RAISING THE BAR

A Safety Guide to Working at Heights

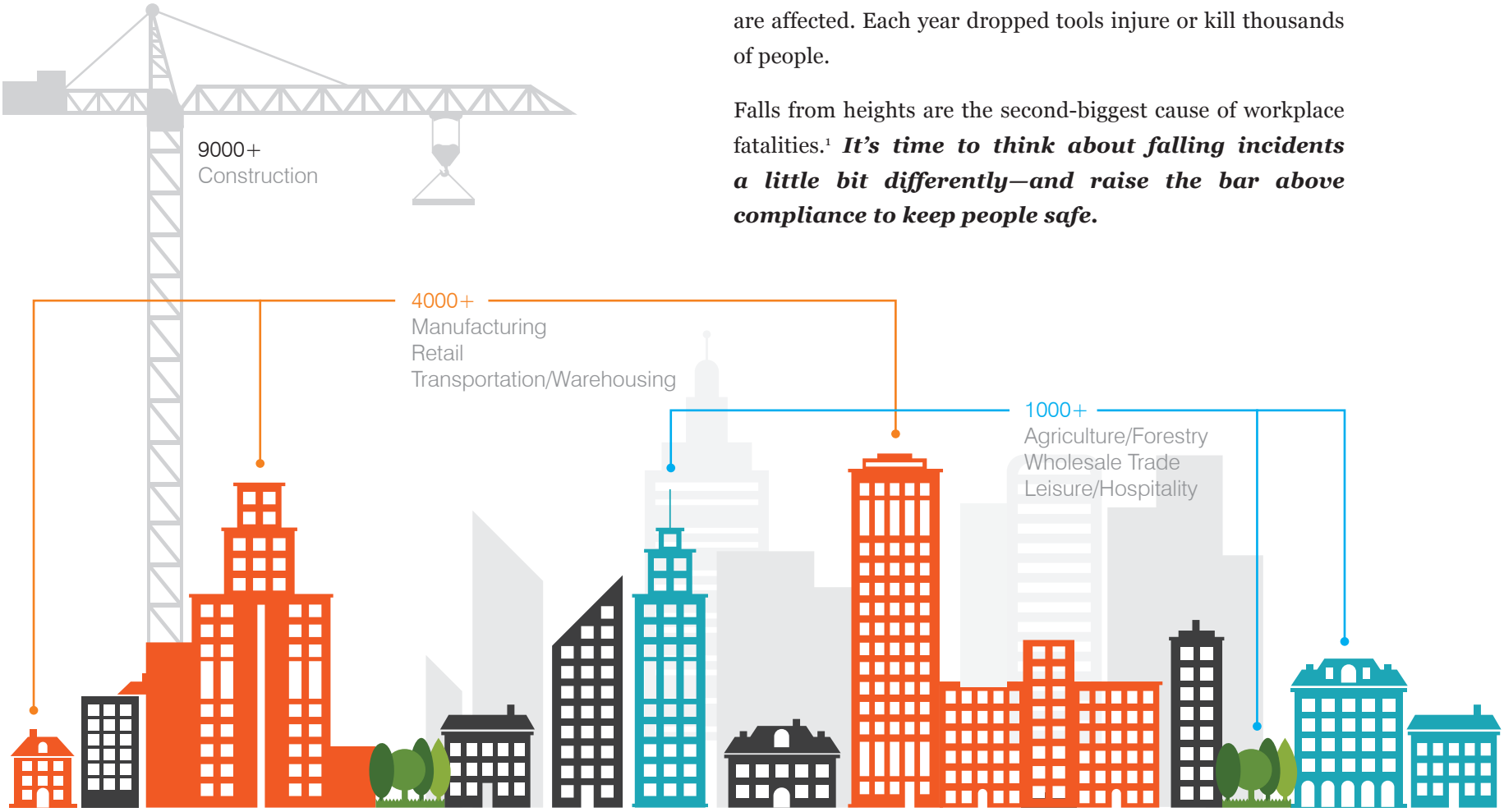
SAFESTART®

FALLS FROM HEIGHTS BY INDUSTRY[1]

Working at heights is a daily reality for millions of workers. From construction and manufacturing to agriculture and transportation, nearly every major industry suffers thousands of falls each year.

The tasks performed at heights may look a little different from one job to the next, but every single fall can lead to life-altering injuries. And it's not only the people working at heights who are affected. Each year dropped tools injure or kill thousands of people.

Falls from heights are the second-biggest cause of workplace fatalities.[1] ***It's time to think about falling incidents a little bit differently—and raise the bar above compliance to keep people safe.***



[1]National Safety Council Injury Facts® 2017 Edition

THE COST OF

FALLING FROM HEIGHTS

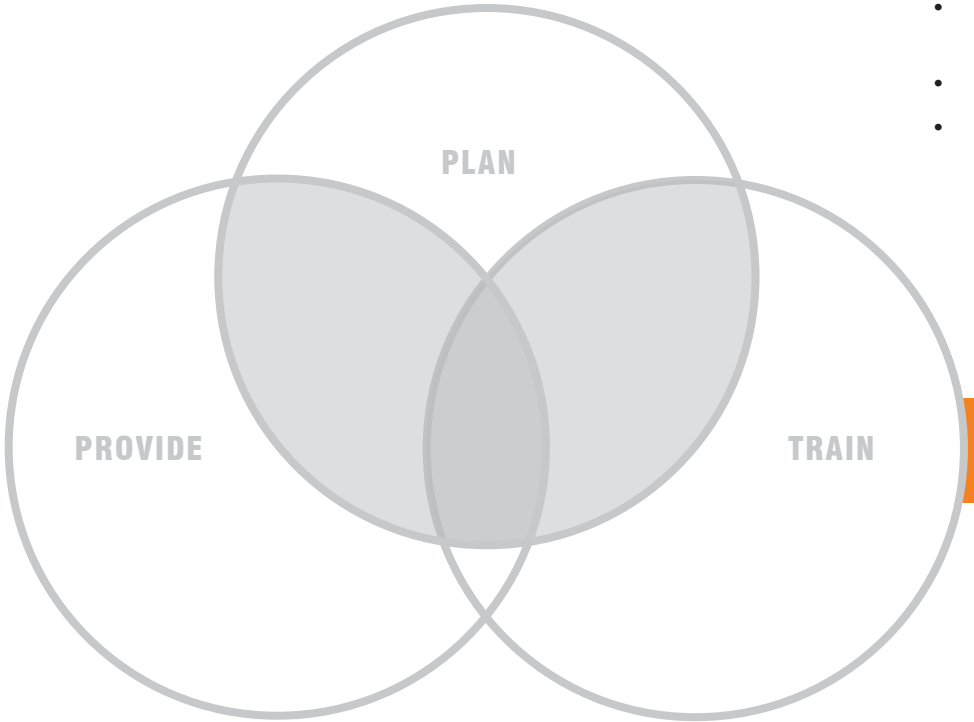
Falls may not be the most common workplace incident, but when they occur they often result in a serious injury or fatality. The hospitalization rate for falls from ladders alone is roughly three times higher than the average injury.[2]

When it comes to medical compensation costs, falls are one of the three most expensive causes of injuries.[3] And that doesn't account for the indirect costs of lost-time, which include reduced productivity and plummeting morale. Nearly half of falls lead to at least a month of missed work.[3] And the cost of dropped tools and equipment can also be substantial.

This guide is about understanding and preventing falls from heights, also known as falls to a lower level. The term "falls" will be used to refer to these types of incidents.

[2]Centers for Disease Control and Prevention, Morbidity and Mortality Weekly Report (MMWR), "Occupational Ladder Fall Injuries—United States, 2011", 2014
[3]National Safety Council Injury Facts® 2017 Edition

PLAN, PROVIDE AND TRAIN



The standard advice from OSHA[4] on preventing falls from heights is to plan, provide and train.

It's a catchy summary of the following compliance requirements:

- risk assessments and other planning activities should occur before work begins
- from ladders to harnesses, the proper equipment must be provided
- training must be conducted on fall prevention rules, practices and equipment

THREE STEPS to Preventing Falls From Heights

It's good practice to follow OSHA's plan for working at heights. But planning, providing and training is only the start—you also need to account for a few more crucial elements.

For a more detailed look at the standard **Plan**, **Provide** and **Train** approach, visit safestart.com/plan-provide-train

[4]OSHA, "Fall Prevention Campaign", 2017

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PLAN

Before any work is done, a thorough risk assessment should be conducted for each task, and decisions have to be made regarding the right tools and the safety equipment required. It's important to discuss:

- how to remove or minimize known dangers in the work environment
- how to keep work areas clean and free of trip or slip hazards
- how to provide rails or boards around elevated floors and platforms
- which PPE should be used
- which tools will be needed and how to ensure their safe and proper use

Planning happens ahead of time—which means that it happens in a bubble. Some real-time hazards only appear when work is underway.

Unless people are trained to recognize risk fluctuations associated with changing conditions and human factors, a traditional risk matrix completed ahead of time can quickly become inaccurate.

It's also easy to fall back on plans for previous jobs if you always seem to need the same type of equipment, which can cause small but important differences to be overlooked.

In the planning phase, avoid taking shortcuts, rushing or only considering best-case scenarios.

Ideally, everyone involved in the planning process will have a solid understanding of how to account for human factors that could cause issues once work begins.

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PROVIDE

Workers need the right equipment for the job. When working at heights, this includes fall restraints and other relevant PPE, as well as the right kinds of ladders, scaffolds and tethers.

Each worker must be provided with their own harness (in the right size) that needs to be kept in good condition. Equipment has to be in full working order and PPE should be regularly inspected for defects and wear and tear.

Obviously, ladders, platforms, toeboards and other structural elements must also be provided by an employer. It's also up to supervisors to confirm that everything is set up and deployed properly.

PROVIDING ISN'T ENOUGH

Having a personal fall arrest system and using it are two different things. In addition to providing PPE, employers need to give workers the safety awareness, decision-making skills and habits necessary to use fall protection every time their feet leave the ground.

Learn more about influencing PPE use in a free guide at safestart.com/ppe

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TRAIN

Providing training is just as important as providing the right tools and safety equipment. Workers need to know how to set up and use their equipment and understand the importance of doing so correctly.

This is especially true for fall protection—employees need to know how to adjust and secure it arrest systems, in case all other precautions fail.

Workers also need training in hazard recognition and safe practices and should be given the responsibility and the right to make safety their primary concern.

TRAINING TROUBLE

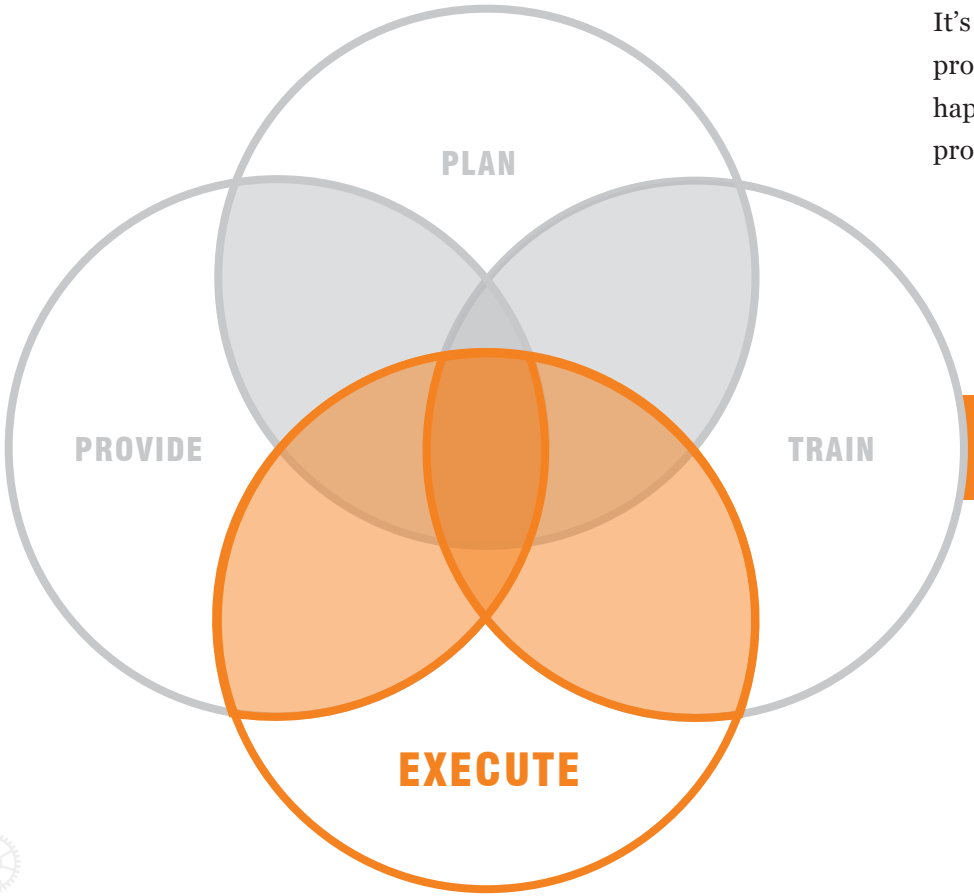
Training can be an amazing safety tool—when it works. But all too often, employees forget or forgo what they learned in training and/or trainers don't have the knowledge, time or supporting resources to teach workers about compromising factors like human error.

It's not just about providing training on working at heights, but about delivering relevant training that sticks.

Safety personnel and trainers must rely on supervisors and workers after the training has concluded to ensure safe practices are communicated and followed to avoid the dangerous intersection of the complacency curve and forgetting curve that naturally follows any training.

PLAN, PROVIDE, TRAIN... AND

EXECUTE



In the past seven years, the number of non-fatal workplace falls has remained relatively static while the number of fatalities has risen.[5]

Clearly, the standard advice isn't enough of a solution if so many people are still getting hurt and killed each year.

It's time to take the missing steps to execute a robust fall protection strategy. The standard advice covers what should happen. But it ignores a few crucial details, like how fall protection happens... or doesn't.

FOUR

~~THREE~~ STEPS to Preventing Falls From Heights

[15]National Safety Council Injury Facts® 2017 Edition

EXECUTE

Planning, providing and training all happen ahead of time. Once someone starts working at heights, it's up to them to put their training and equipment to good use.

There are several factors conspiring against workers once their feet leave the ground.

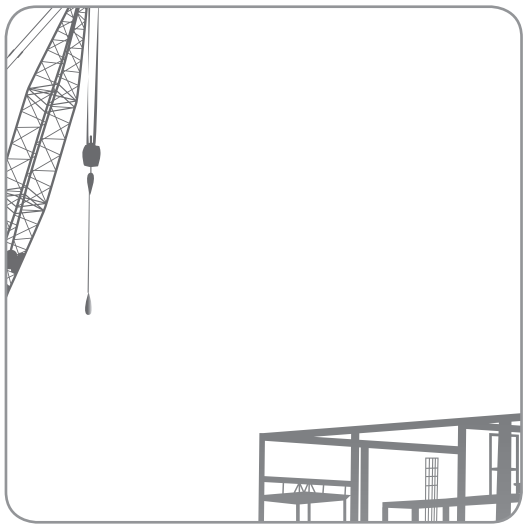
Complacency and the normalization of risk lulls experienced workers into a false sense of comfort—and leads them to take riskier actions.

Compounding risk makes a bad situation worse—and often workers don't even realize it.

Human error can strike anyone at any time—especially as people rush or become tired.

Supervisory effectiveness can dramatically sway the risk of working at heights—either positively or negatively.

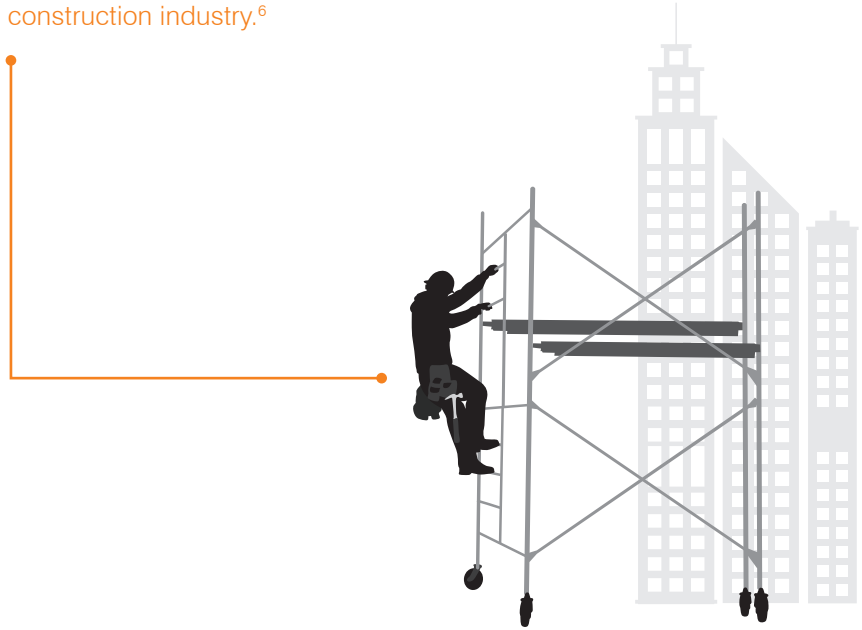
To execute an effective falls prevention program, you have to understand these issues and then deal with them head-on.



COMPLACENCY
AND THE

NORMALIZATION OF RISK

One industry where falls are the biggest concern: construction. Falls from roofs, ladders and scaffolds account for nearly 40% of fatalities in the private construction industry.[6]



Workers don't have to work at great heights to risk injury or death because more than 40% of fatal falls occur from 15 feet or lower.[6] The most common height to fall from? Only 6-10 feet.

It's such a common height to fall from because even though fall protection is required, it doesn't seem far off the ground and workers are less likely to treat it with respect. But the stats don't lie—plenty of people fall less than 10 feet and falls from that height cause over 25% of all fall-related deaths.[7]

Workers may wear their harnesses at heights where the danger is more glaring, but 6 feet can seem like a non-issue for someone who regularly works at 30 feet or more.

When people work above ground level all day, every day, they can become complacent with heights. Risk is the norm and even huge elevations can quickly become familiar, even comfortable.

Once the risk of heights has been normalized, the likelihood of a fall goes way up.

[6]Bureau of Labor Statistics, Census of Fatal Occupational Injuries Summary, 2015
[7]Centers for Disease Control and Prevention, Morbidity and Mortality Weekly Report (MMWR), "Occupational Ladder Fall Injuries—United States, 2011", 2014

RECOGNIZING
AND
OFFSETTING

COMPOUNDING RISK

The higher you work, the greater the risk. Most workers generally understand this. But fewer people realize how other factors increase the risk exponentially with each new risk factor.

This means each missing safeguard and each human factor that is present will increase the likelihood of a fall.

Risk compounds in a way that is too complex to compute in real time. But it's possible to offset compounding risk elements without complicated calculations. In reality, only three things are required:

- ❑ Knowledge that risk expands as more elements are present.
  Do workers understand that the likelihood and potential severity of injury increases as risk grows?
- ❑ The ability to recognize various risk elements as they appear.
  Can employees recognize when surfaces become slippery? Are they aware that fatigue and complacency also increase risk?
- ❑ Understanding of how to offset risk.
  Will people take a moment to clip their harness or tether their tool? Monitor their balance, traction and grip? Avoid rushing?

HUMAN ERROR

Physical protection is vital to safety, but so is human action. And people are much more likely to make mistakes or make the wrong decision when they're frustrated, rushing, fatigued or complacent.

These states can lead workers to stop watching or thinking about what they're doing, lose their footing or drop an object. Any of the four states can turn a perfectly safe situation into a dangerous one.

STATES

- ❑ RUSHING
- ❑ FRUSTRATION
- ❑ FATIGUE
- ❑ COMPLACENCY

ERRORS

- ❑ EYES NOT ON TASK
- ❑ MIND NOT ON TASK
- ❑ LINE OF FIRE
- ❑ BALANCE/TRACTION/GRIP

OUTCOMES

- ❑ INJURY
- ❑ NEAR-MISS
- ❑ EQUIPMENT DAMAGE/LOSS
- ❑ PRODUCTION SLOWDOWN

Fatigue alone is one of the most overlooked escalators of risk.

40% of workers regularly operate at three times the risk due to fatigue. Learn more in a free webinar at safestart.com/webinars

ADDRESSING THE CAUSES OF HUMAN ERROR

It's hard, if not impossible, for employees to eliminate the individual causes of the four states.

But with the right training, people working at heights will be able to minimize how often they're in the states that lead to costly mistakes.

They can also recognize that their state and height significantly increase the risk so they will take a moment to adjust their actions to offset and lower the risk.

There are two big instigators of human error: structural/production issues and personal issues. When physical or organizational work factors cause the four states, it's time to address the cause. This can mean providing more breaks to avoid fatigue or renegotiating deadlines to reduce rushing. Here are two examples of what this problem could look like in the workplace.

STRUCTURAL/PRODUCTION ISSUES

ISSUES

- ❑ TIGHT DEADLINES
- ❑ NOT ENOUGH BREAKS
- ❑ CHANGES IN WORKING CONDITIONS
- ❑ ERRORS LEADING TO DELAYS AND FRUSTRATION

STATES

- ❑ RUSHING
- ❑ FRUSTRATION
- ❑ FATIGUE
- ❑ COMPLACENCY

ERRORS

- ❑ EYES NOT ON TASK
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- ❑ LINE OF FIRE
- ❑ BALANCE/TRACTION/GRIP

PERSONAL ISSUES

ISSUES

- ❑ LATE TO WORK AND NEEDS TO CATCH UP
- ❑ DISPUTE WITH A CO-WORKER
- ❑ LACK OF SLEEP AT HOME
- ❑ "I'M SAFE ENOUGH" ATTITUDE

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SUPERVISORY SUPPORT

It's clear that risk can be normalized—and it's up to safety professionals to change workers' perception and regularly remind them about the dangers of working at heights.

Supervisors should be dedicated to fighting complacency. But first, companies need to make sure that supervisors have the proper conversation skills and safety awareness.

One-on-one conversations, reminders and positive interventions can keep workers mentally grounded when they're working at heights. And toolbox talks and safety posters can keep safety in everyone's thoughts if they're used properly and tied to a larger human error program.

Help supervisors understand the impact their words and directions have on risk. A simple, "We need to get this done today" can be enough to increase errors and compound risk that is already elevated by working at heights. "We need to get this done today, but that doesn't mean rushing past safety procedures" might be enough to prevent an incident-causing error or error in judgement—especially if the worker has also been trained in human factors.

EXECUTION AIDS

Once workers have the training and experience to safely work at heights, companies need to help them keep their skills and attention sharp. Many employers make use of passive execution aids like safety posters or reminders about PPE requirements.

But don't overlook more active execution aids. They take a bit more effort but they can engage workers in ways that banners and slogans can't.

DEMOS

One of the best ways to get everyone participating is to have each employee demonstrate how to properly use a piece of equipment. This is a great way to get workers moving and actively engage the brain, leading to longer-term awareness.

The trick is to have everyone carry out the physical actions of putting on fall protection or safely deploying a lift or climbing equipment. As a side benefit, individual demos give supervisors the opportunity to notice if anything is being done incorrectly.

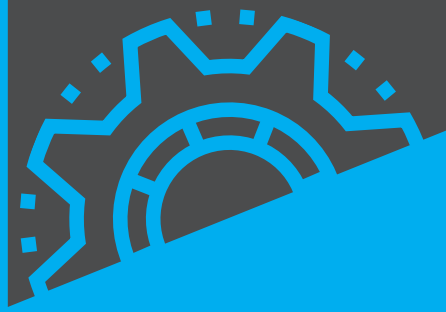
CONVERSATIONS

Speaking to workers about their own frame of mind can prompt them to take safer actions, and gives workers and supervisors alike a better sense of risk levels in the workplace. It also encourages everyone to think a little more deeply about human error.

One of the first things safety managers notice after using conversation tools like SafeStart's Rate Your State is just how powerful a two-minute chat can be. A supportive framework for supervisor-worker conversations can dramatically increase the frequency and efficacy of safety interactions. If you don't have a conversation tool, now's the time to establish one.

HABITS are an effective safety tool. They function as an execution aid by guiding workers to act safely even when they're affected by adverse mental states.

Good safety habits can lead to better compliance. Make sure any complacency reduction training includes a healthy dose of habit-building.



REDUCING COMPLACENCY

Complacency is a complicated and stubborn issue. When it comes to working at heights, it's also the most common state.

That's why addressing it takes a multi-pronged approach. Toolbox talks are great on a day-to-day basis but the problem also requires periodic and focused attention.

Three factors are proven to address workers' complacent approach towards safety when working at heights.

KNOWLEDGE

- ❑ Classroom training to understand complacency
- ❑ Share stories to drive home the importance of safety when working at heights
- ❑ Introduce cards or other materials to help workers track levels of complacency

REAL-TIME AWARENESS

- ❑ Recognize the presence of the four states as they fluctuate throughout the day
- ❑ Observe colleagues and their safety behavior

ORGANIZATIONAL SUPPORT

- ❑ Supervisors dedicated to fighting complacency
- ❑ One-on-one conversations and reminders
- ❑ Steady rotation of toolbox talks and safety posters

KNOWLEDGE

Complacency can't be controlled until everyone understands what it is and how it works.

TRAINING

Learning how complacency works requires dedicated training time. A multi-format training program is ideal as it caters to most learning styles and lets people explore complacency in a practical way.

SHARING STORIES

Telling stories about moments of complacency—and hearing the stories of others—helps workers truly see how big of an issue complacency can be… and how personal of a problem it is. Share stories in training and keep the storytelling going during safety meetings and toolbox talks.

REAL-TIME AWARENESS

The best way to avoid injury when working at heights is to stay aware of the four states. Fortunately, real-time safety awareness is a skill that can sustain itself in a constant feedback loop.

DISRUPTING REMINDERS

Complacency requires constant disruption. Regular one-on-one supervisory interventions are a good way to combat complacency. So is posting visual reminders in strategic locations, adding safety messages to regular communications (such as email and lunchroom TVs) or giving people small safety reminder cards, notepads or other materials.

Not all reminders are created equal or last forever—go with something proven that compels workers to actively think about risk, and change the visuals and messages as frequently as you can to keep them from drifting out of focus.

RECOGNIZING STATES

Complacency often occurs in conjunction with rushing, frustration or fatigue. These states are never static—they rise and fall in real time. Learning to recognize them in ourselves as they fluctuate is an important safety skill that makes it easier to avoid becoming complacent.

WATCHING OTHERS

It's easier to notice states like complacency in others. Seeing a co-worker act complacent reminds us to consider whether we are also being complacent. It also provides an opportunity to intervene on the co-worker's behalf.

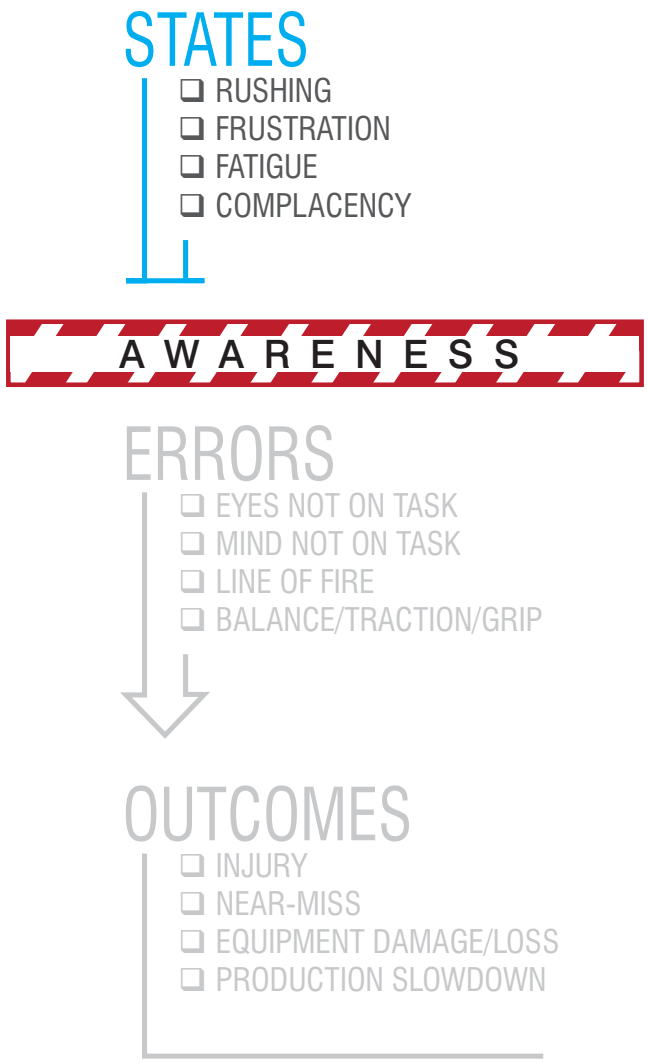
PREVENTING HUMAN ERROR WITH REAL-TIME AWARENESS

It's not always possible to avoid states like rushing, frustration, fatigue and complacency. Sometimes rushing or working long hours to stay on schedule is unavoidable.

But it ***is*** possible to put up a safety net between the states and the errors. If people can recognize the states as they happen, they're more likely to avoid errors.

The primary goal of human error reduction training like SafeStart is to help workers ***understand*** the dangers of these states, ***be aware*** of when the states are affecting them, and ***adjust*** their actions to minimize their risk of falls.

If you can't eliminate the states then managing them is the next best thing.



HARNESSING IT

ALL TOGETHER

The most effective way to provide knowledge, real-time skills and organizational support is to bundle it all into a single program. It takes a lot of expertise, practice and support to conquer human error and build the engagement needed for a strong culture of safety.

To truly keep workers safe at heights, you need to address human error—and that requires a comprehensive solution that helps everyone to do their part to keep themselves and others safe.

SAFESTART

Knowing that human error increases risk is only the very first step in preventing negative outcomes. SafeStart provides training to educate workers on human error and then give them practical skills and awareness to stay safe every single day.

SafeStart checks all the boxes to deal with human error in your working at height safety program, including:

- ❑ human error training
- ❑ better risk awareness
- ❑ complacency reduction
- ❑ habit-building support
- ❑ supervisory component

SafeStart also makes it efficient for companies and people by solving not only falls from heights, but an endless list of other serious challenges from slips and trips to back injuries and distracted driving. Because SafeStart knowledge and skills are transferable, workers will be safer no matter where they are or what they're doing.

DO SOMETHING ABOUT

FALLS FROM HEIGHTS

If you've read this far then you obviously take falling from heights seriously.

Take the next step by attending a SafeStart webinar at:
safestart.com/webinar

These free webinars will provide further information about how human factors affect every aspect of your safety program—including falls prevention.

You can also download other guides and great safety resources at:
safestart.com/guides

Our webinars are an easy way to get introduced to SafeStart. We host free 45-minute sessions every month so you and your colleagues can learn about SafeStart principles and discover how SafeStart will transform your company's safety performance.

Learn more at:
safestart.com/webinar

SAFESTART®

About SafeStart

SafeStart is the most successful safety training process in the world for developing personal, 24/7 safety skills that address human factors in safety—proven to reduce injuries 50% on average by more than 3,000 clients in 60+ countries.

The best way to learn about SafeStart is at one of our workshops but you will also find other options on our website, including:

- Introduction Webinar
- Case Studies and Testimonial Videos
- Employee Engagement Video

Visit us online at safestart.com
or call us toll-free at 1-800-267-7482