

Case 78. 44-year-old laborer was killed when the scaffold platform he was working from fell, and the 183-pound hoist motor he had been using to raise and lower a corner of the platform fell on him.

On Friday, August 27, 2004, a 44-year-old laborer was killed when the scaffold platform he was working from fell, and the 183-pound hoist motor he had been using to raise and lower a corner of the platform fell on him. Four workers were standing at the four corners of a Beeche (40-foot by 32-foot) scaffold platform lowering it to the ground from under a bridge where they had been working. Each worker controlled a separate motor. Each of the cables was fed through an electric (cable climbing-type) hoist motor that was attached by chains and shackles to the platform. The upper ends of the cables supporting the platform, from the bridge, were attached to u-shaped 3-inch angle-iron brackets that were hooked over the bridge abutment, two on either side of the bridge. One 8-inch wide bracket fit the abutment snugly. The other three brackets were 13-inches wide at the top and rested on the abutment at an angle. These brackets were shop-built and lacked required design, testing, or certification for their ability to safely support the intended loads.

The workers, standing on the platform, were releasing the platform from where it had been attached with hooks to beams under the bridge. They were wearing body harnesses but none were tied off. They were attempting to let the platform down by simultaneously operating the four separate hoist motors. The actual lowering procedure was not synchronized between the men. This uneven release caused the platform to tilt toward the decedent's corner. The inner braces of all four angle-iron brackets hooked over the bridge abutment spread open causing the platform to fall. The order in which the brackets failed is not known. In addition, holes through which the cables were secured on two of the brackets were torn open. The four workers on the platform fell approximately 20 feet to the ground. Three workers survived the fall, but the hoist motor the decedent was controlling to lower his corner of the platform fell onto him causing him to be crushed to death.

MIOSHA issued the following Serious and Other citations to the employer.

Serious:

GENERAL RULES, PART, 1, RULE 114(1)

An employer shall develop, maintain, and coordinate with employees an accident prevention program, a copy of which shall be available at the worksite.

A safety program was not maintained.

- Employer has no oversight mechanism in place to determine if changes in the work operation to correct alleged violations of MIOSHA Construction Safety & Health Standards, that were brought to their attention are properly implemented and/or effective.
- Safety coordinator failed to develop procedures for suspended scaffold equipment. Such a procedure when reduced to writing can be used by employer representatives, during training, installation, use, and dismantling of

the suspended scaffold equipment to ensure employee safety on/below/above the scaffold, would/could use the equipment manuals (as a basis) and ensure information is properly disseminated to employees.

- Fall protection portion of the company's safety program permits 6-inch deflection in 42-inch high perimeter cables. Under MIOSHA Standards, the maximum deflection is 3-inches for a 42-inch high cable (ref. Part 26 – perimeter safety cables shall meet the criteria for guardrail systems in 29 C.F.R. 1926.502, which is adopted by reference in R408.44502 of Construction Safety Standard Part 45. "Fall Protection" which is referenced in R408.42602. (See Appendix G, as referenced in R408.42602(1))
- The company's safety program does not include multi-point suspended scaffolds or adjustable multi-point suspension scaffolds, which are being used for the current work operations.
- Employees are permitted to access scaffolding from a boom-supported elevating aerial work platform, a manner not approved ob in the company safety program.

Employees are doing media blasting and repainting of highway approaches to and the bridging over a river. Vehicular traffic passes under/next to portions of the scaffolding on site. Four employees on a suspended scaffold received injuries when the scaffold fell 20 feet to the ground during dismantling/lowering.

Serious:

SCAFFOLDS AND SCAFFOLD PLATFORMS, PART 12, RULE
R408.41209(2)

An employer shall have each employee who is involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting a scaffold trained by a competent person to recognize any hazards associated with the work in question. The training shall include the following topics, as applicable.

- (a) The nature of scaffold hazards.
- (b) The correct procedures for erecting, disassembling, moving, operating, repairing, inspecting, and maintaining the type of scaffold being used.
- (c) The design criteria, maximum intended load-carrying capacity, and intended use of the scaffold.
- (d) Any other pertinent requirements.

Employees are not trained to recognize the hazards associated with dismantling a suspended scaffold work platform. Such training would include, but not be limited to:

- Not permitting employees on a scaffold that is suspended by material hoists.
- When and how to properly access a scaffold platform.
- How to properly access a scaffold platform.
- Barricading the area below the platform.

- Developing/implementing a procedure for using hoist motors for rising/lowering Beeche scaffold work platforms, rescue procedure to be used in the event of a problem.
- Knowing with “Operating Manual” to follow (the one for “Scaffolding Hoist” or “Materials Handling”).
- Knowing that the materials handling hoist are not intended for man riding.
- Information on coordination of employees operating the controls in a uniform manner. (Maintaining the platform surface in as level a condition as possible so that rigging supporting the scaffold assembly isn’t overloaded.
- Inspection of a scaffold hoist equipment to ensure that it is compatible with the usage.

The documented training that employees have received is for tubular welded frame scaffolding and mobile scaffolding.

Serious:

SCAFFOLDS AND SCAFFOLD PLATFORMS, PART 12, RULE R408.41210(2)

A scaffold shall not be erected, moved, dismantled, or altered, except under the supervision of a competent person.

Actions taken by employee, for erection of dismantling of suspended scaffold work platforms are not consistent with those of a competent person.

- Employee does not know if mixtures of different scaffolding components for large area scaffolding are compatible, do not constitute an overload of manufactured scaffolding components or job built components.
- Employee questions the use of inferior components at one job site and does not permit their use. Same employee permits the use of similar inferior components at accident site.
- Employee responsible for design of horizontal lifeline is unaware of cable clip manufacturer requirement for proper torque of clips.

Serious:

SCAFFOLDS AND SCAFFOLD PLATFORMS, PART 12, RULE R408.41210(5)

A scaffold shall not be loaded to more than the designed working load.

There is no design on site for:

- A wooden scaffold constructed with plywood and 2-inch thick by 4-inch wide by 10-foot (nominal) lumber.
- A wooden scaffold constructed with manufactured aluminum picks, plywood and wooden planking.
- A Beeche scaffold platform 40-foot long by 32-foot wide, with related hoisting/lowering rigging that include:
 - Motor #3 used at corner #1 is rated for 6, 000 lbs. The blocstop fall arrest device used on this motor is rated for 4,400 lbs.

- Motor #4 used at corner #2 is rated for 6, 000 lbs. The blocstop fall arrest device used on this motor is rated for 4,400 lbs.
- Motor #1 used at corner #3 is rated for 6, 000 lbs. The blocstop fall arrest device used on this motor is rated for 4,400 lbs.
- Motor #2 used at corner #4 is rated for 6, 000 lbs. The blocstop fall arrest device used on this motor is rated for 4,400 lbs.

Four employees are working on/lowering a scaffold on which there is assorted material including laminated scaffold planking, media blasting equipment, plywood, and brackets used for hanging the scaffold platform off the structural steel beams. Hoist motors used for lowering scaffold on which employee are standing are not approved for hoisting occupied scaffolds.

Serious:

SCAFFOLDS AND SCAFFOLD PLATFORMS, PART 12, RULE
R408.41213(6)

An employer shall have a competent person determine the feasibility and safety of providing fall protection for employees erecting or dismantling supported scaffolds. An employer is required to provide fall protection for employees erecting or dismantling supported scaffolds where the installation and use of the protection is feasible and does not create a greater hazard.

Employees are permitted to work, unprotected from falling approximately 20 feet on a suspended scaffold platform.

Serious:

SCAFFOLDS AND SCAFFOLD PLATFORMS, PART 12, RULE
R408.41214(1)

A hoisting machine shall carry a label of an approved nationally recognized testing laboratory which states that the machine is approved for use on a suspension scaffold, swinging scaffold, or powered mobile elevating platform.

The electrically powered endless hoist motors intended for materials handling do not possess label which states its approval for scaffold use. Material hoist motors are being used to lower a Beeche scaffold that has 4 employees on it. Only the hoists that are intended by the manufacturer for scaffolding use have an Underwriter's Laboratories decal or are indicated, by as "P" model.

Serious:

SCAFFOLDS AND SCAFFOLD PLATFORMS, PART 12, RULE
R408.41229(5)

Before a scaffold is used, a competent person shall evaluate direct connections. The person shall confirm that the support surfaces are capable of supporting the loads to be imposed. In addition, an engineer who is experienced in multipoint adjustable suspension scaffold design shall design the multipoint adjustable suspension scaffold connections.

No determination has been made by the employer that:

- The concrete barriers are capable of supporting the scaffolding and related rigging. Such a determination would include the condition of the concrete and the point loading effect the rigging has on it.
- There is no engineered design for suspension scaffold support devices used for the bridges. The support devices constructed of both 3-inch by 3-inch by 1/4 -inch angle iron and 3-inch by 3/16-inch angle iron.
 - Barrier bracket used for Corner #1 is made from 3-inch wide by 3-inch wide by 1/4-inch thick angle iron that is constructed in a “U-shape.” The hole for the rigging shackle is 1-inch diameter and appears punched/drilled.
 - Barrier bracket used for Corner #2 is made from 3-inch wide by 3-inch wide by 3/16-inch thick angle iron that is constructed in a “U-shape.” The hole for the rigging shackle is 1-inch diameter (approximate) and appears an irregular torch cut.
 - Barrier bracket used for Corner #3 is made from 3-inch wide by 3-inch wide by 3/16-inch thick angle iron that is constructed in a “U-shape.” The hole for the rigging shackle is 1-inch diameter (approximate) and appears an irregular torch cut.
 - Barrier bracket used for Corner #2 is made from 3-inch wide by 3-inch wide by 3/16-inch thick angle iron that is constructed in a “U-shape.” The hole for the rigging shackle is 1-inch diameter (approximate) and appears an irregular torch cut.

Serious:

SCAFFOLDS AND SCAFFOLD PLATFORMS, PART 12, RULE
R408.41229(16)

A suspension scaffold support device, such as a cornice hook, roof hook, roof iron, parapet clamp, or similar device shall be in compliance with the following provisions, as applicable:

- (a) Be made of steel, wrought iron, or materials of equivalent strength
- (b) Be supported by bearing blocks.
- (c) Either be secured against movement by tiebacks installed at right angles to the face of the building or structure or have opposing angle tiebacks installed and secured to a structurally sound point of anchorage on the building or structure. Sound points of anchorage include structural members, but do not include any of the following items:
 - Standpipes
 - Vents
 - Other piping systems
 - Electrical conduit
- (d) Tiebacks shall be equivalent in strength to the hoisting rope.

Four suspension scaffold support brackets are not supported by bearing blocks or are secured against movement.

Serious:

AERIAL WORK PLATFORMS, PART 32, RULE 3209(14)

An employer shall not allow employees to exit an elevated aerial work platform, except where elevated work areas are inaccessible or hazardous to reach.

Employees may exit the platform with the knowledge and consent of the employer. When exiting to unguarded work areas, fall protection shall be provided and used as required in Construction Safety Standard, Part 6, Personal Protective Equipment, being R408.40631 of the Michigan Administrative Code.

Employees are permitted to exit a boom-supported elevating work platform to an unprotected 20-foot high scaffold.

Other:

MOBILE EQUIPMENT, PART 13, RULE 1301 REF OSHA
1926.602(d)(i);1910.178(l)

The employer shall ensure that each powered industrial truck operator is competent to operate a powered industrial truck safely, as demonstrated by the successful completion of the training and evaluation specified in this paragraph.

Untrained employee was allowed to operate a rough-terrain forklift truck for the purpose of moving material on site. Employer has no certification of any rough-terrain forklift truck training for the employee. The employee was not in the process of being trained.

The company issued a permit to an employee who did not satisfactorily:

- “back out slowly/look behind”
- “look before backing”
- “Position load on rack”
- “Horn sounded”

Other:

AERIAL WORK PLATFORMS, PART 32, RULE 3207(1)

An employer shall provide the operator of an aerial work platform with an aerial work platform permit.

Employer failed to train and issue permits indicating the training to employees operating boom supported elevating work platforms for scaffold erection/dismantling.