Fall--Insp # 1516301 Gray's Framing, LLC

A **36 year old male** employee fell approximately 55' through the roof to the 3rd floor decking of the building. This contractor was hired to remove rotted wood beams, columns, joists, and decking at an existing 7 story cold-storage building which was being remodeled into an apartment complex.

The work crew, consisting of a supervisor and three carpenters, used a Sherpa winch mounted on the roof along the east edge of the hoist area opening in the roof. The winch is an automotive style winch with a 25,000 lbs. capacity and powered by 12 volts direct current (VDC). The winch was equipped with a remote hand control that allowed for operating of the winch from a remote location.

The winch was used as a hoist to lower rotted wood structural members from where they were removed from the building's structure, down to the ground level. They also used the winch as a hoist to raise new wood structural members from the ground level up to where they will be installed in the building's structure.

The winch was mounted on a shop-made 'T'-shaped base made of 4-inch by 4-inch by 3/8-inch thick steel square tubing, approximately 123 inches long. The crosspiece of the 'T' was fabricated with four sections of 3 ½-inch by 3 ½-inch by 1.4-inch thick angle stock (two short sections and two long sections). The angle stock was welded together to form a rectangle approximately 54 ½ inches long by approximately eight inches wide. Additional holes were drilled in the angle stock for mounting the base to the roof beams.

On the day of the incident, the work crew had rigged for lifting a wood column section (approximately 17- inch by 17-inch by 16-foot long, weighing approximately 1,500 lbs.). The crew used a synthetic sling to lift the column section with the Sherpa Winch. The column section was going to be lifted to the 5th floor for installation. The supervisor, using the remote hand control, started lifting the column section. The work crew was located on the basement level of the building. Soon after starting the lift, according to the supervisor, the winch exhibited difficulty lifting the column section, and, ultimately, stopped lifting the column section. The supervisor lowered the column section down to the basement level. After disconnecting the winch from the column section, the crew was directed to go to the roof. The supervisor wanted to move the Sherpa Winch and 'T'-shaped base from the hoist area opening to the west section of the roof to repair or replace the winch.

On the roof, the crew were each wearing their personal fall arrest system (PFAS) full body harnesses and lanyards, but no one was tied off to an anchor. The crew walked on the plywood walkway to the hoist area opening in the roof where the Sherpa Winch was located. Sheets of plywood were laid on the existing wood roof decking and followed a path of existing sound wooden beams that supported the existing wood roof decking.

The supervisor and two of the carpenters (including the victim) pulled the winch and 'T'-shaped base a few feet away from the hoist area opening. The third carpenter joined the rest of the work crew and they started moving the winch and 'T'-shaped base towards the west section of the roof.

The crew each grabbed the 'T'-shaped base and started maneuvering the winch and base from the hoist area opening towards the west section of the roof. They stayed on the plywood walkway. At a point where the crew was approximately 20-25 feet away from the hoist area opening, the victim fell through the roof, and landed on the 3rd floor decking approximately 55 feet below. The victim fell through a section of rotted roof decking.

Citation(s) as Originally Issued

A complete inspection was conducted at the accident scene. Some of the items cited may not directly relate to the fatality.

Citation 1 Item 1 **Type of Violation: Serious** **$800**

TCA 50-3-105(1) The employer did not furnish employment and a place of employment which were free from recognizable hazards that were causing or likely to cause death or serious physical harm to the employees.

In that, employees were exposed to struck by or crush by hazards when using the Sherpa Winch to raise and lower wood structural components to and from the building's structure in the following instances:

a. The work crew (a supervisor and three carpenters) used the Sherpa Winch as a hoist to lower damaged wood structural components from their locations of the building's structure and lift replacement wood structural components into place in the building's structure, conti·a1y to the She1pa 4x4 Winch Owner's Manual, page 5, that specifically states: "NEVER us the winch in hoist applications."

b. The sheave mounted in the 'T'-shaped base for the She1pa Winch had numerous scratches and small gouges in the sheave groove surface of the 6-inch O.D. by 3-inch wide sheave.

Citation 1 Item 2 **Type of Violation: Serious** **$4,000**

29 CFR 1926.50l(b)(l5): Employees walking/working on a surface 6 feet (1.8m) or more above lower levels that are not addressed in 1926.500(a)(2) or in 50l(b)(l) through (b)(l4) were not protected from falling by a guardrail system, safety net system, or a personal fall arrest system:

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In that while on the roof moving a winch, the work crew, consisting of a supervisor and three carpenters, was not utilizing fall protection. One employee was fatally injured when he fell through the roof approximately 55 feet. The employee was wearing a personal fall arrest system (PFAS) full body harness and lanyard but was not tied off to an anchor point.

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