

TO: Director, National Institute for Occupational Safety and Health

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

SUBJECT: A crane operator is knocked off a truck bed and crushed by an unsecured 40-foot tower crane jib.

SUMMARY
California FACE Report #01CA006

A 45-year-old crane operator died when knocked off a truck bed by a tower crane jib that rolled off a truck bed and struck him. The victim was assisting another employee rig the loads for unloading as they were being delivered. The victim was going to be the tower crane operator once it was erected. A meeting was held right after lunch on the day of the incident instructing all truck drivers not to untie their loads before the rigging was complete. The driver of the truck involved in the incident was not at the meeting and wasn't aware of the change in procedure. The CA/FACE investigator determined that, in order to prevent future occurrences, employers, as part of their Injury and Illness Prevention Program (IIPP) should:

- Ensure that all affected employees and sub-contractors are aware of changes in procedures.
- Continuously evaluate safe work practices for effectiveness.

INTRODUCTION

On May 16, 2001, at approximately 3:30 p.m., a 45-year-old tower crane operator was killed when he was knocked off a truck bed by an unsecured crane jib that struck him. The CA/FACE investigator learned of this incident on May 21, 2001, through the Associated Press State and Local Wire. The victim's employer was contacted on May 31, 2001 and on August 8, 2001, the CA/FACE investigator traveled to the victim's place of employment and interviewed the company's safety manager. The company's safety policies, procedures, and records were reviewed. A copy of the police report was obtained with statements from involved parties.

The employer of the victim was a major crane company that has been in business for over 55 years and has in excess of 700 employees nationwide. The company had been at the incident site for 7 days and had 8 employees at the site on the day of the incident. The victim, a licensed tower crane operator working out of the union hall, had worked for the company off and on for many years and had been with them for approximately one year prior to this incident.

The company had a safety program and a written Injury and Illness Prevention Program (IIPP) with the required elements. There were written safe work procedures for most of the jobs. Safety meetings were held weekly and documented. Tailgate safety meetings were held daily and documented. The company provided training for the employees. The type of training made available included on-the-job-training (OJT), classroom, and video. The company required operator certification or licensing to operate the cranes. The company verified all their training requirements through the union. The crane operator was a qualified rigger.

INVESTIGATION

The site where the incident occurred was a commercial construction work area being prepared for the erection of a multi-story hotel. The general contractor hired a sub-contractor to handle all the steel movement at the construction site. The sub-contractor then hired the victim's employer to erect and operate the tower crane. The victim's employer then hired an independent trucking company to help deliver the tower crane and jib sections along with their own trucks. On the day of the incident, the victim was assigned to the work site as a tower crane operator. While waiting for the tower crane and jib to be delivered and erected at the job, the victim was assisting another employee unload the jib sections by rigging them to a crane hook. The victim was a qualified rigger.

When the trucks were ready to be unloaded, the drivers parked their trucks in the designated area, and then removed the straps holding the jib sections in place on the truck bed. The victim and another employee would then climb onto the truck bed and fasten the rigging that was connected to a crane hook, to a jib section. The crane would then lift the jib sections off the truck bed. Each truck carried two pieces of the jib, each measuring 40 feet long and weighing approximately 1800 pounds.

The site safety manager for the general contractor was at the site when this operation was taking place and noticed the jibs were unstable after the tie-down straps were removed and prior to being attached to the rigging. After lunch, a meeting was held for all the truck drivers and they were instructed not to unfasten all the straps holding the jibs before the rigging was attached. One independent truck driver was unaware of the meeting and what was discussed at that meeting. When it came time for him to unload his truck, he parked it in the designated area and then removed the tie-down straps securing the jib sections. The independent driver stated that while waiting for his truck to be unloaded, he watched the victim and the other employee unload three trailers before his and it looked like they knew what they were doing. After he unhooked all the straps holding the jibs in place, the independent truck driver stood approximately 20 feet away from the trailer, and was looking away while he talked on his cellular phone.

The victim and the other employee got on the truck bed with the jibs unsecured. The other employee stated that he did not notice that all the straps had been removed before they climbed onto the truck and onto the jib. He stated that this was the fifth truck they unloaded that day. The crane lowered the hook with the rigging attached. Instead of waiting for the rigging to reach them, the victim and the other employee climbed onto the jib sections in an attempt to reach the slings. This action caused the jib sections to move. The jib section then rolled off the truck knocking both the other employee and victim to the ground. The jib then rolled on top of the victim. The other employee was knocked clear of the falling jib. The general contractor's safety representative was about 50 feet away from the truck when the incident occurred. 911

was immediately called. The paramedics immediately checked the victim for spontaneous pulse and respirations and found neither. The paramedics pronounced the victim dead at the scene.

CAUSE OF DEATH

The cause of death, according to the death certificate, was blunt head trauma.

RECOMMENDATIONS / DISCUSSION

Recommendation #1: Ensure that all affected employees and sub-contractors are aware of changes in procedures.

Discussion: It is imperative that when a change is made in a standing safety procedure, all affected parties are informed of the change. The general contractor informed the sub-contractor of the change in safety procedure and ordered a meeting to inform all drivers. The sub-contractor notified all their drivers but failed to inform the independent trucker involved in the incident of the change. The line of communication must extend to all sub-contractors as well as those employed by the general contractor in order to be effective. The use of a sign-in sheet might have helped them realize that all the drivers weren't informed, and then they could have taken the necessary action to ensure all were informed.

Recommendation #2: Continuously evaluate safe work practices for effectiveness.

Discussion: The employer had been using the same method of unloading cranes for many years without incident. They had not identified any hazard associated with that method because no incident had ever occurred to call for an evaluation. Work practices that have been used without incident are not necessarily safe. Identification of hazardous practices requires continual review and analysis of safe work practice effectiveness. Had the standard rigging practice that had been in place over the years been periodically reviewed and analyzed for effectiveness, this incident might have been prevented.

References:

California Code of Regulations, Vol. 9, Title 8, Subchapter 4, Article 10, Sections 1590(c)(2), 1592(a), 1593(a), (d).

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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, Massachusetts, Minnesota, Missouri, Nebraska, New Jersey, New York, Ohio, Oklahoma, Texas, Washington, West Virginia, and Wisconsin.

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

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