

CONSTRUCTION SAFETY:

INSIGHTS AND SUGGESTIONS



November 2018



CONSTRUCTION SAFETY: INSIGHTS AND SUGGESTIONS

The IRMI MindForge team hired consulting firm Mad Pow to perform a series of on-site interviews and observations at three construction sites in different areas of the United States and report on the findings. The purpose was to learn about the attitudes and behavior of construction workers and supervisors with respect to safety and safety training, in the hope of gaining insights that could help prevent serious injuries and fatalities (SIFs) from occurring on construction sites. What we learned is presented in this executive summary. It's based on the full original report to IRMI written by Mad Pow's Behavior Change Design Director, Amy Bucher, Ph.D., and Behavior Change Design Senior Vice President, Dustin DiTommaso. **IRMI would like to thank Marsh's Global Construction Practice for sponsoring this paper.**

Construction Safety Risks Vary by Trade, Job Site, and Job Stage

At each job site, the most common safety risks varied, depending on the nature of the job, the stage of the job, and the trade of the workers being interviewed. In addition, the highest risks shifted over the course of any given job depending on what tasks were being done. Safety training, ongoing safety training refreshers, and other safety efforts need to be designed with this in mind.

Here are some of the most common safety risks that workers mentioned.

- Working in heat, particularly when weather first becomes hot.
- Working at heights, including falls from ladders and lifts.

- Excavations and underground work.
- Working with electricity.
- Mechanical accidents, such as failure to operate machinery correctly.
- Eye injuries related to incorrect or missing personal protective equipment (PPE).
- Coordination among multiple worker groups using a common workspace.
- Trip hazards related to "housekeeping" on the job site.

Typical Construction Safety Training

Regardless of trade, most workers reported a similar model of training. Typically, workers go through a longer safety course when they are beginning in their profession. For workers in a union, this training is likely offered by their union. For non-union workers, training may be offered directly by the company that employs them. Both union and non-union workers are likely to have completed the Occupational Health and Safety Administration (OSHA) 10-hour training course early in their career and, if they are in supervisory positions, the OSHA 30-hour training as well. Depending on their trade and career level, workers may have additional trainings and certifications specific to certain equipment or tasks (for example, for training for fall safety, forklift operation, or excavation work). Many job sites also offer site-specific safety training when workers come onboard, in addition to daily safety huddles and periodic more in-depth **"toolbox talks."**

Need for Tailored On-the-Job Construction Safety Training

Workers agree that training covers important information, and that it's necessary to prepare them to be safe on job sites. But they also feel it's not sufficient. Real learning, they say, takes place on the job. There seems to be a need for safety instruction in the work setting, close in time to when it will be put to use for particular tasks, and in a way that supports the worker's increasing skill and experience.

Construction Safety Training Could Be More Interesting and Relevant

Workers reported that training is done in multiple formats. From most to least common, these include:

- Classroom-based instruction, which may also include written materials, Power-Point slides, and video content.
- Small group meetings, such as a 45-minute site-specific safety orientation upon arrival at a job.
- Experiential learning, such as fall safety training in which workers experience a short drop while wearing harnesses and other personal protective equipment (PPE).
- Self-paced training using hard copy and digital written material.

The integration of bluetooth technology, geo-fencing, and beacon markers will have a huge impact on safety. These technologies can provide reminders to help employees make the right choice when faced with acting in a safe or unsafe way. It can be as simple as a text message to remind a worker to use PPE or advise them of hazards close by.

Larry Pearlman, SVP Workforce Strategies Practice, Marsh

Typically, workers also have daily safety briefings before work with their teams or the entire company, focused on key safety procedures for that day's specific tasks. Most groups also have a longer weekly or monthly **"toolbox talk,"** which hones in on relevant safety topics.

One training method that seems very effective is experiential learning. These trainings are not widely available, but they seem to have a stronger effect on learning and motivation than classroom or informational training.

On the job is where workers say they learn the most. New workers are usually started off on less complicated jobs—for example, they start out working from the ground level rather than on a lift. And they generally work along-side more experienced professionals who can answer questions and provide explanations. This side-by-side work, said workers, was critical to really learning safety procedures. Although people remember the information from training, seeing it put into action on the job site cemented it.



Your Capital, Your Risk, Our Business.

The world is rapidly evolving and the risks are more complex. Marsh's insights and solutions will enable construction stakeholders to effectively deploy their capital and lower their cost of risk.

www.marsh.com | us.construction@marsh.com

Marsh is one of the Marsh & McLennan Companies, together with Guy Carpenter, Mercer, and Oliver Wyman. Copyright © 2018 Marsh LLC. All rights reserved. 273516047



Alternate Methods of Training Have Mixed Appeal

Workers who were asked what they thought about new approaches to training—specifically, video games, virtual reality (VR), and just-in-time videos—gave mixed feedback on these options.

- Video games seemed the least appealing.
- The idea of using virtual reality for training got some positive reactions, especially—but not exclusively—among younger workers.
- Workers had practical concerns about just-in-time videos (videos produced quickly to address a particular situation). They said that, given the size and location of the daily safety huddles and the other on-site meetings where these videos might be shown, ensuring that everyone in the group could see and hear the video content on a small tablet screen could be a problem. This suggests that short, focused video trainings that could be watched on individual devices or in smaller groups might be well-received.

Workers Feel Pressure to Finish Work Quickly

For the most part, construction workers and supervisors alike understand that accidents are a threat to the ability of the contractor to complete a job on time and within budget. Several workers pointed out, without being asked, that it's more expensive for their employer if there is an injury or fatality than if work is delayed to prevent risky behavior. And workers at all three jobsites in the study knew that their company management truly values safety. Still, some workers reported feeling a tension between getting a job done safely and getting it done quickly.

Here are a few possible reasons for this tension that emerged from interviews with workers.

- Workers (especially new workers) feeling a need to prove that they are good at their jobs.
- A sense that a job well done is a job done fast.
- A desire to be done on the job site for the day.
- Perceived pressure from management to complete the work quickly, even when there is an explicit commitment to safety.
- Personal satisfaction and a feeling of accomplishment as tasks are completed.

There seems to be a need to reinforce the message that the upper limit for speed is imposed by what is truly safe.

Moments of Transition and Focus Are Opportunities for Risky Behavior

Construction workers report having a clear routine to start each workday that includes safety. Typically there is a safety huddle where general best practices and any safety issues specific to the day's tasks are reviewed. Workers then go to their assigned tasks.

When asked to describe situations when safety protocols aren't followed, these were some common scenarios.

- A worker leaves the site for lunch or a break, and forgets to properly restore all personal protective equipment when returning to the site.
- Workers remove their safety glasses to wipe condensation from the lenses while doing hot tasks such as cement pouring, then forget to put them back on.
- Workers who are transitioning between two tasks that are related but require different personal protective equipment (such as grinding and cutting) may fail to switch their face masks and shields between tasks.

- If personal protective equipment gets in the way of completing a task easily or efficiently, workers may remove it. Gloves that limit finger dexterity are the prime example of this.
- Workers who are moving repeatedly between two or more pieces of elevated equipment, such as two scissor lifts parked next to each other, may at some point forget to tie off.

For the most part, workers report that these failures of protocol are more often due to forgetfulness or oversight than deliberate choice. Some mechanism to keep workers mindful of their safety even in times of task absorption could help combat unsafe behaviors in times of transition or focus.

Culture on the Jobsite Determines How Safety Risks Are Handled by Workers

The challenge of creating a safety culture can be handled differently by different firms, as illustrated in our study.

- The first firm has a “good catch” program, where employees are asked to submit a summary of any safety issues they spot and address. Those who do so are entered into drawings for gift cards.
- At the second firm, supervisors emphasize the need to point out minor safety violations as they happen. Employees said they were comfortable with mentioning violations such as missing safety glasses or incorrect gloves—and that their colleagues are receptive when they do. Pointing out minor safety issues seems to be a natural and even casual communication—not a big deal or major stressor for most people.

- The third firm is a union shop, so its approach is union-centric. Although there are site-wide activities such as the daily safety huddle, much of the safety communication takes place within each trade. Immediately before the site-wide safety huddle in the morning, each trade group has their own brief safety meeting. Training and safety communication are provided through the unions, with only a brief orientation offered by the contractor to a new worker on the job site. Fortunately, the unions’ perspectives on safety are consistent with each other and with the contractor, so there was no clash of safety cultures.

A gap observed at both non-union sites was that subcontractors often are not fully incorporated into the safety culture. For example, many of the subcontractors working for the first construction company were unaware of the “good catch” program. General contractor employees said they felt more comfortable discussing safety with their coworkers than with subs. Some employees said that if they

To eliminate safety communication gaps between general contractors and their subcontractors, consider implementing project labor agreements (PLA) with project-specific safety objectives and requirements written into the contract language. PLAs can serve as the encouragement/enforcement arm when needed to hold all site personnel accountable to properly manage safety at all levels as a matter of terms and conditions.

David Marino, MD and US Construction Leader, Marsh

observed a sub behaving in an unsafe but not immediately life-threatening manner, their preferred route was to speak to their own supervisor, who would speak to the sub's supervisor, who would finally speak to the sub. Similarly, sub-contractor employees tended to express a higher degree of comfort with members of their own group than with other workers on the job site in general.

There is a potential problem at union sites as well, because the most powerful organizational cultures seem to come from within each union, rather than across the job site as a whole. At the union shop in our study, the cultures at the job site are complementary, and each union shares a focus on safety. Also, the different unions seemed to hold other unions in high regard; any complaints had to do more with congestion and coordination on the job site than any concerns about safety culture. However, having less of a central culture reinforcing safety behaviors could lead to inconsistency on job sites where the unions do not all share the same emphasis on safety.

Memorable, Succinct Messaging Stays With People

At two of the construction firms, workers used the same phrases to talk about safety that the safety officer or site supervisor used. At one firm, for example, the workers who were interviewed said safety is a priority because everyone needs to go home the same way they came to work, with all of their fingers and toes intact (or something very similar)—just as the safety officer did. At another of the three firms, a majority of the people interviewed used the same relatively uncommon word when talking about safety. They said that it's when workers become "complacent" that they are likely to be injured. It turns out that the site supervisor frequently mentions complacency as a source of risk. The repetition of a short but memorable phrase helps the concept stick with the workers and becomes part of their normal way of speaking about safety.

Establishing site-specific safety needs analyses can help ensure that an organization is prepared—and if completed prior to and during ongoing work, the repetition of the analysis process can improve an organization's overall safety culture.

Larry Pearlman, SVP Workforce Strategies Practice, Marsh

Witnessing a Serious Incident Is a Turning Point

Most workers reported seeing minor safety infractions but had never witnessed a serious injury or fatality while on the job. The minority who had, however, vividly remembered the incidents and talked about how those memories fueled their interest in safety. They reported sharing these stories with other workers as part of a larger conversation about safety in order to underscore the seriousness of proper safety behavior, particularly when they were in a supervisory position.



Your Capital, Your Risk, Our Business.

As companies continue to embrace the value of loss prevention, good decisions must be guided by good data. Whether deploying a comprehensive observational risk quantification tool or optimizing your risk finance spend, we will help.

www.marsh.com | us.construction@marsh.com

Marsh is one of the Marsh & McLennan Companies, together with Guy Carpenter, Mercer, and Oliver Wyman. Copyright © 2018 Marsh LLC. All rights reserved. 273516047



Stories Are a Powerful Mechanism for Knowledge Transmission

Related to the point about the power of a serious injury or fatality changing attitudes about safety, workers reported being influenced by the stories other workers told. Workers generally seemed to better internalize lessons transmitted through the story medium. This is consistent with psychological research that shows that stories are easier to understand and remember than simple information. One worker said, “I think more people learn more from the bad stuff, what should have happened. Tell us. Tell us what happened. What could have been done to prevent it. Tell us the accident.”

CONSTRUCTION SAFETY ISSUES AND INSIGHTS	
TYPE OF ISSUE	INSIGHT OR SUGGESTED CHANGE
Correct equipment for the task: Some safety violations happen when someone tries to accomplish a task using the wrong equipment.	Prepare the job site before beginning a task by putting equipment nearby or making clear actionable plans to quickly obtain needed equipment. If equipment-related lapses can be anticipated, offer proactive instruction on how to mitigate them. Coach workers on how doing tasks safely can also benefit production and efficiency.
Knowledge of task environment: Safety training provides necessary information, but doesn't “click” until workers put it into the context of day-to-day tasks.	Consider structuring training in modules that can be delivered in close time proximity to when related tasks will be done. Offer brief refresher trainings after a worker has first experienced a task or risk area to reiterate protocol.
Interpersonal skills: Some workers struggle to effectively communicate risk to others, especially across teams. This struggle may be either skills based (unsure how to effectively communicate) or psychological (uncomfortable raising issues outside of one's own team).	Safety messages are better received when they are delivered without anger and in a straightforward manner. Consider providing training on how to do this, using both formal training with general assertiveness skills and effective phrases and on-the-job coaching from foremen and supervisors with strong communication skills.

CONSTRUCTION SAFETY ISSUES AND INSIGHTS *(continued)*

TYPE OF ISSUE	INSIGHT OR SUGGESTED CHANGE
Breaking habits: More experienced workers who had seen safety protocols evolve with time might lapse into old behaviors, as might workers coming from companies or job sites with less strict safety protocols.	Practice and frequent reminders are both critical to creating new safety habits, especially among workers who are new to their trade or new to the general contractor or union that sets the safety standards. Training might include an explanation of how the current job's standards might differ from and even exceed any industry standards, if that is the case. Knowing that many workers will be coming from environments where their behaviors were less disciplined, any environmental cues to observe the current safety protocols will help.
Mindfulness and willpower: Often oversights around safety procedure and especially personal protective equipment (PPE) happen in times of transition between tasks or intense focus on completing a task.	Include mindfulness or other focusing and centering techniques as a training module to encourage focus on the now. Explore ways to build deliberate pauses and reflections into the environment in times of task transition.
Language skills: At all three sites, some workers spoke Spanish with limited English. Although crews figured out how to communicate essential safety information to Spanish speakers, they don't have access to the same depth of information as English speakers.	To the extent possible, provide translated versions of any written material in Spanish or other common languages. Consider offering translations of safety checklists and other dynamic documents. When possible, team people whose English is poor with bilingual workers.
Self-monitoring: When workers focus too intensely on finishing a task or on transitioning rapidly between tasks, they may not monitor their own personal protective equipment (PPE) and safety behaviors closely enough.	Include training and education about mindfulness and the OODA (Observe, Orient, Decide, and Act) loop to encourage explicit assessment of a situation whenever workers transition between tasks or may be too focused on the work to attend to safety. Consider creating physical markers on the job site to prompt PPE checks (e.g., "Every time you cross a yellow line, it's time to check your gear").

CONSTRUCTION SAFETY ISSUES AND INSIGHTS *(continued)*

TYPE OF ISSUE	INSIGHT OR SUGGESTED CHANGE
Beliefs about capabilities: Although no respondents admitted to finding this quality in themselves, several spoke of a “superman attitude” common in the construction trades.	Emotional appeals to the importance of safety, such as wanting workers to be able to take care of their families, spend time with friends, continue their hobbies and passions, etc., can help break the superman syndrome. Emphasize proper safety behaviors among the most senior people (in terms of both tenure and organizational position) so others can see it successfully modeled. Remind more tenured workers that younger workers are looking to them to set an example, and so the well-being of the families of those young workers depends on them too.
Empowerment: Explicit messaging that safety is everyone’s responsibility, coupled with neutral or positive consequences to safety-corrective behaviors, helps individual workers observe safety protocols and point them out to others.	Continue to emphasize that being alert to safety risks and bringing them to people’s attention immediately is a shared responsibility. Offer frequent reminders that workers are empowered to speak up and provide guidance on how they might do so. Point out model behavior.
Outcome expectations: Particularly for workers who have not witnessed or heard stories of serious injuries and fatalities (SIFs), there may be a perception that the worksite is safer than it actually is. Alternatively, some workers express a belief that no matter how safely they behave, they may experience an accident at some point. Both attitudes result in a lack of perceived control.	Training should strike a balance in terms of likely outcomes from unsafe behaviors. Acknowledge that sometimes circumstances are unpredictable, but emphasize that safe behaviors can minimize the damage that unpredictable circumstances can cause.
Action planning: Through training, daily safety huddles, and repetition, most workers have a behavioral routine and plan to keep themselves safe in the face of predictable risks.	Provide steps to take if less common issues arise, so that in an unusual situation workers can execute on an existing plan rather than trying to develop one in the moment. Examples and stories from other worksites can help provide some of this knowledge.

CONSTRUCTION SAFETY ISSUES AND INSIGHTS *(continued)*

TYPE OF ISSUE	INSIGHT OR SUGGESTED CHANGE
Goal priority: Although most workers describe safety as a goal, at times on the worksite other goals such as completing a task efficiently may take momentary precedence.	Consider training modules for management that help them review incentive and reward structures to ensure safety is prioritized and no mixed messages are sent. Look for opportunities to reinforce the priority of safety on the worksite with posters and signs. Make proper safety behavior as easy as possible by ensuring the appropriate equipment is close at hand, teams are prepared for tasks, etc.
Professional role and group identity: Professional pride may encourage safety behaviors, whether it's tradespeople who want to portray their trade positively, or people who believe their employer stands for values that include safety.	This is typically a positive force and should be encouraged and reinforced when possible. Senior leaders should continue to model safety behaviors and discuss safety as a priority. Messaging should emphasize how each trade or company includes safe work as part of it's group identity.
Leadership: Workers are sensitive to the combination of leadership statements about safety and their safety behaviors. Leaders who emphasize and model safety help support a safety culture. Conversely, workers may assume that anything they see a supervisor or foreman do is accepted behavior.	Continue consistent messaging about safety as a priority, and reinforce the verbal messages with safe behaviors. Ensure that leaders on the job site are aware that other workers are looking to them to model correct behavior.
Sanctions/Punishments: All three firms have established sanctions for unsafe behaviors. Workers caught ignoring safety practices can be sent home for the day or several days without pay. Repeat or serious offenses result in being fired from the job. A more minor punishment is being put in charge of a toolbox talk for the group related to the safety offense.	Having strong and clear sanctions for safety violations seems to effectively deter many unsafe behaviors, especially once workers have had an opportunity to witness how sanctions work on a particular job site.

CONSTRUCTION SAFETY ISSUES AND INSIGHTS *(continued)*

TYPE OF ISSUE	INSIGHT OR SUGGESTED CHANGE
Probability of being caught in unsafe behaviors: At all three sites, designated safety officers and supervisors keep an eye open for unsafe behavior and intervene immediately. Workers expect that if they don't behave safely, they might be caught in the act.	Even when all workers are empowered to monitor and enforce safety practices, having designated personnel helps keep people mindful of protocol. Continue having designated safety officers and positively reinforcing people who intervene with safety lapses.
Rewards and incentives: Some firms have a program that provides an incentive to intervene when a colleague behaves unsafely. The "good catch" reporters are eligible for gift card drawings. Some workers mentioned building their personal resumes through trainings and certifications to help them earn better and higher-paying positions.	The incentives programs seem to work well when they exist, but there didn't seem to be a reduced interest in safety where they are absent. If a general contractor has a program like "good catch," it would be a good idea to extend it to subcontractor groups as well. Communicating the value of certifications and trainings for the individual worker as part of the process to enlist them in trainings is also recommended.
Enjoyment: When workers are assigned to tasks they like and are good at, their work quality, speed, and safety tends to be better. Several supervisors mentioned trying to pay attention to worker skills and preferences and match them with those jobs.	To the extent that the task and employee mix on a particular job site permit, it makes sense to try to match workers to their preferred tasks. When workers are taking on tasks that are new or more difficult for them, pairing them with a more experienced worker might help overcome any limitations and provide on-the-job training.
Intergroup conflict: Communication tends to be less successful when it's across work groups (e.g., a general contractor and a sub, two different trade unions) or upwards in a hierarchy. Currently most workers will speak to a person's supervisor rather than speaking to them directly if they observe a minor issue and the transgressor is not in their group. Workers are also sensitive to any differences in safety behaviors they observe between their teams and others, and may feel resentful or judgmental.	Currently, workers rely on foremen or supervisors to communicate to other teams or upwards in the hierarchy. This system seems to work, but it's less efficient than talking directly. Training around general communication skills coupled with frequent messages from leadership that workers are expected to communicate as one team when it comes to safety could help. Another possibility is to restructure job site relationships to cut out some middlemen, such as designating communication leads each day/week who can facilitate safety conversations.

CONSTRUCTION SAFETY ISSUES AND INSIGHTS *(continued)*

TYPE OF ISSUE	INSIGHT OR SUGGESTED CHANGE
Easy access to equipment resources: If the correct equipment for a task is not physically nearby, workers may opt to use the wrong equipment in order to save time. In a minority of cases, workers were sharing some items of personal protective equipment (PPE) (e.g., harnesses) among multiple team members. Not having dedicated PPE can lead to oversights in equipment inspections and failure to properly adjust PPE for oneself.	Include an equipment and materials review as part of the pre-task checklist and ensure that any equipment that may be needed for the task is physically nearby or can be quickly accessed. To the extent possible, each worker should be assigned his own dedicated PPE for the duration of the job.
Person versus environment interaction: Sometimes workers knowingly violate safety protocols because they believe it's the only or best way to physically accomplish a task.	Identify common safety dilemmas and pre-emptively educate workers on preferred safe work methods. Create opportunities for workers to discuss these situations with supervisors and work out acceptable ways to complete the task safely. Ensure that proper equipment is conveniently located near the task site.
Organizational culture: A strong company or union culture helps make safety behavior (and overseeing the safety of others) a normal and unquestioned part of the work process. This can be described as a self-policing safety culture.	Consider offering safety training not just to general contractors, but also to the unions whose members are hired by contractors. Within the training, emphasize how safety is a component of quality and reflects back on the company and the trade. Visible signs of safety behaviors (including stickers on helmets to signify training completions) help reinforce safety as a component of the culture.
Critical incidents: When workers had either witnessed a serious injury or fatality (SIF) directly or heard a compelling story about one, they regarded safety with more urgency.	Incorporate true stories about SIFs into safety training and ongoing safety discussions. These stories should be selected both for emotional impact and for relevance to the upcoming tasks workers will be doing. Collecting these stories will require both science (in selecting relevant ones and tagging them to correspond to workplace tasks and risks) and art (in presenting them so they resonate without seeming cheesy or opportunistic).

Analysis of Specific Safety Issues

The “**Construction Safety Issues and Insights**” chart presents the key safety issues and recommendations from a detailed scientific analysis included in the original report. The basis for the analysis is the idea that changing a person’s behavior requires a shift a person’s capability, opportunity, or motivation to engage in a particular behavior.

Conclusion: Recommendations for Construction Safety Training

The summary below presents some of the key recommendations from the interviews and subsequent analysis with respect to construction safety training. While many of the insights and recommendations from the study go beyond training to management practices and other aspects of safety, the focus here is on what can be addressed through a safety program.

Structure

- **Structure training modules so that workers can review relevant content as they are exposed to new or unfamiliar on-the-job responsibilities.** Making training modules brief, to-the-point, and easy to browse will enable workers and teams to select relevant trainings for each day on the site. This may also include pairing extremely brief refresher training content with longer modules that are completed upon hiring or an annual basis, so that workers about to embark on a task that they haven’t done in some time can quickly remind themselves of key safety issues.
- **Make training as experiential as possible.** Whenever there are opportunities to have workers experience something first-hand, such as a short, controlled fall in a harness, offer them. Consider also including virtual reality scenes of job sites or detailed animations to let people “see” a hazardous job site without having to risk their safety by physically touring it.
- **Consider offering alternative training methods.** In the interviews, some workers loved the idea of videos or virtual reality, while others strongly preferred classroom instruction or one-to-one conversation. Offering a mix of approaches on the same topics will help maximize learning

by allowing for people’s preferences and learning styles. It also might make refresher courses more interesting, if someone who initially learned in one format can take the refresher in another.

- **Offer Spanish translations of materials whenever possible.** Even though most Spanish-speaking workers seem able to follow along reasonably well, their safety risk can be further reduced by offering them direct access to as many safety materials in their own language as possible.

“Training without a safety accountability program is simply safety training. Training attached to metrics where safety performance and behavior is measured—e.g., safety is a significant line item on staff members’ annual performance appraisal—gets results. Let’s face it, what gets measured, gets improved.”

David Marino, MD and US Construction Leader,
Marsh

Content

- **For critical safety lessons, consider crafting short, memorable statements that are repeated across training modules and lessons.** Our study suggests that there is an opportunity to “brand” the most important lessons in training using this approach, so that they are better remembered by workers.
- **Include training on communication methods and styles.** Workers consistently told stories in which stronger communication skills led to more effective discussion of safety risks on the job site. Teaching general communication tactics, such as assertiveness, public speaking, or even key phrases that can effectively communicate urgency, may help workers in this area.
- **Build deliberate pauses into the workflow to evaluate whether all safety procedures are being properly followed.** Many safety lapses appear to happen when people are rapidly transitioning between activities without a natural pause point. For example, respondents reported forgetting to tie off if they were moving back and forth repeatedly between two lifts, but not when they first get on a lift at the beginning of the day. Leverage safety training by encouraging workers to build small pauses into their day during which they scan for safety.
- **Consider exposing some of the consequences of safety lapses.** Respondents who had witnessed serious injuries or fatalities (SIFs) subsequently adopted more serious attitudes about safety. We also heard that videos and images of injuries helped workers realize the importance of safety behaviors. There may be value in incorporating real-life injury stories into the training process to help workers gain this experience-based understanding of why safety is important

The cultural component should not dictate the messaging—union or non-union, it's about people themselves regardless of their affiliation or status. Messages must be personalized as that strongly hits home and resonates.

David Marino, MD and US Construction Leader, Marsh

without having to live through the horrifying experience of witnessing an accident firsthand. Whether it's soliciting true stories from construction veterans, providing animated retellings of accidents, or some other means, including the horror stories and near misses might help workers avoid risky behaviors.

- **Include real stories of serious incidents and fatalities that are relevant to tasks on a job site.** Related to the previous suggestion and based on another recurring theme from the interviews, it seems clear that personal stories from workers are probably the most effective way to underscore the



Marsh

Your Capital, Your Risk, Our Business.

Digitization. Technological advances are transforming how buildings and infrastructure are designed, constructed and used. What is your risk strategy?

www.marsh.com | us.construction@marsh.com

Marsh is one of the Marsh & McLennan Companies, together with Guy Carpenter, Mercer, and Oliver Wyman. Copyright © 2018 Marsh LLC. All rights reserved. 273516047

MARSH & MCLENNAN COMPANIES

consequences of worksite accidents. Many of the workers we interviewed, particularly those with more experience, are already sharing these stories informally. Recording and cataloging these stories to create a searchable video library would allow foremen and supervisors to find and show relevant stories based on the types of risks at any particular job or recent safety oversights from members of the crew.

- ***Make the reasons for safety personal.***

Almost all of the workers we spoke with already consider safety in very personal terms—it's important because it lets them return home to their loved ones, friends, passions, and hobbies. Making this personal motivation more prominent throughout the day may help mitigate some of the safety issues arising from intense focus on getting a job done. Consider including a training component where people write out their reasons for staying safe and select a visual reminder like a photo to keep that reason at the forefront each day on the job site. This reminder can be made into a sticker or laminated to keep nearby.

- ***Consider supervisor-specific safety training.***

Workers at all job sites said that observing behaviors from supervisors that is consistent with safety messaging is key to ensuring safe behavior. Many of the lessons from training are internalized by workers when supervisors reinforce them each day on the worksite, whether it's by modeling proper safety behavior, repeating key safety messages, or appropriately intervening when people make mistakes. A safety training module specifically targeted at the supervisory staff could help reinforce the effectiveness of safety training for workers.

Technology is advancing at a rapid pace. We need to learn to take advantage of it and deliver training in the way people learn best. Gamification is one example. It makes learning fun and can be delivered in the way many employees prefer to engage, via their personal electronic devices.

**Larry Pearlman, SVP Workforce Strategies Practice,
Marsh**



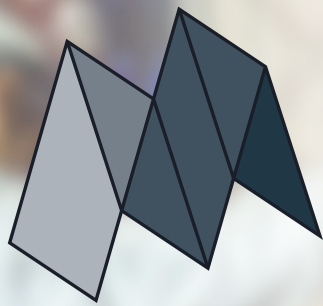
Your Capital, Your Risk, Our Business.

600+ experts. 1 billion+ premiums placed. 350+ open projects.
We know construction risk.

www.marsh.com | us.construction@marsh.com

Marsh is one of the Marsh & McLennan Companies, together with Guy Carpenter, Mercer, and Oliver Wyman. Copyright © 2018 Marsh LLC. All rights reserved. 273516047





MINDFORGE

About MindForge

MindForge is a cloud-based software platform that streamlines how construction contractors manage, train, and engage their workforce. It helps bridge the communication divide between the home office and the front front-line workforce by providing a direct conduit for training, documentation, and information. Our mission is to study behavioral, motivational and systematic issues related to serious injuries and fatalities (SIFs) to build a body of knowledge that will culminate in training and software explicitly designed to help keep workers safe.

Our studies have shown that it's difficult to get information and training to the front line. And that effort is made more difficult because job sites have a mix of self-performers and subcontractors. We believe that by bridging this gap, contractors can effectively transfer critical knowledge, skills, and information, when it's needed, to ultimately reduce SIFs.

Visit mindforge.studio to set up your profile.

