

Toolbox Talks 2

061: Unsafe Acts: Overhead Lifting

Discussion leader duties for this session:

Make a short list of tasks or work that requires overhead lifting, noting which of these are likely to be encountered on this job.

What this Safety Talk covers:

Most injuries occur not due to unsafe conditions, but due to unsafe acts. This Safety Talk addresses unsafe acts related to lifting things overhead.

Discussion notes:

Two overhead lifting facts to think about

- Overhead lifting involves the muscles of the neck, shoulders, chest, back, abdominals, and legs. The process of lifting something overhead puts any one of the involved muscles at risk. Also at risk are the ligaments and tendons associated with those muscles.
- Overhead lifting requires balance and coordination. But even a well-coordinated person with excellent balance can be injured with the wrong combination of footing, object size, and object weight. A mistake in *how* you lift can also cause injury.

Unsafe acts related to lifting things overhead

- Standing on an unstable surface. This can be anything from gravel to a poorly secured ladder.
- Lifting out of position. Get under the load, rather than lifting from one side. This way, you reduce lateral loading on the spine and shoulders.
- Rotating. While you're lifting something, don't twist or rotate at the waist. Observing this rule will eliminate a common source of back injury.
- Lifting without warmup. At the start of the day or after a break, your muscles and ligaments may not be ready for lifting. Warm up with dry-run "lifting" movements.
- Arching your back to balance the load. Your spine needs to be "neutral" in any lift. That is, if your spine keeps its natural S curve then it's at its strongest and most stable. This nearly eliminates the potential for disk injury or pulled back muscles.
- Lifting with your arms behind your neck. Two popular gym exercises involve motions behind the neck. One is a pulldown, the other is a pressing motion. The fact these are popular does not mean they are safe. They put the shoulder outside its normal plane of rotation and at high risk for dislocation and rotator cuff injury. Also, your back can't have its S curve when you lift this way. If you lift or pull overhead, keep your hands from going behind your neck.
- Talking while lifting. One danger is you aren't paying attention. The other danger is you aren't breathing for a safe lift. Full lungs stabilize the spine; this is why competitive lifters take a deep breath and then exhale during the lift.
- Lifting when exhausted. Each of us has a limit to how much exertion we can tolerate in a given day. The problem with lifting is we don't usually experience soreness until the day after. If you assume you can keep lifting as long as there is no pain, you assume wrong. If you feel bone-tired, switch to a different activity. It's not smart to keep lifting with a back or shoulder joint that is unstable due to exhausted muscles.
- Not wearing PPE. Your safety glasses and the bill of your hardhat provide protection.

Review and discussion

1. What kinds of surfaces might be too unstable to allow safe overhead lifting?
2. If a surface is unstable, what can you do to correct the problem so you can lift safely?
3. Where should your body be in relation to the load? Why?
4. Should you keep your trunk stable or should you allow rotation during an overhead lift? Why?
5. What is an injury prevention practice you should do before lifting a lighting fixture overhead? Why is this dangerous?
6. What does it mean to keep your spine neutral during a lift? *[Note to Presenter: You could draw a stick figure and show the lines of force, if you want to give a graphical explanation. The force needs to be applied to the natural S-curve of the spine. This is the spine's strongest position. Even a minor deviation from this position results in a far weaker spinal column.]*
7. If you lift or pull overhead, where should your hands not be? *[Note to Presenter: This is easy to demonstrate. Have someone lift a light object (e.g., a stick of 1/2" EMT) overhead, with the hands in the safe zone (in front of the shoulder) and then with the hands in the unsafe zone (back of the shoulder). You can watch the shoulder joint and see that this is a mechanically poor lifting position. It actually damages the shoulder, if practiced regularly. It does this by elongating the tendons that keep the shoulder from hyperextending. Elongated tendons will predispose the shoulder to dislocation.]*
8. What's wrong with talking while lifting anything heavy or anything overhead?
9. If you're feeling bone-tired and drained after spending all morning lifting 4-inch Rigid into overhead mounting brackets, what is this a sign of and what should you do? *[Note to Presenter: Electrical work is often physically demanding. Each of us has different limits. While no foreman wants people to use the tiring effects of hard work as an excuse for "getting out of hard work," a foreman also doesn't want the crew unable to function the next day. So, some communication and judgment are required. The buzz phrase that applies is "reasonable accommodation." And that means both the foreman and the electrician need to be reasonable. Everyone needs to understand that some jobs are just going to be very demanding. Where possible, spreading out the demand can reduce the chance of injury.]*
10. What should you do if an object seems too heavy or awkward to lift and support overhead, especially if you have been lifting these all day? *[Note to Presenter: We often have a hard time admitting something's too heavy or awkward to lift. But here's the thing to keep in mind: It's better to not exceed your limits and leave people wondering if you could have lifted that particular object, than it is to exceed your limits and injure yourself (thereby removing all doubt). In other words, you will look stronger if you don't get hurt while lifting something too heavy for you than if you lift it and do get hurt. Getting help is one way you don't get hurt. You can get help from another person or from devices that assist with lifting.]*

Participant's Signature and Date
