FALL PROTECTION: A SERIOUS CHALLENGE IN COMPLIANCE AND RISK

THIS ARTICLE COMPARES U.S. FALL SAFETY PERFORMANCE WITH THAT OF OTHER NATIONS AND FURTHER CONSIDERS PREVENTION THROUGH DESIGN, THE HIERARCHY OF CONTROLS, AND ACTIVE AND PASSIVE MEANS TO PREVENTING FALLS, TOPICS THAT WERE PREVIOUSLY INTRODUCED IN THE JULY/AUGUST 2021 ISSUE OF THE *SA MAGAZINE*.

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According to the U.S. Bureau of Labor Statistics, falls are one of the leading causes of workplace fatalities. And, fall protection has been at the top of the Occupational Safety and Health Administration (OSHA) list of Top 10 Most Frequently Cited Standards for the past 10 years. While there have been significant updates to fall protection regulations and standards, and continual updates to fall protection equipment, the number of fatalities continue to increase in the United States. So, the logical question is: Why do falls continue to occur at this rate and how can organizations reduce their fall risk?

First, it's clear that there is a better way to address fall hazards. Statistics from the U.S. compared to those from similar countries, such as the U.K. and Australia, illustrate the discrepancies in a glaring fashion. These countries have demonstrated that decreasing fall fatalities is possible. By embracing successful tactics from around the world, hundreds of workers in the U.S. could be saved from fatalities every year—not to mention workers affected by serious injuries with days away from work.

Comparing the U.S. with other countries

The chart below highlights the difference in key statistics between the U.S., the U.K., and Australia. While the gross domestic product (GDP) and new construction figures show that the U.S. is producing more, the increase in production is not nearly comparative to the dramatic difference in workplace fatalities (see Figure 1, the numbers in red). These numbers illustrate that there is an urgent problem in the U.S. that needs to be addressed.

What are some possible reasons for the disparity between the outcomes? Three areas may provide the greatest opportunity for improvement in the U.S.

1. Emphasize Prevention through Design

While it is easier to see fall hazards in an existing structure, safety practitioners around the world have found that it is safer and more cost effective to implement fall protection before structures or processes are built. This concept—referred to as Prevention through Design (PtD) in the U.S., led by the National Institute for Occupational Safety and Health (NIOSH)—helps to ensure that safety measures are evaluated

Based on 2016 data	US	UK	US v UK	AUS	US v AUS
GDP	18.6 tn USD	2.62 tn USD	7.1x	1.21 tn USD	15.4x
New construction	1.23 tn USD	.14 tn USD	8.8x	1.23 tn USD	
Total workplace fatalities	5,190	137	37.9x	181	28.7x
Construction fatalities	991	30	33x		
Total fall fatalities	849	25	34x	25	34x

Figure 1

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and implemented during the programming and design phases of a project. Applying PtD has proven to decrease risk and save money. Risk is minimized by eliminating hazards before they're created and applying solutions at a higher level in the Hierarchy of Controls.

Beyond the risk reduction benefits, incorporating safety at this stage saves money because designers don't even need to erase lines on their drawings – the safety aspects are simply programmed into the design. Costs are reduced in two ways: in applying the initial solution, and by minimizing injuries, reducing claims, and decreasing lost production time. These savings generally continue for the life of the structure or process.

Organizations who have applied PtD programs have proven meaningful results: life-threatening work hazards are reduced, productivity is improved, and costs are lowered. Despite all these positives, PtD has been slow to gain momentum in the U.S. While an American National Standards Institute (ANSI)/ American Society for Safety Professionals (ASSP) standard for this concept exists - ANSI/ ASSP Z590.3-2011(R2016) - the other countries place a much more robust emphasis on PtD through the U.K. Construction (Design and Management) 2015 regulation and the Australia Model Code of Practice.

Utilizing a PtD program ensures that safety is considered early and often throughout the design and construction process. Ideally, this becomes part of an organization's culture, and all parties embrace the idea of addressing safety throughout a project's continuum. Simply put, safety is no longer an afterthought but instead becomes a design criterion that is often more economically and effectively implemented, as it is a more standard, or passive, factor in the design of the building (see Figure 2).

Figure 2

2. Apply the Hierarchy of Controls

To compare fall hazard abatement options, many regulations and standards refer to a concept called the "Hierarchy of Controls." In this hierarchy, the potential control methods are ranked in order of increasing residual risk (see Figure 3). By following the Hierarchy of Controls in selecting an abatement method, the most effective feasible solution may be implemented.

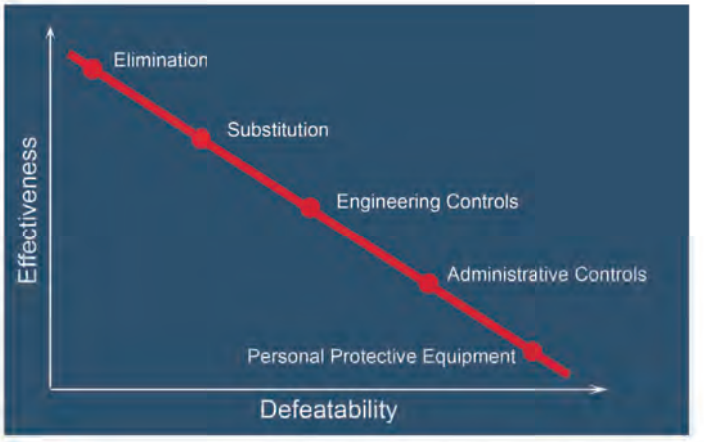

Figure 3

Some fall protection control methods are considered passive, while others are active. After elimination, engineering controls, which are passive systems, are the most effective since they do not require any specific participation from the worker to function. Active systems, on the other hand, require some—and in various cases, significant—participation by the worker, ranging from staying away from hazardous areas to a lengthy and varied list, including conducting equipment inspections and completing attachments for each work activity. Ultimately, active solutions should only be put into place when passive methods to control fall hazards are deemed impractical.

While the Hierarchy of Controls is a well-known and respected method of comparison, the way this concept is presented in regulations is clearly different. In some cases, such as the U.K., regulations make it abundantly clear that the use of personal protective equipment (PPE) is typically not and will never be as safe as other means of protection that are higher on the hierarchy. In other cases, such as the U.S., all methods are presented as equal, and organizations are given the regulatory flexibility to choose their preferred method—without requiring any justification for doing so.

Building on this concept, in well-developed regulatory areas—including the U.K. and much of Europe, Australia, and Singapore—the designer and employer are held accountable to design and provide the safest practical system while following the Hierarchy of Controls. The lower number of deaths and serious injuries as a result would seem to justify this approach. As organizations, it makes sense to encourage and promote a change toward solutions that provide greater risk reduction in a proactive fashion, before being forced to adapt through regulation.

To support this movement, it could be helpful to investigate how the different methods of protecting workers at height statistically compare to one another and how this can be an indicator of fatalities and serious injuries. This kind of quantitative analysis might provide, for example, clear data that countries with an increased reliance on harness-based methods to protect workers have more fatalities and serious injuries than those with a greater reliance on green-tag scaffolding.

So, while PPE-based solutions are considered the least effective and most "defeatable" solution in the Hierarchy of Controls, their prevalence in the market and ease of procurement often lead organizations to overuse them—giving both employers and workers a false sense of security. This approach, while appearing simple and relatively inexpensive, can in fact, lead to very costly consequences.

3. Strengthen Enforcement Activities

All organizations need to be vigilant about managing their risk—including both safety and financial concerns. Many risk managers focus on balancing the need to reduce risk with the financial impacts. In some U.S. cases., organizations may passively conclude that they are safe if they lack OSHA citations and fall incidents. However, this lack of incidents may be due to luck, rather than an effective program, since falls are rare but catastrophic.

In the U.S., only companies are cited, and OSHA fines are much lower, compared to other countries, where both employers and individuals can be penalized with significantly higher fines and potential prison sentences. For example, the U.K. introduced new sentencing guidelines for health and safety violations in 2016, and now the average cost of fines is over US$1.25 million. In comparison, even willful or repeated OSHA violations only come with a penalty of $136,532 per violation.

According to Australia's Department of Mines, Industry Regulation and Safety, the Western Australian Government passed legislation to increase workplace safety and health offense penalties in 2018. With this updated legislation, Level 4 penalties increase from AU$500,000 to a maximum AU$2.7 million and Level 1 penalties increase from AU$50,000 to a AU$450,000 maximum. The changes also increase the maximum term of imprisonment from two years to five years.

While the exact motivation for addressing safety concerns can vary greatly, higher penalties—like those introduced in other countries—will likely drive organizations to address safety more proactively—to reduce their overall risk. If U.S. employers know that a safety violation may come with a $1 million price tag, they have significant motivation to avoid that risk. In jurisdictions where the actions of designers, owners, and supervisors are personally held responsible for their actions, this tends to be a galvanizing force to perform their jobs well.

Next Step

As the data shows, fatalities and citations in the U.S. are trending in the wrong direction. Unfortunately, regulations and enforcement policies are slower to change, so each organization must develop a plan to improve safety and reduce risk for work at height.

Here are some recommended ways to apply best practices to minimize fall hazard risk:

- Identify areas where you can better engage workers to address falls from heights.
  - What additional training is needed? How can training drive meaningful engagement?
  - Do you regularly seek input from workers on suggestions to improve safety?
  - Is your organization's culture outwardly safety-conscious, or secretly (or not-so-secretly) accepting of risk?
- Determine methods you can employ to increase safety and reduce risk for workers at height.
  - Are you guilty of being "harness centric" in your planning and design? If so, how have you looked at other safer and more practical forms of access?
  - How are you using the Hierarchy of Controls to evaluate fall protection solutions?
  - Have you considered a Prevention through Design program?

About the Authors

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