

Materials or Equipment Suspended and Attached to an Anchor Point: Swinging Object Struck-by Hazards

Besides cranes, workers can also be struck by the swinging arm of a piece of equipment.

Protect workers by:

- Ensuring workers are properly trained and licensed/certified, if appropriate.
- Before any work begins, discussing how the operator and signal person will communicate, including a back-up plan if communication is lost, and an emergency stop procedure.
- Making sure all personnel are positioned clear of the swing radius of the machine arms.
- Setting up barricades and posting warning signs where work is being performed.
- Regularly inspecting and maintaining heavy equipment.
- Requiring the use of personal protective equipment, such as hard hats and high-visibility clothing.

Planning Resources

- [Job Hazard Analysis](#)
- [Building Information Modeling \(BIM\) for Safety Planning](#)
- [CPWR's Head Protection Webpage](#)
- [OSHA Competent Person Resources](#)
- [Construction Equipment Visibility](#)
- [Artificial Intelligence Collision Avoidance System](#)
- [Object Detection and Camera System for Heavy Equipment](#)
- What's the Risk? Best Practices to Reduce the Likelihood of Struck-By Injuries From Heavy Equipment and Crane Activities: [Play Recording](#); [PDF of Slides](#)

Training Resources

- Toolbox Talks:
 - Head Protection ([English](#), [Spanish](#))
- Hazard Alert Cards:
 - Preventing Head Injuries ([English](#), [Spanish](#))
- Posters/Infographics:
 - Head Protection (English [PDF](#) & [JPEG](#))
 - In 1 Strike You Could Be Out (English [PDF](#) & [JPEG](#))
- Webinars:
 - What's the Risk? Best Practices to Reduce the Likelihood of Struck-By Injuries From Heavy Equipment and Crane Activities: [Play Recording](#); [PDF of Slides](#)

Relevant Standards

- OSHA Standard 29 CFR - <https://www.osha.gov/laws-regs/regulations/standardnumber/1926>
 - [1926 Subpart C - General Safety and Health Provisions](#)
 - [1926.20 - General safety and health provisions.](#)
 - [1926.21 - Safety training and education.](#)
 - [1926.22 - Recording and reporting of injuries.](#)
 - [1926.23 - First aid and medical attention.](#)
 - [1926.25 - Housekeeping.](#)
 - [1926.26 - Illumination.](#)
 - [1926.28 - Personal protective equipment.](#)

- [1926.29 - Acceptable certifications.](#)
 - [1926 Subpart E - Personal Protective and Life Saving Equipment](#)
 - [1926.95 - Criteria for personal protective equipment.](#)
 - [1926.96 - Occupational foot protection.](#)
 - [1926.100 - Head protection.](#)
 - [1926.102 - Eye and face protection.](#)
 - [1926 Subpart G - Signs, Signals, and Barricades](#)
 - [1926.200 - Accident prevention signs and tags.](#)
 - [1926.201 - Signaling.](#)
 - [1926 Subpart H - Materials Handling, Storage, Use, and Disposal](#)
 - [1926.251 - Rigging equipment for material handling.](#)
 - [1926 Subpart N - Helicopters, Hoists, Elevators, and Conveyors](#)
 - [1926.551 - Helicopters.](#)
 - [1926.552 - Material hoists, personnel hoists, and elevators.](#)
 - [1926.553 - Base-mounted drum hoists.](#)
 - [1926.554 - Overhead hoists.](#)
 - [1926 Subpart O - Motor Vehicles, Mechanized Equipment, and Marine Operations](#)
 - [1926.600 - Equipment.](#)
 - [1926.601 - Motor vehicles.](#)
 - [1926.602 - Material handling equipment.](#)
 - [1926.603 - Pile driving equipment.](#)
 - [1926.604 - Site clearing.](#)
 - [1926 Subpart R - Steel Erection](#)
 - [1926.752 - Site layout, site-specific erection plan and construction sequence.](#)
 - [1926.753 - Hoisting and rigging.](#)
 - [1926.754 - Structural steel assembly.](#)
 - [1926.757 - Open web steel joists.](#)
 - [1926.758 - Systems-engineered metal buildings.](#)
 - [1926.761 - Training.](#)
- American National Standards Institute (ANSI):
 - [ANSI/ American Society of Safety Professionals \(ASSP\) A10.5-2020: Safety Requirements for Material Hoists](#)
 - [ANSI/ASSP A10.42 – 2000 \(R2017\): Safety Requirements for Rigging Qualifications and Responsibilities](#)
 - [ANSI/International Safety Equipment Association \(ISEA\) Z89.1-2014 \(R2019\) – Head Protection](#)

Nudges to Improve Planning

- Job Site Posters: *see Training Resources above*
- Text Messages

Target Audience	Texts: General	Texts: Specific
Supervisors and Workers	<ul style="list-style-type: none"> ● Planning prevents struck-by incidents: Plan BEFORE working with heavy equipment to prevent being struck by the machines' swinging arms. 	<ul style="list-style-type: none"> ● Plan to prevent struck-by incidents from heavy equipment by discussing how the operator and signal person will communicate, establishing a swing radius and making sure workers stay clear of it, setting up barricades, and posting warning signs.

- Email Messages

Example:

Dear [],

Safety is everyone's responsibility – especially those who supervise others. If your employees are working near heavy equipment, remember that serious injuries can occur if the machine arm swings and strikes someone. Create a plan before work begins using CPWR's Struck-by Planning Program and communicate it with your workers to prevent struck-by incidents. As part of your plan, you should:

- Ensure workers are properly trained and licensed/certified, if appropriate.
- Before any work begins, discuss how the operator and signal person will communicate, including a back-up plan if communication is lost, and an emergency stop procedure.
- Make sure all personnel are positioned clear of the swing radius of the machine arms.
- Set up barricades and post warning signs where work is being performed.
- Regularly inspect and maintain heavy equipment.
- Require the use of personal protective equipment, such as hard hats and high-visibility clothing.

Please reach out if you have any safety concerns or questions. Stay safe!

[Name]

- Stickers



CPWR has a simple "Sphere of Safety" hardhat sticker design that can be downloaded and printed. We also have limited supplies available for free, which can be ordered by contacting Grace Barlet at gbarlet@cpwr.com.

[Download Sphere of Safety sticker artwork](#)