



# Human error? Consider human factors

When accidents happen, it's tempting to see human error as the cause—the worker made a bad decision, wasn't paying attention, didn't follow the rules. But human error is a symptom of deeper trouble and is just a starting point in an accident investigation. Usually many elements contribute to an accident. Human error is only a label, one that requires exploration.

## What's behind human error?

No one goes to work intending to be injured. The decisions and actions that workers take make sense to them at the time given their goals, knowledge, and focus of attention. Every day, workers adapt to changes in their workplace and modify their actions to keep things operational. When an accident happens, the key is to find out how the worker's actions were influenced by different elements in the workplace.

The science of human factors focuses on those elements. Human factors evaluates the interaction between people,

workplaces, and management systems—the elements that make up the “workplace system.” The human factors approach to an investigation asks why a worker's decision or action made sense to that worker at the time.

Because it is system-based, the human factors approach is a valuable way of looking at the big picture of an accident. Once it's clear what shaped and guided a worker's decisions and actions, steps can be taken to prevent similar accidents from happening.

## What happened?



A serviceman was called to a worksite to install new tires on a transport truck. He attached the air supply hose to one tire, positioned the tire on the wheel rim, and left the tire to fill while he did other tasks. He later returned and was preparing to check the tire pressure with a hand-held gauge when the tire exploded off the rim. The explosion caused serious injuries that led to the worker's death.

## From a human factors perspective, why did it happen?

The accident happened because the tire was overinflated and the worker was standing nearby when it exploded. The human factors approach asks why the tire was overinflated and why the worker was standing close by.

Several workplace factors led this worker to act as he did. First, the automatic shutoff on the air compressor was set to 175 psi, well above the 100 psi needed to inflate the truck tires. Second, the air hose had no inline pressure gauge, so the worker had to check the pressure up close with a hand-held gauge. Third, there was no cage or other restraining device around the tire to hold it in place if it exploded.

Also, certain management factors influenced the worker's behaviour. Management had not given him appropriate equipment, adequate training, or safe work procedures.

Considering all of these factors, the worker acted in ways that made sense to him. His actions were based on the resources and knowledge available to him as he worked to fulfill the goal of changing the tire.

# The interaction of human factors

