up for the day. Both employees proceeded to the roof of the building to transfer the scaffold over one bank and secure the safety lifelines on the roof. Upon returning to the ground level and re-evaluating the job, the decedent decided to finish washing the windows on this building because they only had one bank of windows left. According to the employer, the co-worker wanted to return to the roof of the building and drop the safety lifelines over the side but the decedent convinced him to finish the job with him. The co-worker got in the swing stage scaffold, but did tie off to the guardrail of the scaffold. The decedent and co-worker then proceeded to raise the scaffold to the top of the building. Approximately 60 feet from the ground the left hoist suddenly failed dropping the scaffold from a horizontal to vertical position. The decedent fell to the concrete parking lot

below. The co-worker, who tied off to the scaffold handrail, was able to climb onto the building balcony. He then released himself from his fall protection device and went into the building.

A security guard for the building called 911 after hearing the commotion and investigated its source. The paramedics arrived in less than five minutes, found the decedent without a pulse or spontaneous respirations, and pronounced death without medical intervention.

CAUSE OF DEATH

The cause of death, according to the death certificate, was multiple blunt force traumatic injuries.

RECOMMENDATIONS / DISCUSSION

Recommendation #1: Ensure employees always attach the lanyard to the fall protection harness and the independent safety lifeline before operating a swing stage scaffold.

Discussion: All too often a sense of false security overtakes employees of high-risk occupations when repetitive tasks occur. With 12 years experience as a window washer, the repetitive act of attaching the lanyard over and over again without any incident could have created a sense of false security within the decedent. Had the decedent taken the time to drop the lifelines and attach his lanyard, this incident still would have occurred, but he would be alive.

Recommendation #2: Ensure all safety features of the hoist systems are used as prescribed by the manufacturer when feasible.

Discussion: This particular electric hoist came equipped with an auxiliary slack rope brake system. This system locks the hoist to a second wire rope whenever the main suspension wire rope is slack. It would require the installation of a second wire rope to be used. This system was not used on the day of the incident. Had it been incorporated, this incident might have been prevented.

Recommendation #3: Ensure employees are supervised when using window washing equipment and safety gear.

Discussion: In this incident, there was no supervisor to stop the decedent when he began raising the scaffold without being properly tied off. Therefore, when the hoist failed, the decedent fell to his death. Safe work practices can be assured through supervision, as well as programs of training, recognition, and progressive discipline.

References:

California Code of Regulations, Vol. 9, Title I, Sections 3281, 3282, 3283, 3284, 3285, 3291, and 3293.

POCKET HOIST Operating Instructions Manual, June 22, 1993, Revision 0.16

Hank Cierpich
FACE Investigator

Robert Harrison, MD, MPH
FACE Project Officer

Laura Styles, MPH
Research Scientist

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FATALITY ASSESSMENT AND CONTROL EVALUATION PROGRAM

The California Department of Health Services, in cooperation with the California Public Health Institute, and the National Institute for Occupational Safety and Health (NIOSH), conducts investigations on work-related fatalities. The goal of this program, known as the California Fatality Assessment and Control Evaluation (CA/FACE), is to prevent fatal work injuries in the future. CA/FACE aims to achieve this goal by studying the work environment, the worker, the task the worker was performing, the tools the worker was using, the energy exchange resulting in fatal injury, and the role of management in controlling how these factors interact.

NIOSH funded state-based FACE programs include: Alaska, California, Iowa, Kentucky, Maryland, Massachusetts, Minnesota, Missouri, Nebraska, New Jersey, Ohio, Oklahoma, Texas, Washington, West Virginia and Wisconsin.

Additional information regarding the CA/FACE program is available from:

California FACE Program
California Department of Health Services
Occupational Health Branch
850 Marina Bay Parkway, Building P, Third Floor
Richmond, CA 94804