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Risks rise with overhead work

Whether you are below it or actually doing it, overhead work presents a variety of safety hazards.

There is a real risk of equipment, materials or tools falling from elevation. The term "drop zone" is often used to describe the area beneath cranes, scaffolds, ladders, platforms or other locations where overhead work is being performed. Anyone in that zone also can face danger from flying objects or spills, and when power tools or activities such as pushing, pulling, or prying might cause items to become airborne. Injuries can range from minor abrasions to concussions, burns, blindness, or death.

Managing the drop zone is key to preventing this from happening. Any object dropped from a height creates a significant amount of force. The higher the aerial work being performed, the more force the dropped object will generate.

Here are some suggestions for successful drop zone management:

- Establish a clearly identified zone below the elevated position. This should be discussed during the pre-job briefing and warning signs placed where appropriate.
- Keep the zone clear of personnel while work is occurring overhead.
- If there is an unavoidable need for someone to enter the zone, stop overhead activities and ensure all equipment and material is secured.
- Use firm controls any time tools or materials are being moved from the ground or bucket. Tool bags and hand lines are the only way to ensure these items will arrive safely where they are needed.
- Tool lanyards, a leash from tool to wrist or other secured location can easily be adapted for aerial work.

- Forbid the throwing of tools and any other objects from one person or level to another.
- Stack materials to prevent sliding, falling, or collapse.
- Use protective measures such as toeboards, guardrails and debris nets.
- Maintain good verbal and visual communication with those aloft to ensure crew members below are clear of potential injury threats.

Although the drop zone area often is described as an inverted cone (wide at the bottom) beneath the work area, don't hesitate to consider expanding it. There are circumstances under which a falling object can be deflected and land outside the perceived drop zone. The distance the object could travel can be greatly underestimated and result in very serious injuries.

Hard hats, fall arrest gear and other appropriate personal protective equipment should be worn in any area where overhead work is being performed.

Workers are safer when they are not working directly beneath machinery that is moving objects. Crane and hoist operations can be particularly dangerous.

Proper training is essential for those performing these operations.

Cranes and hoists must be inspected routinely to ensure that all components of the system, such as wire rope, lifting hooks and chains are in good condition.

Proper material handling equipment must always be attached to a crane or hoist hook to lift the load safely.

The lifting capacity of cranes and hoists must never be exceeded.

Overhead storage areas, whether temporary or permanent, also can be risky. If shelves or racks are used, they should be checked for defects so they will not collapse and cause their contents to fall. Heavy and bulky objects should be stored close to the floor; lighter and smaller objects higher. Watch for vibrating equipment in the area that may cause objects to fall from storage containers.

Ergonomics is an important factor to consider by those doing overhead work. Some jobs require reaching up with one or both arms raised. Whether one is drilling, driving fasteners, or finishing drywall, overhead work puts stress on shoulders and neck. Eventually it may lead to serious muscle and joint injuries.

Solutions are available that can reduce the level of stress, as well as how often and how long the body is subjected to this stress.

These include changing work processes, materials or equipment (tool extensions, for example) and limiting the amount of time overhead work is done without a break.

The type of task and the site conditions will determine which solutions are best for you.

The material contained in this document has been prepared from sources believed to be accurate and reliable. Application of this information to a specific worksite should be reviewed by a safety professional. Anyone making use of the information set forth herein does so at their own risk and assumes any and all liability arising therefrom. Specific medical advice should be obtained through consultation with a physician or other trained health care practitioner.

The Quiz

These questions are meant to help you remember what was discussed today — not to test your patience or challenge your intelligence. The answers are at the bottom of the page. Cover them up, and complete the quiz as quickly as you can.

1. Falling objects are the only serious hazards associated with overhead work.
   TRUE ____ FALSE ____

2. Does a dropped object generate more force the farther it falls?
   YES ____ NO ____

3. Which of these are among ways to manage a 'drop zone':
   A. Keep people out of the zone while overhead work is being performed.
   B. Use tool bags and hand lines to move items between levels.
   C. Use toeboards, guardrails and debris nets.
   D. Maintain good verbal and visual communication between work levels.
   E. All of the above

4. The distance a dropped object can travel if deflected is often underestimated.
   TRUE ____ FALSE ____

5. Which of these is NOT a good safety precaution when using cranes or hoists:
   A. Proper training for operators.
   B. Occasional inspection of crane or hoist components.
   C. Attaching the correct materials handling equipment to cranes and hoists.
   D. Never exceeding lift capacity.

6. Heavy and bulky items should be kept close to the floor when stored overhead.
   TRUE ____ FALSE ____

7. Which of these is an important factor to consider by those engaged in overhead work:
   A. Economics.
   B. Ergonomics.
   C. Ecology.
   D. Psychology.

8. Does your workplace have written safety procedures for conducting overhead work?
   YES ____ NO ____ DON'T KNOW____

ANSWERS: 1. False, 2. Yes., 3. E., 4. True, 5. B., 6. True, 7. B., 8. Your answer

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Hold These Thoughts

Using a tool belt correctly is one of the best ways to prevent injuries when working at heights.

Carrying your tools on a belt allows you to keep your hands free for your tasks. A falling tool is subject to damage, and can also cause injuries to your feet, or to workers on a level below you. A sharp tool such as a knife or chisel can stab you if it is carried unsafely.

Choose the right tool belt assembly to keep implements safe and secure. Pockets, pouches and slots should be of the correct size and shape to keep your tools from falling out. The belt should be made of a sturdy material, reinforced for the points of tools. Fasteners should be effective and resistant to wear.

Sharp tools such as knives, saws, hatchets, axes and other cutting or chopping tools must be guarded by scabbards or sheaths to prevent injury and tool damage.

Tool belts must never be used as safety belts for working at heights.

Do not hang your tool belt up on nails, hooks or other protruding objects where it may cause an entanglement hazard around machinery, or an overhead hazard for people working below you.

A tool belt should be balanced so the weight is approximately equal on each side. When the belt is heavier on one side, your back is pulled out of alignment. Repeated wearings cause chronic discomfort and back problems. If you need most of your tools on one side for easy access, balance the other side with supplies such as nails or bolts.

Take the tool belt off when you take a break, to give your back a chance to rest and readjust. Don't pack around excess pounds. Take a regular inventory of items in your tool belt and get rid of unnecessary weight.

For the Record

Date of Meeting: _____
Location: _____
Start Time: _____ Finish Time: _____

Topic: _____
Department:_____
Meeting Leader: _____

In Attendance:

It really happened...

A worker on a self-propelled scissor lift was installing bolts to connect two large overhead steel beams. The platform controls were not protected against inadvertent operation. The worker inadvertently activated the lever for controlling elevation.

As the platform rose, the worker was pushed firmly onto the control lever when he was caught between an overhead beam and the elevating platform's guard rail. The platform continued to rise, fatally crushing the worker.

Overhead work frequently involves the use of lifting devices. The best way to prevent incidents such as this is to make sure they have controls that are protected against inadvertent operation.

Here are some typical occupational health and safety regulations that apply:

- Each set of operating controls of an elevating work platform must be provided with an emergency stop device.
- The emergency stop device on an elevating work platform must be within easy reach of the operator, and must be clearly labeled STOP and be red.
- Each elevating work platform must have a clearly marked overriding lowering control which, in an emergency, will enable a worker at the lower controls to stop and lower the platform.

Note: *TalksZone* safety meetings are not intended to take the place of your own safety procedures. Always consult and/or review your procedures before attempting any work.