

A fitter working for a steel building manufacturer in Texas, died when a 7,800 pound rafter fell on him.

Investigation: #98TX25401

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SUMMARY:

On May 21, 1998, a 32-year-old fitter for a steel building manufacturer died when a 7,800 lb. rafter fell onto him. The victim was using a floor-operated overhead crane with a grabber device attached to a hook to move the steel rafter to a fitter station. He placed the rafter, which was 49 feet in length, in a vertical position on two 2 by 6 steel metal beams as two spotters looked on. The victim released the grabber and tossed it over the rafter. As the grabber was being raised, it caught the top plate of the rafter and tipped it towards him. The victim attempted to get out of the way but the rafter pinned him against a metal stand. The victim was transported to the local hospital where he was pronounced dead.

The TX FACE investigator concluded that to reduce the likelihood of similar occurrences, employers should:

** fabricate a stand for the rafter that could move from work station to work station.*

** perform job safety analysis (JSA) for supervisors to use as guidelines for completing a task and for training workers.*

INTRODUCTION

On May 21, 1998, a 32-year-old fitter (the victim) died when 7,800 lb. rafter fell onto him. The TX FACE program officer was made aware of the fatality by the Area OSHA office. On August 19, 1998, the TX FACE program officer visited the job site and met with the operations manager and the victim's supervisor. Pictures were taken of the grabber. A police department report and the OSHA report were obtained. The justice of the peace was contacted, but no autopsy report was prepared.

The employer was a steel building manufacturer that employs approximately 200 employees, four of whom were in the same occupation as the victim. The company has been in business for 30 years. There were approximately 30 employees in the building at the time of the incident. Two employees were at the scene acting as spotters when the incident occurred.

The employer's safety program is managed by a designated safety director. A written safety program was in place, though the safety procedures specific to the victim's task were not addressed in that program. Safety meetings were conducted on a monthly basis. New hire training and task specific training was also conducted. Training was conducted at the job site and in the classroom. Employees were required to demonstrate proficiency in specific tasks.

The victim had been employed for 4 years and 5 months. He had 5 years of experience as a fitter and had been trained in the task he was performing.

The employer conducts pre-employment physicals and drug screening in hiring new workers. This is the first fatality the company has experienced.

INVESTIGATION

At the time of the incident, the victim was operating an overhead crane to move a rafter from one work station to another. The rafter, which was 49 feet long and 6 feet high and weighed 7,800 lbs., had been stored in a flat position in a storage area prior to the incident. A steel plate, 10 inches wide, ran across the top and bottom of the rafter.

Work was conducted in a large (open bay) building. There were several different processes to constructing a rafter. The different processes were conducted at different work stations, similar to an assembly line. Therefore, procedures were developed by the employer to move the rafter from one work station to another.

On previous occasions, the victim would move a rafter to the fitter station and place it on two metal beams. Another rafter would then be placed next to it. Angle iron was used to connect the two together to prevent them from falling over while work was being performed. Once they were secured in place the victim would tack weld purlin clips and connection plates to the rafter.

On the day of the incident, the victim used a floor-controlled overhead crane, with a device called a grabber, attached to the crane's hook, to pick up and move rafters from their storage location to the fitter station. Two other workers served as spotters. When the victim positioned the rafter at the fitter station, he set it down in a vertical position on two 2 by 6 metal beams. He then lowered the grabber to release it from the rafter. He threw the grabber to the other side of the rafter and started to raise it out of the way. Due to the height of the rafter, he did not see the grabber as it caught the top plate of the rafter. This caused the rafter to be tipped towards him. The victim tried to flee, but was struck by the rafter and pinned against a metal stand.

An officer from the local police department arrived on the scene at 8:01 a.m. He stated the victim was not breathing and did not have a pulse. The victim was transported to the local hospital where he was pronounced dead.

CAUSE OF DEATH

A doctor determined the cause of death was from crush injury to head and neck and closed trauma to head.

RECOMMENDATIONS/DISCUSSION

Recommendation #1 - Employers should fabricate a stand for the rafter that could move from work station to work station.

Discussion: When the rafter is in a vertical position it is unstable and can easily fall over. Placing the rafter in a stand when in a vertical position would eliminate this hazard. In addition, putting attachment points on the stand where hoist chains or hoist rope can be connected would enable the stand to stay connected to the rafter as it is moved from work station to work station. The two pieces would form a stable unit and should stay as a unit through the remainder of the manufacturing process. The two pieces would be separated when the rafter is shipped or stored in horizontal position.

Recommendation #2: Employers should perform job safely analysis (JSA) for supervisors to use as guidelines for completing a task and for training workers.

Discussion: A JSA forces those conducting the analysis to view each operation as part of a system. In so doing, each step in the operation is assessed while consideration is paid to the relationship between steps and the interaction between workers and equipment, materials, the environment, and other workers. Other benefits include identifying hazardous conditions and potential accidents, providing information with which effective control measures can be established, determining the level of knowledge and skill as well as the physical requirements that workers need to execute specific tasks, and discovering and eliminating unsafe procedures, techniques, motions, positions and actions. A JSA can help shape decisions correctly and lead to fulfillment of the desired objectives.