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Up in the Air

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Last October, an employee climbed an eight-foot stepladder to put ceiling tiles in an overhead storage space, 11.5 feet from the floor. To do this simple task, he had to carry the tiles up the ladder, then reach over and to the side to put the tiles away. The ladder tipped over. He fell, striking his head on the concrete floor, and was killed.

That wasn't in an automotive repair shop. But does it sound like a task you could have done? It's a safe bet that everyone reading this article has used a ladder. It's a winning bet that each of you has at least one ladder in your shop. And it's a fair bet that many of you have fallen from a ladder or know someone who has. Why? All you need to do is climb up and down. That's not hazardous, is it?

Falls from ladders injure more than a half a million people each year in the United States. About 10% of those are work-related. Most falls don't kill. But the faller often lands in a hospital with broken bones. Even a fall from a six-foot ladder can cause permanent damage.

Why did this employee die? OSHA's brief investigation summary lists some key points:

- He was trying to carry an awkward and heavy load up the ladder. The weight of that load could have put the ladder off balance. And he couldn't keep three points of contact with the ladder while carrying that load.
  Lesson: Maintain three points of contact. Whether you are working from or climbing the ladder, you need to have three parts of your body in contact with the ladder at all times. When climbing, that needs to be your hands and feet. Find another way to bring materials up – use a tool belt or a backpack or a tag line. When you're working from the ladder, you might be able to use your feet and torso as the three points. If you can't use both hands for climbing, if you can't keep those three points of contact, a ladder probably isn't the best choice for the job.
- The ladder may have been too short for the task. The maximum safe reaching height from an eight-foot ladder is just 12 feet, less if you're short (height of ladder + four feet). If he was stacking the tiles, starting at a base of 11.5 feet, he'd quickly get beyond that maximum reach.
  Lesson: Choose the right ladder for the job. Make sure the ladder is tall enough that you can comfortably reach the work area. Check that it can support your weight, plus the weight of any tools or equipment (we see a lot of stepstools designed for only 200 pounds – How much do you weigh?). Type III ladders and stepstools are for lightweight use only. Unless you want to weigh each worker before allowing ladder use, choose ladders that are Type I or even heavier-duty.

- He had to reach to the side to put the tiles in place.
  Lesson: keep your belt buckle centered. If you can't easily reach the work space, move the ladder. If you can't move the ladder to the right workspace, look at an alternative to the ladder.

Where are ladders used in your shop? Why are they used? Do your painters need to go onto the roof, to make adjustments to the air handler? Do you need to change the covers on the spray booth sprinkler heads? Or to change lightbulbs inside the shop? Are people using ladders to work on the top of pickup trucks or other tall vehicles? Is there a better way to do the same job?

For work on vehicles, a mobile scaffold or work platform may allow both safer and faster work. These give more room to move around, making it easier to reach the part of the car that needs attention. They're easy to use safely, as long as you make sure users check their condition each time, use them only on level ground, lock the wheels, and ensure the lock pins are securely in place.

Ladders used to get onto rooftops or mezzanines have to be straight ladders. And they have to extend three feet beyond the rooftop, to give you something to hold as you transfer to and from the roof. If possible, secure it to the roof, so it won't move as you get on or off. If you're using an extension ladder, set it up at a 75° angle, one foot out for every four feet up. Too shallow an angle, and it can slip out from under you.

Check the condition of the ladder and of where it will be used before you start the job. If the ladder is being used on a smooth surface, will it stay in place? Is the area level? Are there any power lines overhead? Those are not insulated – even if you use a fiberglass ladder, stay at least ten feet away from them.

When the ladder is set up, think about it having four solid points of contact: all four feet solidly on the floor for stepladders; both feet on the floor and both rails solidly against a surface for straight ladders.

NIOSH has developed a free smartphone app that provides guidance on safe use, and that even checks the angle of your straight ladder or whether your ladder or scaffold is level. It's available for both Apple and Android phones (a search for NIOSH will bring it up)

Ladders aren't great working platforms. Think about whether there are safer ways to do the job. If you or your employees need to use ladders, don't take their use for granted. Review safe use – check condition, check location, realize the limitations, don't fall.

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