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WELCOME TO THE ESG EVOLUTION

*A look at the impact,
challenges and rewards
of the developing
relationship between
EHS and ESG. P. 8*



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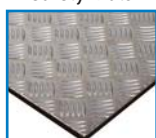
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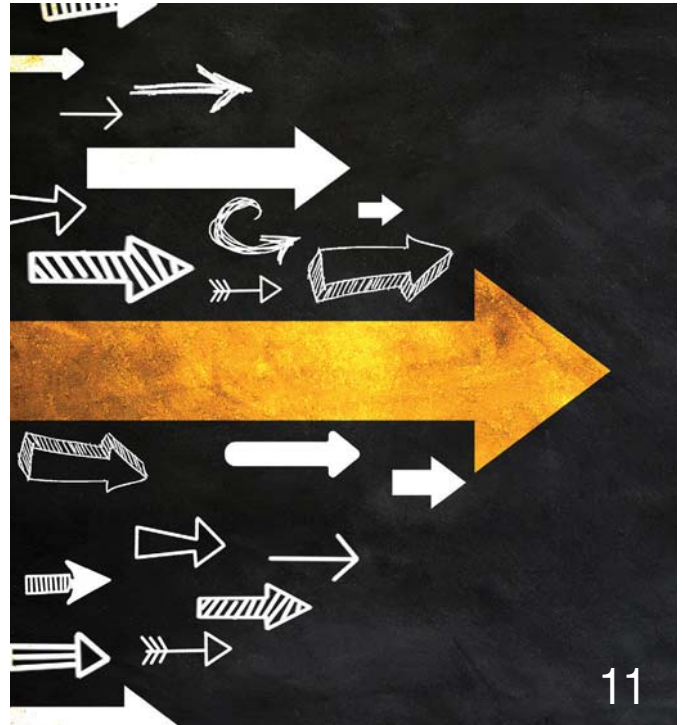
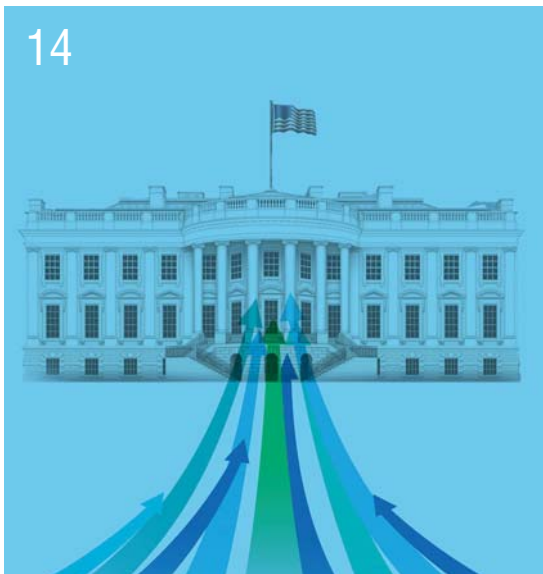
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Mark These Events on Your Calendar Now!

ITEM: We're excited to announce that this year's **Safety Leadership Conference (SLC)** will be held September 18-20 at the Orlando World Center Marriott in Orlando, Florida! If you haven't been to SLC before, you'll definitely want to join us as we host safety experts and professionals speaking on a wide range of topics, all dedicated to achieving world-class safety excellence. There will be keynote presentations; focused safety talks on various compelling topics; exhibits of the latest safety technology and solutions; hosted facility tours off-site of safety-in-action; and the presentation of the America's Safest Companies awards for 2023. Go to safetyleadershipconference.com for more details.

ITEM: Speaking of the SLC, do you have a story of your own to tell? In our Call for Speakers, we're seeking EHS professionals with practical experience in managing and leading safety operations at their companies or organizations. In particular, we're looking for

safety leaders who are willing to share best practices in keeping their workforces safe, as well as lessons learned in what works and what doesn't. We have five different session tracks this year: Risk Management, Regulatory Compliance, The ROI of Safety, Safety Technology, and Training & Engagement. You can submit a proposal at safetyleadershipconference.com/2023/call-for-speakers.

ITEM: And here's some more big news about SLC: This year, we're co-locating with the Safety+ Symposium hosted by the Voluntary Protection Programs Participants' Association (VPPPA). Like SLC, the Safety+ Symposium is dedicated to advancing the occupational safety and health profession. Having two prestigious safety events at a world-class resort in Orlando will offer EHS professionals a wealth of insights, information, solutions, and best practices that will help them do their jobs better and keep their workplaces safer. Learn more at safety.vpppa.org.

For more details, go to: ehstoday.com.

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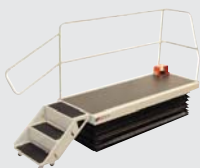
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Dave
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Editor-in-Chief



Is Time Running Out on Workplace Safety?

Safer workplaces seem to be more of a mirage than a reality.

How safe is the workplace these days? We don't really know, since given the nature of the federal government's data-crunching capabilities, it'll take another year for us to get the statistics on workplace incidents in 2022. But we do finally know how safe the workplace was at U.S.-based employers in 2021, but there's not much good news in the numbers:

- Nonfatal injuries and illnesses were down in 2021 by 1.8% over 2020.
- Fatal work injuries were up by 8.9% year-over-year.
- The impact of COVID on the workplace in 2020-2021 was significant but exactly how significant is not yet known.

In 2021, 5,190 people died on the job, up from 4,764 in 2020, according to the U.S. Bureau of Labor Statistics (BLS). Also, while total workplace injuries and illnesses dropped somewhat year-over-year, the number of injuries actually increased by 6.3% (2.2 million injury cases in 2021 vs. 2.1 million in 2020). Offsetting the increase in injuries is that illnesses—in particular, respiratory illnesses—dropped by 32.9%.

Of course, the most obvious reason for all of this is COVID-19. In 2020, people stopped going into the office or the factory or schools or stores or anywhere else for many months, but in 2021 “work from home” protocols shifted to “return to work,” which meant there were more people back at the factories, facilities and offices where they could potentially be injured. And by 2021, vaccinations, masks and social distancing had greatly reduced COVID's impact, resulting in far fewer infections and respiratory illnesses on the job.

As COVID became less of a workplace issue, the old familiar hazards unfortunately came back to bedevil workers. Truck and delivery drivers had the most fatal accidents in 2021, as fatalities increased by 16.3% over 2020. In fact, transportation incidents were the most frequent type of fatal event, according to the BLS, accounting for nearly four out of 10 (38.2%) work-related deaths, or 1,982. Construction and extraction occupations were the second-most deadly occupation in terms of numbers of fatalities. Falls, slips and trips accounted for 850 workplace deaths.

However, the BLS also measures something it calls the fatal occupational injury rate, which is the number of fatalities per 100,000 full-time equivalent workers. On that basis, the most dangerous occupation in the U.S. actually isn't truck drivers (which had a rate of 28.8), but rather logging workers (with

a rate of 82.2). Fishing and hunting workers were the second-most dangerous occupation, based on a fatality rate of 75.2.

In any event, the nearly 9% increase in workplace fatalities “serves as a call to action for OSHA, employers and other stakeholders to redouble our collective efforts to make our nation's workplaces safer,” said Doug Parker, the U.S. Labor Department's assistant secretary for occupational safety and health. Parker in particular pointed to a disproportionately higher number of fatalities among Black and Latino workers as “deeply troubling facts.” While the overall fatal occupational injury rate of 3.6 fatalities per 100,000 full-time equivalent workers is the highest since 2016, the rate for Latino workers is 4.5 and for Black workers it's 12.6—an all-time high.

“It's so important to understand how societal issues such as racism and systemic inequities can undermine workplace safety and disenfranchise workers,” noted Christine Sullivan, president of the American Society of Safety Professionals (ASSP). “Organizational improvement occurs when diversity, equity and inclusion are embedded components of a business strategy.”

“The [BLS] data indicate workplaces have become less safe, and it is heartbreaking,” added Lorraine Martin, president and CEO of the National Safety Council (NSC). Both Martin and Sullivan noted that with the availability of new safety technologies and various health-focused initiatives, employers have numerous ways to keep their workers out of harm's way. But the evidence doesn't indicate things are getting any better; if anything, they seem to be getting worse. And the real question is: why? We'll be devoting the next year's worth of articles and commentaries on trying to answer that question.

One last note: In 2020, according to the BLS, a worker died every 111 minutes from a work-related injury. In 2021, the frequency increased by an alarming 10 minutes, with a worker dying every 101 minutes from an occupational injury. The clock is most assuredly ticking on making the workplace safer, and time is not on our side. **EHS**

Send an e-mail with your thoughts to dblanchard@endeavorb2b.com.

9% Increase in Work Fatalities in 2021 is Call to Action, says Head of OSHA

“Each of these deaths cruelly impacts these workers’ families, friends, co-workers and communities. They are clear reminders of the important work that must be done,” said Doug Parker.



The Bureau of Labor Statistics released the 2021 Census of Fatal Occupational Injuries on Dec. 16 2022, and the news was not good.

“Today’s announcement by the Bureau of Labor Statistics of a one-year increase of nearly 9% in fatal work injuries serves as a call to action for OSHA, employers and other stakeholders to redouble our collective efforts to make our nation’s workplaces safer,” said Doug Parker, the U.S. Department of Labor’s Assistant Secretary for Occupational Safety and Health, in a statement.

“In 2021, 5,190 workers suffered fatal work injuries, equating to one worker death in the U.S. every 101 minutes, including 653 Black workers, whose fatality rate hit an all-time high. Black and Latino workers also had fatality rates disproportionately higher than their co-workers in 2021. These are deeply troubling facts,” Parker added.

The fatal work injury rate was 3.6 fatalities per 100,000 full-time equivalent (FTE) workers, up from 3.4 per 100,000 FTE in 2020 and up from the 2019 pre-pandemic rate of 3.5. These data are from the Census of Fatal Occupational Injuries (CFOI).

Key findings from the 2021 Census of Fatal Occupational Injuries are as follows:

- The 3.6 fatal occupational injury rate in 2021 represents the highest annual rate since 2016.
- The share of Black or African American workers fatally injured on the job reached an all-time high in 2021, increasing from 11.4% of total fatalities in 2020 to 12.6% of total fatalities in 2021. Deaths for this group climbed to 653 in 2021 from 541 in 2020, a 20.7% increase. The fatality rate for this group increased from 3.5 in 2020 to 4.0 per 100,000 FTE workers in 2021.
- Suicides continued to trend down, decreasing to 236 in 2021 from 259 in 2020, an 8.9% decrease.
- Workers in transportation and material moving occupations experienced a series high of 1,523 fatal work injuries in 2021 and represent the occupational group with the highest number of fatalities. This is an increase of 18.8% from 2020.
- Transportation incidents remained the most frequent type of fatal event in 2021 with 1,982 fatal injuries, an increase of 11.5% from 2020. This major category accounted for 38.2% of all work-related fatalities for 2021.

Fatal event or exposure

- Despite experiencing an increase from 2020 to 2021, transportation incidents are still down 6.6% from 2019 when there were 2,122 fatalities.
- Fatalities due to violence and other injuries by persons or animals increased to 761 fatalities in 2021 from

705 fatalities in 2020 (7.9%). The largest subcategory, intentional injuries by person, increased 10.3% to 718 in 2021.

- Exposure to harmful substances or environments led to 798 worker fatalities in 2021, the highest figure since the series began in 2011. This major event category experienced the largest increase in fatalities in 2021, increasing 18.8% from 2020. Unintentional overdose from nonmedical use of drugs or alcohol accounted for 58.1% of these fatalities (464 deaths), up from 57.7% of this category’s total in 2020.
- Work-related fatalities due to falls, slips and trips increased 5.6% in 2021, from 805 fatalities in 2020 to 850 in 2021. Falls, slips, and trips in construction and extraction occupations accounted for 370 of these fatalities in 2021. This represents an increase of 7.2% from 2020 when there were 345 fatalities. Despite the increase, this is still down 9.3% from 2019 when construction and extraction occupations experienced 408 fatalities due to this event.

“Each of these deaths cruelly impacts these workers’ families, friends, co-workers and communities,” Parker, said in a statement. “They are clear reminders of the important work that must be done. OSHA and its thousands of professionals across the nation are determined to enforce the law while working with employers, workers, labor unions, trade associations and other stakeholders to ensure that every worker in the U.S. ends their workday safely.” —EHS Today staff

How Much Is Poor Mental Health Costing Your Company?

Gallup poll estimates companies are paying a high cost in terms of absences due to poor mental health.



ELENA ELISSEVA | DREAMSTIME

One way to measure how poor mental health is affecting companies is to look at unplanned absences. A recent Gallup poll found that 19% of workers rated their mental health as poor. Those workers will have nearly 12 days of unplanned absences compared to 2.5 days for workers not reporting mental health issues.

The cost of that missed work is \$47.6 billion annually in lost productivity. The cost of a missed day of work is estimated to be \$340 per day for full-time workers, according to Gallup, which conducted the poll from August 23-Sept. 7, 2022.

Looking at the demographics of this, both women and young workers report higher rates of struggling with mental health issues.

Women (23%) are more likely to report poor or fair mental health than men (15%). Nearly one-third of young workers under the age of 30 (31%) do the same compared with 11% of those aged 50-64 and 9% of those aged 65 and over.

Consequently, working women under the age of 30 carry the greatest burden of fair or poor mental health (36%) across all age-by-gender subgroups.

Is work the cause of poor mental health? Partially, according to the poll. The survey found that 40% of workers say their job has an extremely negative (7%) or somewhat negative (33%) impact on their mental health, compared with three out of 10 who report an extremely positive (7%) or somewhat positive (23%) impact.

Companies have been trying to address this issue through workplace programs, but it seems the message hasn't yet reached many employees. A majority (57%) said they were unable to confirm the existence of easily accessible mental health support services in their workplace. Nearly one-fourth (24%) report the absence of these services, and another 33% are unaware if they are even available through their employer.

At least 50% of employees in 11 of the 16 reportable industries either report the absence of easily accessible mental health support services in their workplace or are unaware if they exist, including 75% of employees in construction. —EHS Today staff

Impact of Worker Mental Health on Unplanned Missed Workdays Annually

Overall, would you say your mental health is excellent, very good, good, fair or poor?
In the last month, how many workdays have you missed due to poor mental health?*

■ % Excellent ■ % Very good ■ % Good ■ % Fair ■ % Poor



*Controlling for age, gender, household income, education, race, ethnicity, marital status and region

**Extrapolated to a 12-month period

GALLUP PANEL, AUG. 23-SEPT. 7, 2022

GALLUP

What Employers can do to Improve Employees' Health

The majority of employee health outcomes are determined by social and environmental conditions at work and home, but there are steps employers can take.

Helping employees keep healthy is a multifaceted effort. And understanding the variety of factors involved can assist employers in devising solutions to address them.

One aspect to consider is that the majority of health outcomes are determined by employee behaviors and the social and environmental conditions in which they live and work, according to a recent article by Cigna.

These social determinants of health (SDOH) can become obstacles to achieving and maintaining good health. And one of

food trucks can help facilitate access to nutritious, affordable meals to address food insecurity. For remote workers, consider subsidizing community-supported agriculture (CSA) and meal-kit delivery subscriptions.

- Offer smoking cessation programs and treatment for substance use disorders as part of your health benefits. Consider adding a medical leave policy to support employee participation.

Support social and economic needs among your workforce (e.g., isolation, education and financial issues)

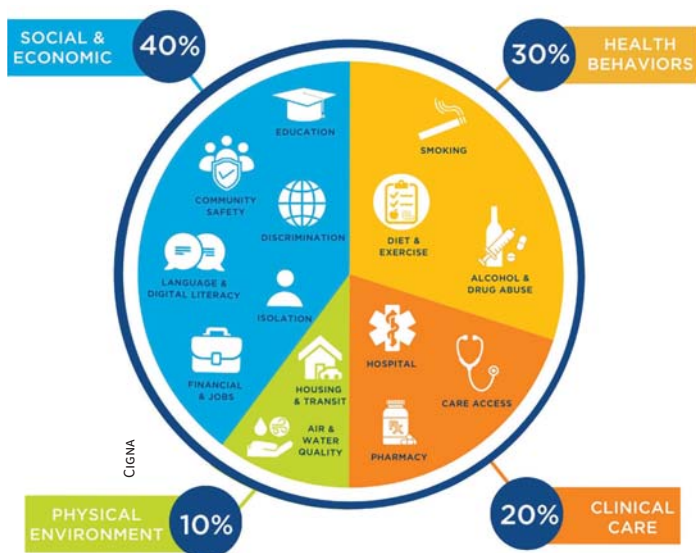
- Arrange team building events and social gatherings to foster connections among your employees. Taking part in local volunteer programs can help build community engagement.
- Set up career training or tuition reimbursement programs with local colleges and training centers. On-line training classes are especially convenient for those with caregiving responsibilities and limited transportation.
- Provide financial counseling opportunities with a local financial advisor. Many employee assistance programs (EAPs) include such services at a discount, and these programs may also arrange financial planning seminars and lunch-and-learns for your employees.
- Connect employees to local community resources and social services via an EAP or FindHelp.org.

Address workforce challenges in your community (e.g., housing and transportation insecurity)

- Consider an employer-assisted housing program, if possible. Provide employees with legal assistance and/or an advocate on their behalf when bad housing conditions or property management problems arise.
- Allow flexibility for fully remote or hybrid working arrangements to address workers' transportation issues. Establish a ride-sharing/carpooling program or offer subsidies for mass transit to enable lower-income employees to get to work as well as medical and social services appointments.
- Partner with your health plan, local care systems and advocacy groups to see how you can support SDOH efforts in the areas where your employees live.

Continue to enable employee access to clinical care

- Maintain continuous education on the health care benefit so employees are aware of their available options. This allows employees to determine for themselves the type of plan and level of coverage that will best serve them and their families. It also ensures they know how to access services and resources.
- Offer mental health coverage. Enabling employees to maintain good mental health is vital for their overall health, which can help them better cope with everyday stressors and work more productively.
- Set up workplace access to health care services for preventive care screenings and minor care needs, such as an on-site clinic, a health coach on staff, or mobile dentistry and mammography services. If this is not feasible, offering adequate sick leave and flex time options can enable employees to attend to their needs. —EHS Today staff



the results of this, according to recent Cigna claims data, is that people who experience negative impacts of SDOH are:

- 1.9 times more likely to have an avoidable emergency room (ER) visit
- 1.6 times more likely to have an avoidable inpatient visit.

To help employers mitigate these issues, Cigna recommends the following:

Encourage healthy employee behaviors

- Set up fitness classes or well-being activities (on-site or virtual) that allow participation on company time or offer employee reimbursement for local gym memberships.
- Offer healthy food alternatives in vending machines and at office meetings. On-site cafeterias and healthy

Adrienne
Selko

Senior Editor



Is This the Year We Learn How to Teach Gen Z?

Whatever ideas one might have about Gen Z (those born between 1997-2012), exhaustive research done by Roberta Katz, senior researcher at Stanford University's Center for Advanced Study in the Behavior Sciences, has uncovered interesting traits that safety professionals should be aware of.

What she finds most surprising, as noted in an interview with *Stanford News*, is that when asked what type of communication Gen Z prefers, nearly all respondents answered that they prefer "in person."

In fact, a previous study from talent recruiting firm Bridgeworks found that 40% of Gen Zers want daily interactions with their boss and think they've done something wrong if they don't

have these interactions. I would venture to guess that older generations would think something is wrong if their bosses want to talk to them that much.

This face-to-face preference might be derived from the more collaborative way Gen Z employees work, which presents an advantage for savvy safety managers, who tend to be older than their employees and are more

comfortable with in-person interactions. Katz offers this advice: "Both the older and younger colleagues can learn from the other, in each case by listening with more respect, appreciation and trust. The older colleague can learn some helpful new ways of getting a job done, while the younger colleague may learn good reasons for why things have long been done in a certain way."

We can see examples of this two-way learning process as emerging technology, such as video and augmented reality (AR), is being used by safety leaders to bridge the generation gap to enhance training efficiency. I have spoken with several employers who have found that by using these techniques, older colleagues feel appreciated that their knowledge is being codified this way, while younger colleagues appreciate the opportunity to learn through video.

Experience-based learning, as opposed to classroom learning, is the route preferred by Gen Zers. In a study conducted by bookseller Barnes and Noble, 51% of Gen Z respondents said they learn best by working through examples. Seeing things

done was the preferred learning method for 38%, while only 12% chose listening to a lecture.

And learning on the job is important to Gen Zers as well. A study done by ECMC Group of 5,000 high school students, conducted between February 2020 and January 2022, found that students are moving away from the traditional route of waiting to work following the completion of a four-year college degree. They are often opting to complete training that requires less time or on-the-job training. And when choosing an employer, they will often opt for one that offers reimbursement for four-year degrees.

Here are some specific findings of that survey:

- Nearly one-third of teens prefer that their post-high school education lasts two years or less.
- More than half of teens are open to something other than a four-year college, and nearly half believe they can achieve success with education attained in three years or less.
- Most teens prefer learning hands-on skills either in a lab/classroom or through on-the-job experiences.
- Most teens understand the importance of gaining marketable skills and learning throughout their lifetime.

This group not only understands the necessity of lifetime learning but uses it as criteria when choosing employers, according to research from Robert Half. "Gen Z professionals are highly motivated by development and learning opportunities," the Robert Half study concludes. The survey found that the top three reasons Gen Zers chose an employer are:

1. Career development opportunities.
2. A manager they can learn from.
3. Professional development and training.

Technology of course is how this generation prefers to gain access to knowledge. In a survey by Kahoot, when asked what training tools they wanted at their workplace, 65% of Gen Zers said mobile apps, 48% said online learning tools, 39% said videos, and 34% preferred social media.

This generation's emphasis on learning might prove, once and for all, how truly smart they are. And it's good news for safety professionals looking for the best ways to ensure their workers are actively engaged in the training process. **EHS**

Adrienne Selko

Send an e-mail with your thoughts to aselko@endeavorb2b.com.



Welcome to the **ESG Evolution**

*A look at the impact, challenges and
rewards of the developing relationship
between EHS and ESG.*

By Sandy Smith

MO. ZAKIR MAHMUD | DREAMSTIME;
ROMOLO TAVANI | DREAMSTIME.

The world, and the world of work, has changed a lot over the last three years. In many ways, both have become more unpredictable, with supply chain disruptions, economic concerns and geopolitical volatility becoming part of our daily lives. Yet through it all, frontline workers have been there to keep the machinery of the global economic engine moving. As a result, it's never been more important to keep them safe while improving the way they work and the impact that work has on the planet.

Increasingly, corporate leaders are taking note of the relationship between environment, health and safety (EHS) and environmental, social and governance (ESG). EHS and ESG are moving from critical to strategic priorities for every organization, not only for regulatory compliance and worker safety, but also as part of the bigger business picture.

The vast majority (86%) of the 450 EHS professionals recently surveyed by Intelix as part of the research report “Big Ambitions. Complex Data. Limited Visibility,” admitted that their organizations must improve health and safety performance, or they risk losing skilled workers to companies that have a better health and safety culture. Some 82% believe that if their organization does not improve its ESG performance, it will negatively impact brand and reputation in the market.

Not surprisingly, EHS and ESG professionals say that gathering and reporting data is their organizations' most likely health and safety-related challenge, followed by implementing a culture of safety and incident prevention. Nearly all (97%) of those surveyed reported data- and compliance-related challenges when it comes to ESG, including measuring performance improvement metrics and ROI; insufficient data collection, calculation and reporting; and regulatory compliance (see **Figure 1** and **Figure 2** on p.10).

CHANGING WORK AND CHANGING FOCUS

Research published in 2022 by the National Safety Council (NSC) suggests that while EHS is increasingly being asked to engage in ESG initiatives, it is not yet fully entrenched in ESG strategy development. During a recent webinar, John Dony, vice president of workplace strategy for the NSC, shared that 85% of 750 EHS and ESG professionals the council surveyed said EHS has some level of involvement in the execution of ESG strategies.

But the NSC research also reveals only about a quarter of those respondents believe EHS is a key partner and stakeholder in ESG. More often, EHS has a much narrower ESG focus, particularly around execution of employee safety and health, plus in areas that include the social pillar of ESG and human capital.

Three-quarters of those surveyed by the NSC say they currently include safety and health metrics in their ESG metrics, but Dony says these are commonly tracked lagging metrics, such as total recordable incident rates and lost-time incidents. He describes these metrics as low-hanging fruit and not good representations of actual safety capacity or performance.

“If the goal is to understand actual safety ability, capacity and presence of defenses, then we should probably be looking at different metrics,” he says. “We know that there are better ways to visualize and understand.”

Scott Gaddis, vice president and global practice leader for health and safety at Intelix Technologies, says EHS professionals will play an increasingly important role in ESG's future. Gaddis believes ESG will become a public report card, used to compare companies and competitors against each other. Similarly, EHS data will be used by investors to evaluate the ESG performance of companies, he says. That means EHS professionals will take on increasing responsibility for ESG and business success.

“For the EHS professional, EHS and ESG inevitably will cross paths,” Gaddis says. “While ESG serves as a framework for investors and others interested in evaluating a company, EHS is a bit different, as it is a business function residing inside of an organization to maintain compliance and eliminate or mitigate loss potential. With that said, it's not a hard stretch to understand that EHS is heavily embedded within the ESG reporting system, especially in the environment and social pillars.”

For the environment pillar, both the EHS and ESG functions seek to control impacts on the environment, energy, people and the public in the communities where work occurs. Gaddis says they find occupational health and safety metrics landing in ESG reporting under the social pillar but managed as an output from programs directed by internal EHS teams. Employee injury and illness, product safety, community protections and labor are but a few possible data collection points for the EHS professional to consider programming to better controls, Gaddis says.

“We're not going to wiggle away from this,” Gaddis says. “We're part of that social pillar within ESG, so we've got a lot of work there to do.” In addition to providing data for ESG reporting, Gaddis says EHS professionals need to continue positioning themselves as ESG leaders within their organizations.

“It's evident that the role of an EHS professional will change to include some ESG responsibilities. However, it's also important to understand that it's bigger than EHS, meaning that ESG will need to pull data, intelligence and resources from across an entire organization, including HR, operations, maintenance, training development, supply chain and other functional support organizations,” he adds.

THE DIFFICULTY OF DATA

The fact that both EHS and ESG are data-intensive is perceived as both an opportunity and a challenge, which explains why data collection makes it to the top of the list of challenges for both EHS and ESG professionals. While there is a rich supply of data to work with, such huge amounts of it can be difficult to manage, even for sophisticated organizations. This is particularly true if those organizations utilize multiple technologies, have siloed information or do not provide their teams with access to the same applications or software.

The ability to collect data and be assured it is of high quality is essential to the success of both EHS and ESG reporting and compliance success. Traditional and ad hoc ways of collecting ESG and EHS data are not enough, says Virginia Hoekenga, deputy director for the National Association for Environmental Managers (NAEM). Hoekenga believes companies must move from spreadsheets and paper approaches to systemic and holistic management of ESG and EHS using information technology and digital systems.

The Six Most-Common ESG Challenges in North America



Figure 1

The EHS and ESG professionals surveyed for the Intelix report say they are challenged in their efforts to gather EHS and ESG data and admit that poor data quality hinders their ability to improve EHS and ESG performance. In fact, only four in 10 respondents say they are confident in the accuracy of their ESG data.

Hoekenga believes a big part of that problem may be a lack of specifically designed technologies and applications for ESG data monitoring, management and reporting.

“We’ve got to arrive at a place where companies have data management,” she says. “Organizations need to track and have a multidimensional view of [ESG] performance. We still see a lot of data silos that slow down that ability to get a multidimensional view. A big push in our conversation about maturing ESG management is having the ability to analyze and compare data from different systems...and providing better systems integration, such as with enterprise management and human resources.”

PULLING IT ALL TOGETHER

Increasingly, health and safety professionals are using technology to meet their core objectives. Meanwhile, they’re battling to make disparate systems work seamlessly together. This is making it difficult for them to get a clear picture of what’s really happening across their organizations. It’s also making it more challenging to react to incidents in a timely manner or track and act on near misses.

The picture is similar in ESG. Many businesses are using software and technology to help meet ambitious targets.

The Top Six Most Common Challenges in Health and Safety

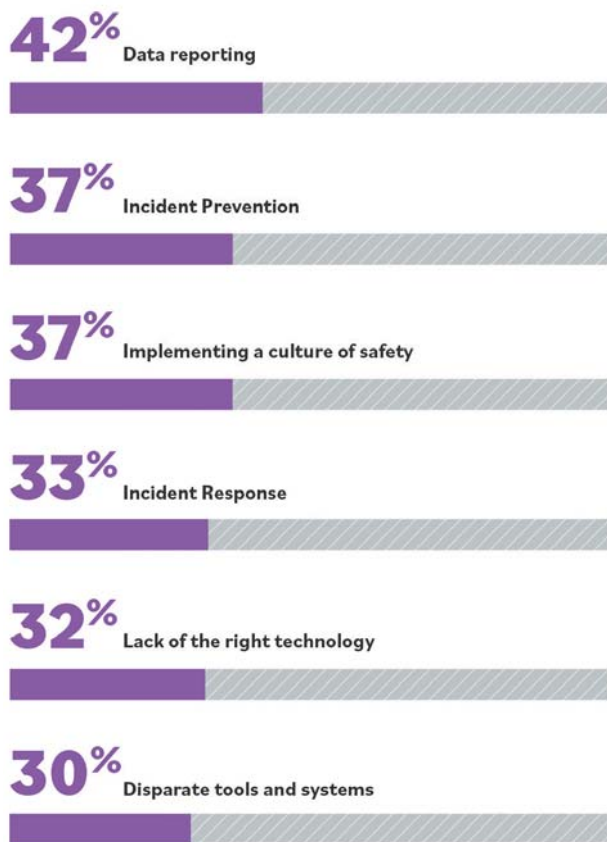


Figure 2

However, just as many are struggling to link these systems together to provide the information and insight they need to make the progress both they and their customers demand.

EHS and ESG professionals can take one of two approaches, says Trevor Bronson, director of portfolio strategy at Intelix. Bronson formerly worked in EHS/sustainability engineering at automaker Tesla and as an EHSS systems analyst for paint company Benjamin Moore & Co.

“The first approach is to implement a holistic ESG management tool that can be used to collect, aggregate, organize, report and improve all types of ESG data [regardless of] whether the data is sourced from EHS, from engineering or from the C-suite,” he says. “The second is to let these departments manage their relationships with broader ESG goals separately but ensure the different tools being used all play nicely together and can efficiently get data where it needs to go.”

The bottom line, Bronson says, is this: ESG data—whether it is generated by EHS practitioners, the engineering department, sustainability professionals or others—is an incredibly broad yet increasingly scrutinized data set. “Information needs to be timely, accurate, cross-departmental and organized.” **EHS**

Sandy Smith is the director of content and brand for Intelix Technologies and the former content director for EHS Today.



Furthering the ESG Conversation

Now that you have an environmental, social and governance (ESG) program, it's important to understand the concepts of materiality and double materiality—and why they matter.

By Phil Molé

Over the past few years, there has been growing demand from business stakeholders to integrate environmental, social and governance (ESG) principles into their broader corporate strategies, in part due to mounting evidence that ESG maturity helps companies improve their financial importance and avoid business volatility.

As ESG conversations have continued, more businesses have started to pivot from traditional EHS management to ESG management. Safety management, which is part of the “S” (for “Social”) in ESG, is an essential part of establishing and maintaining ESG maturity.

EHS professionals managing workplace safety initiatives have important roles to play in that shift. In fact, polls we’ve seen during conference presentations indicate that many companies are tasking their traditional ESG managers with management of ESG initiatives. Still, many EHS professionals lack easy access to practical guidance about how to develop ESG strategies that build upon their existing safety management strategies.

The concept of “materiality,” which we can think of as a kind of lens that company management and stakeholders use to determine their most important ESG issues, is an important tool to focus ESG priorities. In what follows, we’ll break down the concepts of “materiality” and “double materiality” and share some key takeaways about their importance to ESG

management—and to EHS professionals helping their organizations navigate the journey to ESG maturity.

SAFETY IS ESSENTIAL TO ESG

If you’ve attended EHS conferences during the last few years or read trade publications, you might’ve noticed many mentions of ESG. But you’ve probably also noticed that most of those presentations and articles have a narrow focus: they offer generalities about ESG management, or they are limited to discussions about greenhouse gases (GHGs), climate risks and maybe a few other environmental topics.

There is rarely any mention of the “S,” or “Social” aspect, of ESG, which includes the company’s relationships with customers and the broader community, but also includes—and builds upon—a foundation in occupational safety management. Safety management is a fundamental responsibility. At any given time, most of an EHS professional’s responsibilities includes safety tasks, such as investigating and documenting injuries and other accidents, performing inspections, tracking, following up on corrective actions, and managing a safety data sheet (SDS) library and hazardous chemical inventory.

Safety tasks can be especially burdensome because some safety regulations, such as OSHA’s HazCom Standard and

Recordkeeping Standard in the U.S., apply to many workplaces. These are reasons why, while commitment to ESG initiatives might come down from the C-suite, traditional EHS and safety professionals like you will play an important role in day-to-day management.

This also means that EHS professionals may find themselves managing ESG initiatives. In order to be successful, you'll need to get a handle on basic EHS tasks first before you can understand how safety management fits into your overall ESG management strategy. Think of your management approach as tiered, like the levels of a pyramid. You can't build ESG maturity unless you first establish a solid foundation in ESG management, as shown in **Figure 1**.

Safety plays a major role in helping you navigate the journey from EHS to ESG. Building good stakeholder relationships with both company executives and non-managerial workers, such as maintenance department representatives and temporary workers, is key to advancing your ESG journey. Having a diverse group of stakeholders will help you identify areas for improvement, share responsibility for key tasks, and prepare to conduct a materiality assessment, which is central to improving your ESG management.

Of course, the "S" in ESG goes well beyond occupational safety and health and regulatory compliance. Taking your safety management to the next level can help you address concerns such as social sustainability, which refers to creating successful places where people live and work, both inside and outside the workplace. Internal aspects of social sustainability involve not only preventing injuries and illnesses but also protecting the general health and well-being of employees, including their mental health and psychological safety. Improving employee engagement on safety ensures they're at the table for important decisions regarding their safety and reduces exposure to psychosocial risks as well as traditional safety risks.

One of the most important elements of social sustainability in the workplace is ergonomics, which is about designing the workplace to fit the worker. Similarly, physical demands analysis (PDA) is an important tool that enables employers to evaluate the physical demands of jobs. A post-offer employment testing (POET) based on the PDA can shield employees from the physical and psychological stresses of performing job duties beyond their physical abilities.

MATERIALITY: A KEY STEP IN ESG MANAGEMENT

Once you have effective EHS management practices in place and have identified key EHS and ESG stakeholders, the next step is to conduct a materiality assessment.

The easiest way to think of materiality is as a relevancy filter for the issues that matter most to an organization. That information is considered material, or relevant, if it could influence stakeholder decision-making regarding the company. The exercise of determining what issues are material to your organization is called a materiality assessment.

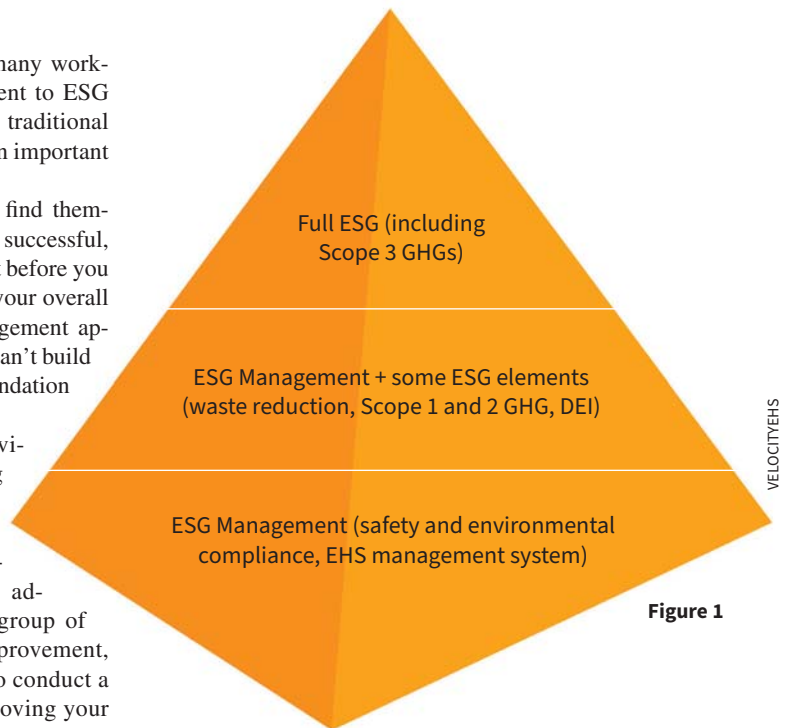


Figure 1

This might sound like a great place to begin your whole ESG strategy, but it doesn't always play out that way. Many organizational leaders decide to pursue specific ESG goals, often based on a choice of ESG reporting frameworks. That might not be a bad choice if you already know you're covered by one of those frameworks. However, it can also lead to several less-than-ideal situations, such as overreporting or ignoring the risks and opportunities that could make the biggest impact on your own company's ESG performance.

In other words, if you don't start with a materiality assessment, you're letting other people who don't know the specifics of your company determine what's relevant for you. It makes more sense for companies to conduct an assessment that captures the specific risks and opportunities for their business and sets them up for success. As an EHS professional, you'll have an important role to play in developing the assessment survey, participating in it, and helping stakeholders understand and act upon the results.

WHAT IS DOUBLE MATERIALITY?

It sounds simple enough to say that materiality is about relevance until we start asking how to determine relevance; that is, about the context or framework we use to determine the relevant issues. In ESG circles, there are two main ways of thinking about this breakdown:

1. Financial materiality is about economic value creation. It's focused on the issues that internally impact a company's financial performance and its ability to create economic value for investors and shareholders.
2. Impact materiality focuses on the external impacts an organization's activities have, including to the community and the environment. These include the organization's contributions to air and water pollution as well as greenhouse gas (GHG) emissions that add to global climate risks.

These two types of materiality aren't mutually exclusive because some issues address both aspects. For example, a company that has an uncontrolled release of a hazardous chemical would certainly create external impacts on the local community, potentially on organisms in water and soil. The company might also be opening itself up to regulatory violations and associated penalties, or financial losses from civil suits. Furthermore, a company with a high intensity of GHG emissions may be contributing to climate risks, including severe weather events that can damage its facilities or disrupt supply chains.

The relevance and interconnectedness of both impact and financial materiality are the reasons for the growing importance of the concept of double materiality that, as shown in **Figure 2**, combines both perspectives.

MATERIALITY AND ESG REPORTING

One potential confusion about the different ESG reporting frameworks is that some are based on financial materiality and others are based on the double materiality concept.

For example, the proposed U.S. Securities and Exchange Commission rule would require GHG emission disclosures from all public companies, based on a financial materiality perspective. Similarly, the first two draft standards published by the International Sustainability Standards Board (ISSB)

tive (GRI) emphasizes the importance of double materiality. GRI works with both EFRAG and the International Sustainability Standards Board (ISSB). EFRAG has a long-standing advisory relationship with International Financial Reporting Standards (IFRS) Foundation, the parent organization of ISSB.

And in the U.S., we're starting to see regulatory agencies use impact and double materiality perspectives, with one example being the U.S. Environmental Protection Agency's new Environmental Justice initiative that seeks to lessen the impacts of environmental exposure on vulnerable and historically marginalized communities.

Still, you'll need to ensure you have simple, flexible methods for creating a materiality assessment based on multiple versions of materiality. From there, you can put your results into the form of a materiality matrix, which plots issues as a function of importance and potential impact. Your most significant issues will be clustered in the top right quadrant, so that your stakeholders can easily see where the most attention is required. Of course, your stakeholders must understand the results of the materiality assessment because the whole point of the assessment is to prioritize your issues so you can start developing the right strategies based on those that are most important to your business.

For example, it's possible that in your company, musculoskeletal disorders (MSDs) represent a large portion of all occupational injuries. A materiality assessment would help everyone get on the same page so you can start planning and budgeting for tools to reduce MSD risk through ergonomics improvements. One possible tool would be ergonomics management software that uses artificial intelligence (AI) to identify MSD risk in job tasks so you can adjust the workplace to reduce that risk.

The overarching advantage here is that as you get more efficient by improving your focus and stakeholder participation, it starts to self-perpetuate. Time saved improving safety in one area frees up time to improve it in others. And if your EHS and ESG software facilitates results the sharing of results, your stakeholders will see progress being made on your top priorities. That may make them more likely to continue participating in your strategic initiatives.

YOU DON'T HAVE TO DO ESG ALONE

Modern EHS and ESG software can provide the support and efficiency you need. Ergonomics and health software makes it easy to account for the individuality and diversity of your workplace, conduct valid PDAs and build effective internal social sustainability strategies. You can also easily assemble materiality and double materiality assessment surveys from drop-down menus of ESG topics, deploy them to stakeholders, and then summarize results in an easy-to-understand format so that you can start developing effective strategies.

ESG maturity requires agility, and you'll have the best chance of staying agile if your tools are agile, too. **EHS**

Phil Molé, MPH, is an EHS and sustainability expert at VelocityEHS, a provider of EHS & ESG software platforms.

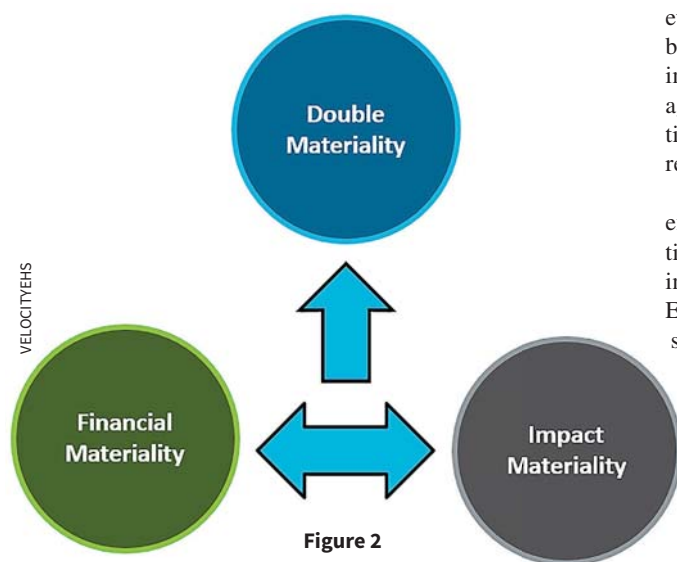
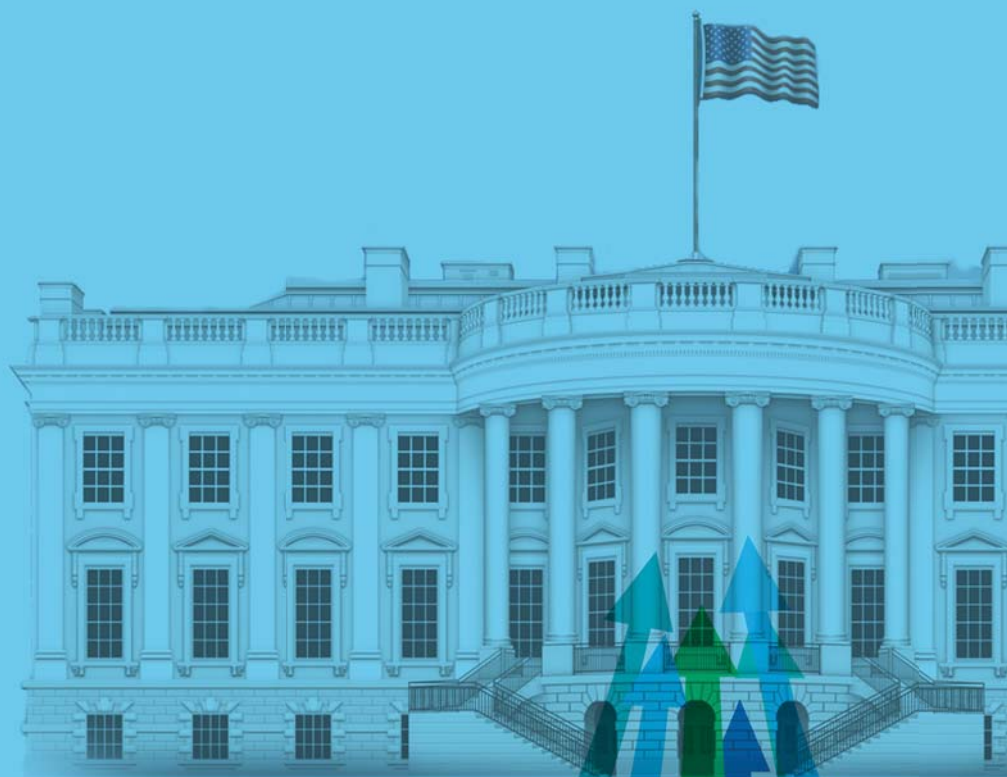


Figure 2

are also based on financial materiality. However, the draft European Sustainability Reporting Standards, recently published by the European Financial Reporting Advisory Group (EFRAG), would create mandatory disclosure requirements for tens of thousands of European companies based on a double materiality framework.

That doesn't mean the approaches to materiality across frameworks won't converge over time; there are reasons to think it might happen. In fact, the Global Reporting Initia-



OSHA to Follow White House's Lead in 2023

The Biden administration will fight to advance federal agency agendas, despite Republican opposition.

By David Sparkman

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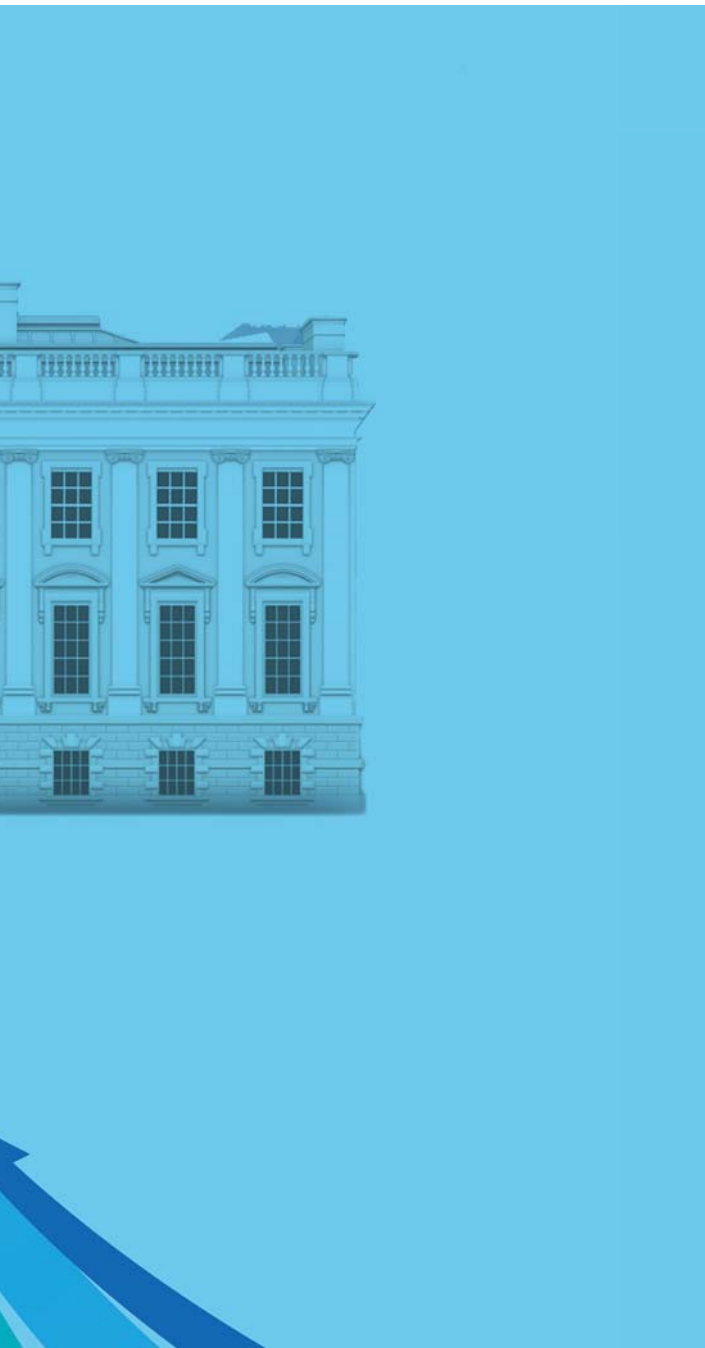
COMMENTARY & ANALYSIS

Following the Republican takeover of the House of Representatives in the last election, you are sure to hear loud challenges coming from that direction to the Biden administration's regulatory game plan, but don't expect federal agencies to back down from their energetic support for the Biden agenda.

Prominent House Republicans have been crystal clear about one thing: They are committed to opening a number of committee investigations into what they see as Democratic malfeasance and misfeasance, ranging from the administration's

response to the COVID-19 pandemic to a regulatory agenda explicitly crafted to promote the interests of the Democrats' labor union and other special interest allies.

One thing that employers should not have to worry about is passage of the Protecting the Right to Organize Act, or PRO Act, which was introduced by the Democratic House leadership in early 2021, not long after President Joe Biden was sworn in. Explicitly constructed from unions' wish list of reforms, the legislation was considered too radical even by some Democrats and stalled in the House. With the GOP now in charge of that body, don't expect it to go anywhere in the next few years.



However, federal agencies throughout the government have dedicated themselves to promoting organized labor's interests following a unified effort mounted early in 2022 after Biden appointed a cabinet-level task force. Separate agencies pledged to pursue these efforts individually and by working together as allies. This included formal agreements for agencies to work jointly on a range of issues that encourage union organizing efforts.

The following is what you can expect from the major federal agencies whose actions directly impact employers throughout the country. However, don't forget that state legislators and governors, as well as some local jurisdictions, have succeeded in im-

posing new laws and regulations promoted by unions and will continue to pursue this course in 2023. It is important for employers to keep this in mind and watch out throughout the year.

OSHA FOLLOWS WHITE HOUSE LEAD

The Occupational Safety and Health Administration (OSHA) exploded into the general public's awareness after, at Biden's command, it sought in 2021 to impose on most American employers a near-universal requirement that they insist their employees be vaccinated against the COVID-19 virus. It turned out to be one of the most controversial policy pronouncements on public health in recent memory.

Of course, the firestorm of opposition culminated with the U.S. Supreme Court striking down OSHA's Emergency Temporary Standard (ETS). The wrenching shock that followed the legal defeat of mandatory vaccinations in private industry resulted in OSHA withdrawing the ETS and initiating a formal rulemaking process.

As of press time, the agency's proposed rule was under review at the White House before it was slated to be published. This rule is not expected to be anything near as controversial as was the ETS. As conceived, it primarily deals with procedures employers should follow to prevent and limit the impact of the disease in the workplace while keeping the sore subject of imposing vaccines at arm's length. Most of the recommended practices will follow those made earlier by the Centers for Disease Control and Prevention (CDC).

OSHA has been active on other fronts as well. A major target has been the logistics industry in the form of targeting warehousing and distribution centers, deploying inspectors to search for safety violations of all sorts, but with a special focus on forklift truck safety. This was accomplished through a series of Regional Emphasis Programs (REPs) that eventually covered almost all such employers throughout the country (except in states with their own approved safety plans).

Although OSHA points to an increasing number of accidents in these work environments, it also doesn't seem to be just a coincidence that a union drive to organize Amazon's vast distribution network also reignited around the time Biden took office. A decades-long effort by the unions to organize all sorts of warehouse operations also led to a new OSHA heat regulation that is expected to be finalized in 2023.

The agency had already directed its inspectors to pay special attention to heat-related issues during worksite inspections that took place in 2021 and 2022. In addition, OSHA announced a National Emphasis Program (NEP) on heat in April 2022.

Also in April 2022, OSHA also initiated a new enforcement program designed to identify those employers who failed to submit Form 300A injury and illness report data through its online Injury Tracking Application. In December 2022, this effort resulted in six Amazon warehouse facilities with injury and illness reporting and recordkeeping violations.

Other actions OSHA plans to undertake in 2023 include a proposed update to the lock-out/tag-out (LOTO) rule. The existing LOTO regulation was rewritten to incorporate several technological advancements that have taken place since it was last changed. It has been assigned a target release date of March.

LABOR DEPARTMENT'S ESG BATTLE

OSHA is a division of the Department of Labor (DOL), which has been active on other fronts, particularly in regard to its enforcement of wage and hour laws and regulations. Labor Secretary Marty Walsh, former mayor of Boston and a long-time union leader, co-directed Biden's interagency task force on promoting union membership growth (along with Vice President Kamala Harris).

Walsh also took a prominent role in representing the President during the contentious freight railroad union contract negotiations that reached a head late in 2022 and eventually had to be resolved by Congress at Biden's request in a move that angered the unions involved and their members.



In November 2022, DOL also staked out a position in the political battle over environmental, social and governance (ESG) investment standards. It released a final rule, making it clear that federally-regulated pension plan fiduciaries can consider ESG factors when it comes to their retirement plan investment decision-making.

In contrast, the governors and attorneys general of several red states, including Texas and Florida, have taken strong public stands against ESG, acting to the extent of withdrawing from investment plans like BlackRock, which led the way several years ago in the private market by requiring companies they invest in to embrace ESG principles.

Critics of ESG have asserted that it is not in the best interests of their state pension plan beneficiaries to follow ESG priorities that promote “woke” political objectives at the expense of purely fiduciary principles, which focus exclusively on obtaining the best financial return for their beneficiaries. This is why several of the red states with Republican leadership are seeking only those investment opportunities that do not utilize ESG while withdrawing from investor services like BlackRock.

Among the ESG factors that can come into play when plan managers make investment decisions are “negative screening,” where investments that score poorly based on ESG factors are

excluded (e.g., carbon emissions), or “positive screening,” where they pick investments that score highly on ESG factors (e.g., sustainability). They also can take an “integrated” strategy, blending together selected ESG principles into their overall investment analysis.

Republicans see ESG as an unwarranted and unjustified intrusion into the free market to impose controversial policies that cannot be imposed directly by the government. Expect this high-profile battle to continue and even intensify over the course of 2023, as both Democrats and Republicans position their parties in preparation for 2024 elections.

“With the next U.S. presidential election less than two years away, any change in administration always brings the risk of a change in regulations,” said attorneys for the law firm of Morgan, Lewis & Bockius when the DOL rule was issued last November. “So, while the Final Rule provides what we believe many will consider welcome clarity, the current political environment may make certainty in this area elusive.”

THE NLRB GOES TO WAR

No agency in the federal government has been more active and vocal in its support of organized labor than the National Labor Relations Board (NLRB), which due to its structure as an independent agency sometimes can act with more speed and finality than most other parts of the government.

Although supposedly independent of White House control and led by board members who serve for five-year terms, the NLRB enthusiastically signed on to the Biden administration's government-wide campaign to promote union organizing early on. In 2022, this included signing memoranda of understanding with the Federal Trade Commission and Department of Justice to coordinate enforcement activities.

If you are of the thought that the NLRB is supposed to function as a neutral arbiter or objective umpire, you should know that Democrats stretching back quite a few years have instead embraced their position and wielded the board's power with the goal of promoting unionization of nonunion employees and making sure the unions retain the involuntary adherence—and dues—of existing members.

A perfect example is the board's recent action to make it more difficult for union members to pursue a successful vote to decertify their union. Under long-standing board standards, no decertification vote can be held if the employer has an unfair labor practice (ULP) claim pending against it. Years ago, the unions would stymie any decertification campaign by filing phony ULP claims. Under the Trump NLRB, this was made more difficult for unions to resort to this gimmick. Under Biden, the board is back to letting unions get away with it.

As a result, the NLRB has guaranteed that collective bargaining agreements will remain only contracts in America that can never expire—unless the company goes out of business. It even is planning to allow board staff to overturn elections where workers rejected the union if a ULP is found to have taken place, granting union representation by administrative fiat even where the union lost the vote.

In 2022, the board also made it easier for unions to organize smaller groups of employees within a single workplace, also called micro-units, such as the janitors working within a manufacturing facility. This is supposed to allow a union to get its foot in the door at a worksite. Embraced by the Obama-era NLRB, it later turned out to be a mixed bag for unions, requiring a lot of effort without much of a payoff.

Another pending change is a rule proposed last September that is intended to redefine joint employer status in such a way that the unions will be allowed to organize the employees of independent franchise operations, such as McDonald's, and workers employed directly by commercial staffing agencies.

The change in how joint employer status is regarded already has impacted college sports. In 2021, the board took significant steps toward allowing college athletes to unionize (including trying to dictate that you can't call them "student athletes" anymore. The NLRB insists they be called "players at academic institutions").

In 2021, NLRB General Counsel Jennifer Abruzzo issued a directive to regional staff endorsing the concept behind al-

lowing these athletes to organize. Last December, the board's regional counsel in southern California extended this further by supporting a ULP complaint filed by the men's and women's basketball teams of the University of Southern California against the university, the Pac-12 Conference and the NCAA.

Overall, the NLRB's belief is that pursuing an agenda aggressively supporting organized labor is well worth the effort. Union representation petitions filed with the board increased 53% for fiscal year 2022 (which ended Sept. 30, 2022) when compared with FY 2021 and had reached the highest level since 2016. The NLRB said that 2,510 union petitions were filed in FY 2022, up from 1,638 petitions in FY 2021.

"Given the spike in case intake we are seeing in the field, we can expect even more cases to come before the board in

fiscal year 2023," observed NLRB Chairman Lauren McFerran when she announced the numbers. "You also can expect more of those elections to succeed, given the administration-wide support the unions can now count on." **EHS**



David Sparkman is founding editor of ACWI Advance and contributing editor to EHS Today.



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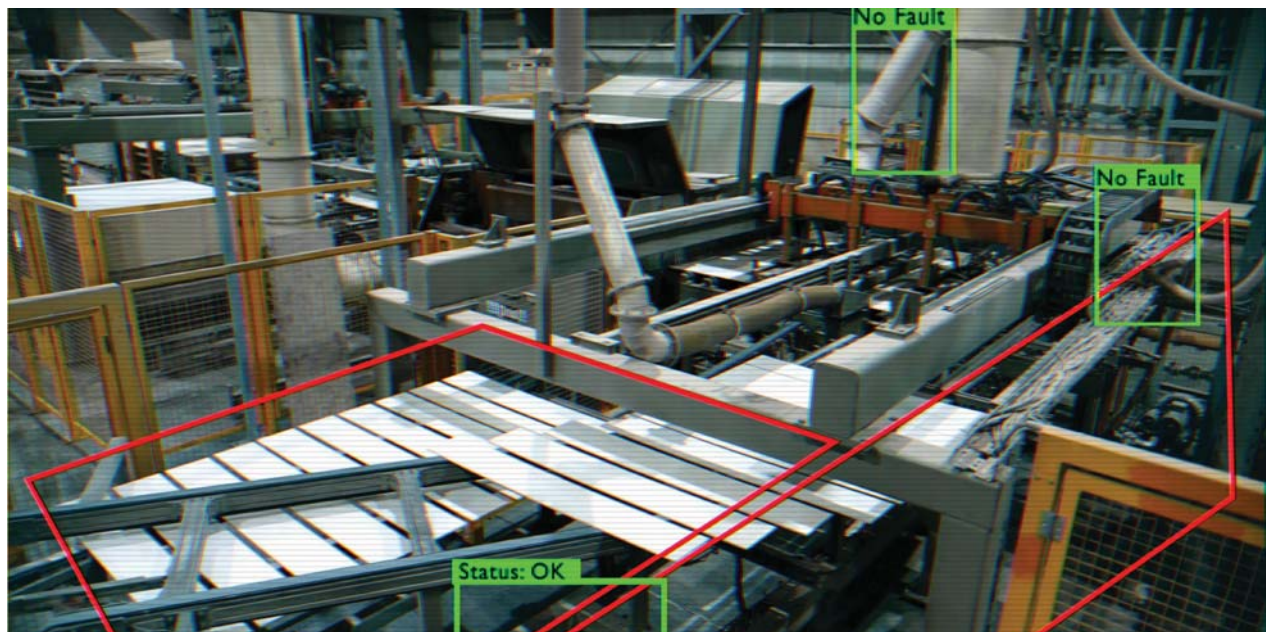
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Using AI-Driven Cameras to Increase Workplace Safety

Using automation to scan for potential issues allows safety professionals to focus on high-value decisions.

By Adrienne Selko



SPARKCOGNITION

After about 18 minutes, a human being looking at camera footage loses half of their ability to notice aberrations. But an artificial intelligence-based software system integrated with a camera can view hours of footage without losing focus. It's able to spot activities and behaviors that could become safety problems and send an alert to a safety manager so accidents can be prevented.

These types of solutions use computer vision and AI to capture and interpret rich media content like video and still images. And the good news is that many companies already have cameras installed so the software can be readily integrated.

"There are over one billion surveillance cameras in the world, and most are passively recording," explains Jaidev Amrite, senior director of product management for SparkCognition, a software company based in Austin, Texas, that counts among its customers and partners Boeing, Chevron, Dell Technologies and Siemens Energy. "This means that when an accident occurs these tapes are reviewed to see what happened, develop lessons learned and create lifesaving rules. But that's a retroactive type of process."

A much more efficient and safer way to use the cameras is to let AI constantly scan the facility and alert safety teams when it discovers an abnormality. "This way the people can focus on high-value decisions, and this is a multiplier for safety opera-

tions," says Amrite. The company's technology is already being deployed by 17 major companies with 120,000 cameras in industries such as manufacturing, distribution and transportation.

The computer vision algorithms can interpret image inputs, including:

- Image classification
- Object localization
- Object recognition
- Object verification
- Object detection
- Semantic segmentation
- Object tracking.

AI does this across the organization and is always looking at the facility. Only when certain types of conditions develop does the system alert the safety teams. This way humans can focus on high-value decisions, instead of spending time monitoring for incidents. "It's the problem-solving abilities of humans that become the AI code written into the technology," says Amrite.

THE RIGHT CONTEXT FOR SAFETY

Sercan Esen, CEO of Intenseye, an EHS software platform based in New York, would agree with Amrite as to the more effective role EHS professionals can play. "Until now, EHS teams have

relied upon manual, employee-led procedures to identify safe and unsafe acts happening in the workplace,” he said in a statement. “This involves individuals taking time away from their current roles to walk the shop floor in an attempt to identify unsafe acts as they happen.” A better method, notes Esen, whose company works with Fortune 500 companies, is to provide software-driven programs designed specifically for EHS professionals that can use privacy-preserving computer vision that are configured to run 24/7 safety inspections.

The company’s data provides what it calls core AI features that can be activated to detect unsafe acts and conditions. The data comes from companies using Intenseye’s platform. When there is an unsafe act or condition, an image and a 12-second video of that moment are displayed on the platform. It is sent as a real-time notification.

The areas covered include:

Emergency alerts, which can be used to get immediate notifications in situations such as when a worker falls to the ground or there is a fire-related emergency.

Area controls can be used to prevent workers from entering restricted areas and minimizing occupational exposures through time limits.

Vehicle controls can improve traffic safety by ensuring the safe operation of vehicles.

Behavioral safety can be used to avoid line-of-fire injuries such as pedestrians in vehicle paths, nonuse of handrails, and violations while working at heights.

Ergonomics AI detects risky actions for the body and prompts the manager to take the situation under control before any hazardous conditions arise.

PPE detection, which includes gathering data detecting the use of helmet, glove, apron, sleeve, respiratory protective equipment, reflective vest, and glasses.

Housekeeping can be used to reduce the risks of slips, trips, falls and collisions by ensuring that vehicle paths and pedestrian walkways in a facility are always clear and safe.

Armed with data from those areas, a company is in a better position to determine what areas need improvement. “When the system captures unsafe conditions, we encourage our clients to talk to the workers and teams at the frontline, openly,” Gokhan Vildiz, Intenseye’s business development director, told *Wire Journal International*. “It is so crucial to invite the frontline workforce to talk about the reasons why the unsafe act or situation occurs. We strongly believe that ‘context’ drives the behavior. Thus, we steer the leadership of our clients to address the systemic level issues, to be able to provide the right context where people can work safely.”

RAISING THE SAFETY STANDARD

Continuously improving safety is how Chooch, an AI computer vision platform company based in San Francisco, envisions the future for this type of technology. “We believe computer vision is a fundamental part of our digital future and the ap-

“In 2021, revenue for the technology was \$15.9 billion and is expected to hit \$51.3 billion in 2026.”

plications are practically infinite—replicating any visual task,” said Emrah Gultekin, CEO and co-founder of Chooch, in a statement. “AI models can be trained and deployed on an extremely wide range of tasks, giving you a great deal of flexibility. That’s why organizations of all sizes and industries are now applying computer vision to improve efficiency and accuracy, boost their productivity, and cut costs.”

The company, which partners with such high-tech companies as Microsoft, Nvidia and Lenovo, serves the manufacturing, retail and other sectors and sees an increased adoption of the technology, pointing to a recent IDG/Insight survey in which a majority of respondents said that computer vision will boost their

revenue, and 37% planned to implement this technology in the future. (Currently only 10% of respondents are using computer vision, while 44% are still investigating it.)

The reason for this level of investment, according to the IDG/Insight report, is that the majority of those surveyed believe computer vision has the potential to affect key business areas, including growing revenue (97%) and saving time and money (96%).

“We were not surprised to find computer vision squarely in the awareness phase. It’s an extremely complex emerging technology that requires a significant investment, with an average return of two to three years and real-world examples just starting to materialize to prove the business case,” said Amol Ajgaonkar, chief technology officer of Intelligent Edge, Insight, referring to the study results.

When asked for the best use case in a variety of industries, the respondents noted that computer vision can improve their organizations in several ways. For instance, the elimination of tedious, expensive or dangerous work is a motivation for 58% of manufacturers and 49% in retail and wholesale distribution. Augmenting current processes and improving employee experiences is a driving factor for 47% in the energy sector, 46% in healthcare and 43% in manufacturing. And 53% in the energy and utility sector, and 41% in transportation, say it’s a way to stay ahead of the competition.

The energy (56%) and healthcare (51%) sectors recognize that the technology can help to deliver new, more innovative products and services to their customers. Only 44% of retailers ranked this outcome as a priority, indicating that they may be missing an opportunity for growth and differentiation.

From a market perspective, in 2021 revenue for the technology was \$15.9 billion and is expected to hit \$51.3 billion in 2026. Part of the reason for this increase is that by 2025 video analytics will be a standard element in two-thirds of new video surveillance installations, compared with less than 30% in 2020.

The breath and capability of this technology will continue to grow, Amrite believes. “The beauty of having visual AI is that it can easily monitor not just human behavior but also see behind the machines. For example, it would be able to determine if they are emitting toxic chemicals. And the field will continue to integrate further into wearables so that as we become more tech literate we can raise the safety standard in all environments.” **EHS**



A More Efficient Approach to Overexertion Injuries

SEBASTIAN KAULITZKI | DREAMSTIME

Still doing task assessments by hand?

Time to reconsider and scale efforts to maximize impact.

By Heather Chapman

Keeping employees safe and healthy at work is the foundation of our profession. When someone is injured at work, the impact may create a ripple effect on their life. It can be difficult to quantify or understand the impact of an injury on workplace culture and on the injured person's life outside of work.

Perhaps they can no longer do the things they love to do outside of work. Maybe they can no longer perform their job as well as they used to. It's quite possible that a workplace injury can put an employee's life on hold while they heal, recover and try to bounce back. Sadly, injuries sometimes have permanent ramifications.



In 2021, more than 2.6 million recordable injuries were reported by private industry in the United States alone. Nearly one-third of those were due to overexertion. Manual ergonomic assessments are our traditional tool to reduce overexertion injuries. These are, unfortunately, time consuming and limited in scope. The inherent limitations make injury prevention challenging and cost prohibitive to deploy at scale.

Thankfully, technology has advanced in the coaching and assessment realms to the extent that new horizons for safety improvement are within reach.

THE PROBLEM WITH TRADITIONAL ERGONOMIC ASSESSMENTS

When was the last time you had someone closely watch the work you were doing? What if they were taking notes on a tablet, making measurements of your movements and even taking photos or videos of your work? Do you think that you might try a bit harder or do things “the right way?”

Let’s say we conduct an ergonomic assessment on the first shift operator who happens to be a 5’10” male. Our calculations and hazard assessment is based on his interaction with the workstation, tools and process. What if the second shift operator is a 5’2” female? How might the operation present different risks for these two individuals?

These two basic illustrations highlight some of the challenges that we have faced since the beginnings of our profession:

- How might the risks change if we used a bigger data set instead of a moment in time?
- How might we efficiently understand the way multiple employees within a job role are performing the tasks?

Up until now, the best solutions to these challenges require significant time and effort. This means that ergonomic assessments are cost prohibitive for most organizations to leverage at scale.

But what if there’s another way?

TECHNOLOGY AS A TOOL FOR PROACTIVE INJURY PREVENTION

One new solution harnesses artificial intelligence (AI) to identify and quantify ergonomic risks in near real time. It automates measurement of an employee’s movements, the frequency at which they occur and identifies hazards exceeding preset thresholds. Imagine a visual, second-by-second angle of movement evaluation without having to use a protractor or make an educated guess. Videos from app-based AI technology allow safety professionals to gather big picture data over a longer period of time.

This solution enables safety professionals to scale their efforts across multiple facilities and locations without requiring as much travel and time away from home. We can cost-effectively collect ergonomic data from a group of employees for two weeks. We can also easily assess different employees performing the same job. Once this data is collected, it can be used in other ways as well—identifying trainers, best practices and improving standards of work.

WHAT ABOUT OVEREXERTION INJURIES?

Imagine having an athletic trainer at an employee’s side coaching them into better body mechanics consistently over the course of several weeks. Do you think they would learn safer ways to perform their job duties?

While this type of on-the-job coaching might be an ideal way to reduce injuries, it is not a feasible solution for most companies to deploy at scale. There is no substitute for human interaction, but wearable devices are a game changer in this space. They can measure movements and provide real-time feedback to employees when high-risk movements (e.g., bending, twisting, overhead reaching, or open arm push and pull) are performed.

For safety professionals, the data collected from wearable devices provides a great opportunity to make our interactions with employees and supervisors more effective by the insights it can provide. A dashboard displays data for each employee wearing a device. Employees and managers can view the frequency of each type of hazard, where these hazards are happening (e.g., by department and job roles) and pinpoint quickly where the risks of injuries are the greatest.

THE ROOT CAUSE

While technology is opening new horizons of possibility to improve the safety of our operations at greater scale and lower cost, it is, ultimately, just another tool in the safety arsenal. Technology alone is not going to solve problems. People need to identify and address the root cause of the problem. We all have a role to play, from safety professionals and managers to employees and executives with the power to approve spending and investment in engineering controls.

There is only so much time in a day, and safety professionals never have a shortage of priorities. The use of technology can be invaluable, making ergonomic assessments much less time-consuming, more interactive with employees and truly a proactive measure.

Envision a future where we routinely improve culture and employee perception by giving employees the power to change the way they work for the better. How might a more collaborative approach impact morale and retention? Well, that’s a conversation for next time! **EHS**

Heather Chapman is principal of Paradigm Safety and U.S. account manager of Soter Analytics. She delivered a presentation on “Advancing Injury Prevention through AI and Wearable Technology” at EHS Today’s Safety Leadership Conference 2022.

Ergonomic Considerations for Hybrid Workers

The workplace is changing. Here's what you need to know to keep workers safe, comfortable and in proper alignment when they come to the office.

By Anand S. Iyer, Jeffrey E. Fernandez and Brandy F. Miller

COVID-19 has significantly disrupted office work. The implementation of telework has allowed employees to remain productive while mitigating risks related to COVID-19. The widespread usage of telework has provided a way for workers to be effective and efficient whether at the office, home or any other remote location.

Even as new variants of the virus emerge and the community risk changes, employers are welcoming employees

at any given time to provide the required office space along with employees who are still inclined to work from the office. To that extent, many businesses have already reduced their footprint by liquidating excess office space.

The challenge of this new arrangement is determining how best to optimize productivity for both the physical and telework workspace while making sure employees are operating in a comfortable setting.

Ergonomics is the science that fits the task to the worker. Too often, employees perform tasks in hazardous postures or environments that may cause them injury, either immediately or over time. The main work-related health problems affecting office employees are pain, discomfort, stress, visual fatigue and even injury. These can be the result of sedentary work, highly repetitive tasks and working in awkward positions due to an incorrect workstation set up.

Improving ergonomics at the workplace can address many of these issues while positively impacting your bottom line. Effective ergonomics benefits both employers and employees through improved health and safety, higher productivity and lower costs.

If your organization is moving toward a hybrid work model, here are three questions to consider.

1. WHERE CAN TASKS BE MOST EFFECTIVELY COMPLETED?

With a hybrid model, managers should consider which tasks should be performed in each location (on-site versus telework). Understanding each environment and their unique characteristics can help improve the efficiency of each location.

In the telework environment, employees can focus on tasks that require minimal interaction. Work that is solitary or work with people at different locations may lend itself to being completed primarily during telework times. Solitary work can also be performed on-site as needed but does not take advantage of the opportunity to work with others that is inherent to the office.

Conversely, on-site work allows for collaboration, planning and face-to-face interaction. Therefore, tasks that require collaboration may be most appropriately scheduled on days when key employees are in the office.

When hybrid schedules are slightly flexible, employees can coordinate their on-site days so that they can schedule their work together. It should be noted that some tasks, such as in-



MONKEY BUSINESS | DREAMTIME

back to the office. During the pandemic, workplaces have reacted swiftly and with great conviction to change the culture of work to suit the needs. However, frequent lockdowns and waves of infections have changed the nature of work along with how companies react.

Companies have realized that not all employees have to be present at the same office location, at the same time, to conduct business operations. Rather, teams could get most work tasks efficiently completed from a remote location. Some companies have gone from working entirely in the office to 100% home-based operations with little or no effect on their business operations.

As companies continue to make changes to their business model and prepare for the future, they need to consider which culture changes to continue and which will return to the pre-pandemic model. Because of the success of telework, many organizations, including Apple and Google, are providing employees the flexibility to return to the office with a hybrid schedule.

To accommodate hybrid work, safety and facilities personnel are assessing a new set of scenarios related to having fewer employees on-site at any given time. This allows for the possibility of using less real estate so that employees who are needed on-site

ternal or external customer facing tasks, may require some employees to be on-site every day.

2. HOW CAN WE OPTIMIZE SPACE WITH ON-SITE WORKSTATIONS?

Understanding the primary tasks performed during on-site time is critical to making the best use of office space. Planners, ergonomists and safety professionals should use this information to ensure that employees can perform work tasks safely and efficiently.

The hybrid workplace requires that both the telework location and the on-site work location accommodate the employee's needs.

When setting up any workspace, the goal of ergonomics should be kept in mind: to fit the tasks performed to the capabilities of the human. One way this can be done is to adhere to the design acronym N-E-W (neutral posture – elbow/eye height – work area) to guide workstation setup.

When employees work a reduced number of days on-site, it may allow for more efficient use of space through shared workstations. There are a number of ways that organizations can address this shared workplace environment, including:

- assigning the shared desk locations to individuals based on need;
- making them available for reservation based on workstation characteristics; or
- having them be on a first come, first served basis.

3. HOW CAN EMPLOYEES AND MANAGERS BE ERGONOMICALLY AWARE OF WHERE THEY WORK?

No matter which method is used, it is important to ensure the workstations accommodate the range of employees who could use them. This can be done by either ensuring the workstations include adjustability or through an A-B-C type approach.

Built-in Workstation Adjustability

Fully adjustable workstations have built-in adjustability to accommodate the majority of employees who may use a workstation. This may include:

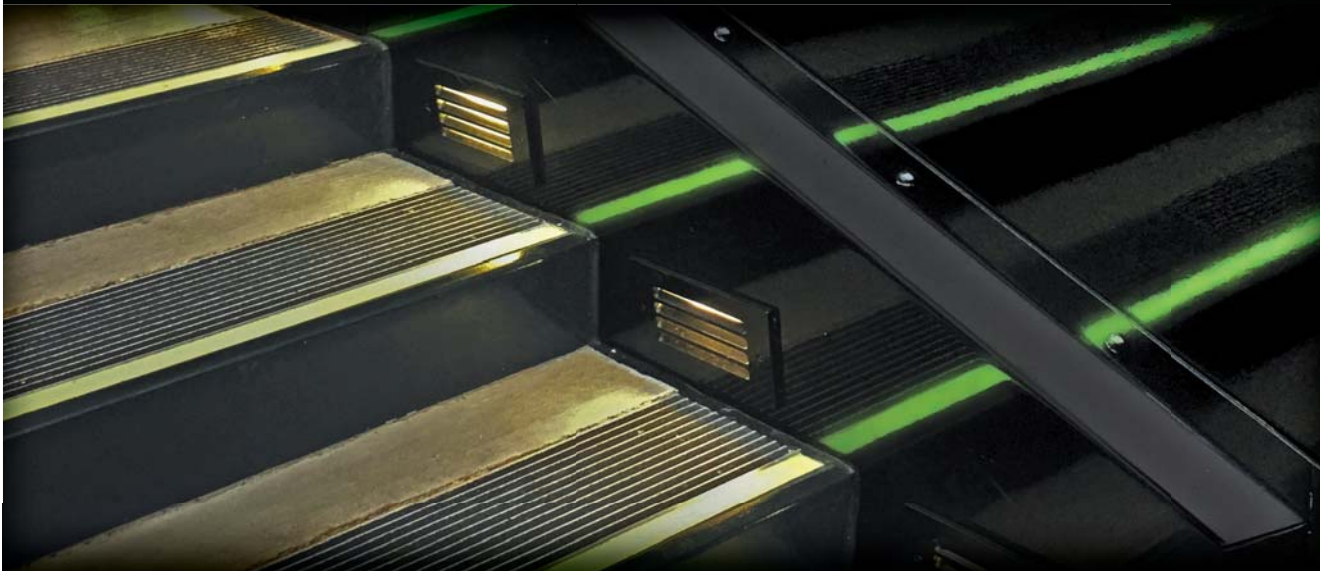
- dual monitors with arms that can be adjusted for optimal height and viewing distance;
- a workstation that can adjust from seated postures to standing postures; and
- a chair that allows for key adjustments, such as seat pan depth, lumbar support, seat height, armrest width and seat pan height.

Furthermore, each workstation should have ergonomic friendly peripherals that includes but is not limited to:

- a docking station that is compatible with employer-provided technology,
- power outlets that are available on the top of the workstation (to eliminate the need for people to plug in items

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- under the workstation regularly), and
- an external keyboard and mouse.

Organizations can reuse existing furniture for these workstations, but they must incorporate as much adjustability as possible so that employees can arrive at the workstation, quickly make the necessary modifications and begin working.

Along with any built-in adjustability, employees should be trained on the proper adjustment and alignment of the equipment. Employees should work with their monitors positioned so their neck is neutral (straight), their keyboard and mouse are positioned close (primary work area) and at elbow height, and their feet are on the floor or a footrest.

For employees who need additional accommodations, it is the company's responsibility to provide the necessary workstation modifications so that employees are in line with the N-E-W principle. For example, the company may need to purchase additional chair models for employees of a certain height and/or weight who are not served by a standard chair.

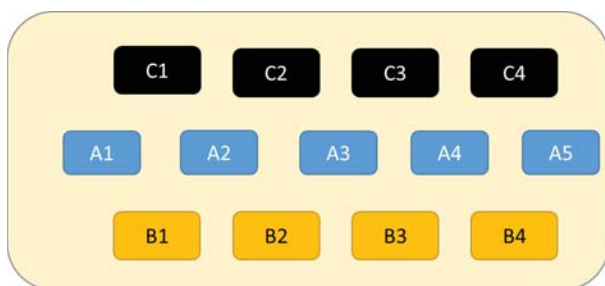


Figure 1. Sample Spatial Arrangement of Workspace by A-B-C Categories.

A-B-C WORKSPACES

When built-in workstation adjustability cannot accommodate the range of employees who need to use a workstation, employers should develop an A-B-C approach. This approach divides the available workstations into sets that are adjusted to fit employees of all sizes.

Employees are measured and then instructed to use those select workstations that match their measurements. In practice, this means that a single work area would include workstations of each predetermined size to accommodate all workers. For this concept to be successful, two activities should be conducted:

1. A map of the entire work area needs to be cataloged with the dimensions, features, and adjustability for the workstations, seats, and peripherals.
2. Employees must have pertinent anthropometric measurements (e.g., sitting/standing elbow height for work surface height, popliteal height, etc.) taken so they can be categorized and educated as to which workstation cluster is most appropriate for them.

One organization implemented such a strategy and arranged desks so that the work surfaces were 25 inches, 27 inches and 29 inches (see **Figure 1** for a sample layout). The seated elbow height for all employees within the organization was then measured, and they were coached as to which workstation height group would be most appropriate for their use.

IT considerations for external monitors, keyboard/mouse, docking stations and power on the desktop should also be included at each workstation. Additionally, the implementation of footrests may be needed for individuals whose feet do not reach the ground to allow them to work in a neutral ergonomic position at some workstations. As with the adjustable workstations, additional considerations are needed to ensure that individuals who do not fit into those sets are provided appropriate ergonomic workstation modifications.

ACKNOWLEDGE AN ENVIRONMENT OF CHANGE

As organizations navigate the return to the office, it is important to remember that the way each employee works is changing significantly.

For some, teleworking has introduced flexibility and additional short work breaks into their schedules, so returning to the office may mean being tied their desks for a longer duration. For others, teleworking has required them to be tied to their workstations for almost continuous virtual meetings, so returning to the office may provide additional breaks as they move between conference rooms or in-person meetings.

As employees adjust to a hybrid schedule, it is important to ensure that everyone follows proper ergonomic principles. Furthermore, companies need to guarantee that as part of the return-to-work process, necessary workplace modifications are available and provided to individuals with special needs. These accommodations must remain compliant with all the federal and state regulations. It is also important for individuals who have a history of related injuries, such as musculoskeletal disorders and other disorders, to seek the assistance of a certified professional ergonomist (CPE).

With careful planning, consideration and training, employees can continue to work productively and safely in a hybrid work environment. **EHS**

Anand Subramanian Iyer (aiyer@jfa-inc.com) is a principal at JFAssociates Inc., based in the Washington, D.C. area. He holds a Ph.D. and M.S. in industrial engineering from the University of Cincinnati, Ohio, and is a Certified Six-Sigma Black Belt, a Certified Professional Ergonomist, an Associate Safety Professional, and an OSHA-30 certified professional.

Jeffrey E. Fernandez (jf@jfa-inc.com) is the managing principal at JFAssociates Inc., based in the Washington, D.C. area. He holds a Ph.D. in industrial engineering from Texas Tech University, is a registered Professional Engineer and a Certified Professional Ergonomist. He is on the editorial board of EHS Today.

Brandy Farris Miller (bmiller@apexergonomics.com) is a principal at Apex Ergonomics, based in the Phoenix area. She holds a Ph.D. and M.S. in industrial engineering. She is a Certified Professional Ergonomist, Associate Safety Professional, Certified Six-Sigma Black Belt, and an OSHA authorized 10/30-hour general industry outreach trainer.

Four Steps to Stay Safe and Operational During the Winter

In preparing for a major winter storm, the key areas to focus on are human safety, facility limitations, and transportation and utility restrictions.

By Don Shelly



RONNIECHUA | DREAMSTIME

Major winter and ice storms, much like the polar vortex surge that impacted a majority of the U.S. in February 2021, can cause great economic impacts and business disruptions. Unfortunately, many businesses don't have plans in place to mitigate their impacts. However, planning for severe winter weather should be a top priority for environmental health and safety decision-makers.

The impacts from cold weather events will vary greatly depending on where your business is located and how frequently you experience below-freezing temperatures. But whether you begin to see negative effects at 32°F or 10°F, extreme temperatures create operational difficulties, safety concerns and financial losses for businesses in the cold season.

Winter weather can also present difficulties in forecasting, not only because episodes of cold temperatures can cover large areas, but also because precipitation, and the form it takes, is very sensitive. Precipitation can take the form of rain, sleet, freezing rain or snow, and the conditions in which these form can create dangerous ice. All of these are dependent on temperature, which itself can fluctuate depending on the level of cloud cover, speed or direction of wind and humidity in the atmosphere.

This volatility in precipitation contributes to the uncertainty surrounding an upcoming cold front, making it difficult to get advanced forecasts of the kind of precipitation to expect. Even though a major cold event can be identified seven to 10 days in advance, it's not until one or two days before impact

that the track, timing and strength of the cold front can be confirmed.

Every year, in anticipation of an upcoming cold season, businesses should develop a Winter Weather Response Plan that outlines what areas of a business are at risk from individual weather elements. Here are four steps to prepare for, and safely mitigate, the operational impacts of severe winter events.

1. OBTAIN AN APPROPRIATE TEMPERATURE FORECAST

Your definition of "extreme temperatures" will vary depending on the vulnerabilities of your organization. Accurate weather intelligence is critical in knowing what actions to take in response to severe cold events. Having timely access to this information is essential for preparedness.



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Temperature forecasts should advise on:

- How cold it will get.
- How long it will last.
- How soon will the front arrive.
- How certain is the forecast.
- How widespread the event will be.
- Other weather elements to expect, such as wind and precipitation (e.g., snow, ice, sleet).

Once the weather event parameters are known, the response team can start the actions of their response plan.

2. KNOW YOUR BUSINESS AND ITS WEATHER SENSITIVITIES

In preparing for a potentially impactful winter weather event, the key areas most businesses need to consider will likely fall within three main categories: human safety, facility limitations, and transportation and utility restrictions. The level of impact and response within these areas varies from business to business, which is why it is imperative to know the specific vulnerabilities present within your organization.

Employee safety is always number one.

It's essential for a business to ensure safe working conditions for employees in all professional environments. In winter, this means providing a heated workspace. When monitoring the temperature, remember wind chill and elevated work sites can be colder than the thermometer might read. If staff are required to work outside, a heated break space should be provided where employees can warm up when needed.

It also includes providing access to sufficient and adequate personal protective equipment (PPE). Cold stress can cause hypothermia, frostbite and trench foot, all of which can have long-term effects. Outdoor workers have the additional risk of slipping and falling in snow or ice, so these work areas must be properly assessed before and immediately following any inclement weather. To combat dangerous environments, temporary walkways and salt can be used to form stable surfaces for outdoor workers.

How will cold weather impact your facilities? Preventing operational down-

time requires the infrastructure of a business to remain functional in a freeze. Things to consider include:

- Is there temperature-sensitive equipment, machinery, technology, or processes that will fail or become dangerous to use below a certain temperature?
- How long can the facility withstand certain temperatures? (For example, two hours at 20°F might not have the same impacts as 24 hours at 32°F.)
- Are there structural weaknesses to buildings that may be impacted by heavy snow or strong winds?
- Are there pipes that might freeze shut or burst?

Based on the answers to these questions, certain preparatory measures must be taken. This could include draining unused or unnecessary water lines, or protecting critical equipment with additional insulation or warming the area. Knowing your vulnerabilities is the first step to preparing for them, maintaining operations through an event and determining when it's time to shut down or dial back.

Consider supplier and utility limitations. Many businesses rely on utility providers, suppliers and contractors for daily functioning. Receiving and delivering goods and services can become risky if roads and regular routes are impacted by ice. Keep drivers informed of road conditions and have alternate routes ready for deliveries, if possible.

It is also a good idea to monitor for power outages. Most utility companies offer online tracking maps for current power outages. If your business service provider is able to track the probability of a power outage based on the weather conditions, you may be able to pre-position generators for emergency power.

Should road conditions make it too dangerous to travel, safety managers should have enough emergency supplies on-site to last through an event. They should also update journey management protocols to prepare company vehicles, as employees could temporarily get stuck away from the main facilities.

3. DEVELOP AN ACTION PLAN BASED ON OPERATIONAL TEMPERATURE THRESHOLDS

Once the vulnerabilities have been identified, a comprehensive response plan can be developed, ideally for all business risks. The most effective weather response plans consider the forecasted weather conditions, the probability of the worst-case scenarios (i.e., lowest possible temperatures or highest wind speeds), the stages and timing of the developing weather, and the amount of time needed to safely execute any mitigation efforts. Responding to winter weather threats requires additional flexibility—reflected by an adaptable response plan that includes:

An Activator: A threat alert temperature or precipitation alert that rolls responses into action. The activator may need to consider the probability of the cold weather event. The chosen temperature alert will depend on the restrictions highlighted in Step 2 (above).

A Time Line Tool: To identify response plan actions and when they should be implemented. This should include alerts for the forecasted arrival of the front, severity of the storm and probable



IRINA IGUMINOVA | DREAMSTIME

impacts. The time line should also review the duration of possible impending scenarios and provide options to cope with each. Safety managers would likely respond to a two-hour freeze differently than a 10-hour freeze, as each impacts a business differently. The goal for this time line tool is to count down to the event's impact, ensuring each preparedness action is implemented at the right time.

Seeking Meteorological Advice: Meteorologists can monitor precise site locations and forecast the level of impact a business can expect from a weather threat. This forecast should tell you the expected type of precipitation and temperatures, which is critical information for your response. Guidance from a weather intelligence partner factors into the time line tool, as that information should be obtained before managers and executives need to make decisions. These services can customize alerts for a business based on their specified temperature thresholds up to seven days in advance.

The timing of a cold front is crucial to the timing of a freeze, and the arrival of cold weather will influence when the coldest temperatures will be reached. There is also the possibility of several freeze and thaw patterns occurring throughout the event, which may need to be factored into a business's coping plan.

4. PRACTICE THE PLAN

Until a procedure is set in motion, it is difficult to predict its shortfalls. Practicing a response plan will show

employees what to expect in the event of severe winter weather. Each employee has the opportunity to go through the motions and fully understand their responsibilities in that situation so they can be prepared for the real event. Drills can highlight unforeseen problems with facilities and transportation or gaps in procedures. This is an opportunity to improve preparedness planning and ensure all members of a business are informed and ready to act.

Every year, there's a good chance of volatile winter weather patterns. Even in some more temperate areas of the country, businesses need to plan for intense cold snaps, snow accumulation and variable forms of precipitation. Using the steps above, safety managers can prepare for winter and mitigate operational downtime for their businesses, ensuring people and places remain safe. **EHS**

Don Shelly is the vice president of on-shore oil and gas for StormGeo, a provider of global weather intelligence. When he isn't helping businesses understand the nuances of preparing for severe weather events, he is the host of two podcasts exploring historical events and their impacts on culture and society.



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8 Ways Wearables Can Help in Winter

Working outside in the cold doesn't have to be as dangerous, thanks to innovative new technologies.

By Gen Handley

When robotics was first introduced into the late-1970s automotive industry, workers across all industries started to worry that their jobs were going to become automated, and they would be out of work.

Since then, the world has been transformed by the rise of the internet and the Industrial Internet of Things (IIoT), which have impacted every facet of our personal and professional lives. In some cases, automation and technology have replaced human workers entirely. You see that more and more every day with the increasing number of self-checkouts at the local grocery store and even in sports journalism.

Wearable technologies have also benefitted our safety in the full range of capacities, occupational safety included. Whether it's increasingly intelligent machinery, systems and robotics or automated software and online platforms, workplace safety has benefitted from these technological advances, and people are more protected as a result.

Advances in technology and artificial intelligence are improving our productivity as well as occupational safety. In particular, smaller, lighter and more affordable wearable safety technology is becoming an attractive safety solution for occupational hazards that workers face, whichever sector they are in.

These wearables are smart devices that can be integrated and worn with work clothing, such as clipped onto a belt, or used with personal protective equipment. Generally, these devices use advanced hardware (e.g., sensors, accelerometers or gyroscopes) that analyzes information (e.g., movement, time, location or heart rate) and a growing list of data categories that the employer can access—with permission from the employee, of course.

On any given workday, having an industrial wearable tracking your well-being is a big benefit; they can track valuable health data such as blood pressure. (My Garmin watch is constantly reminding me to move, and it's actually working.)



Furthermore, during the dark, cold and slippery workdays of winter, these devices can be an invaluable asset for protecting and monitoring vulnerable employees who spend much or parts of their work time alone. These types of employees can be found in almost every industry, including a lab technician working late hours or an agriculture worker in the field.

A 2018 study from research firm Verdantix found that nearly 60% of respondents regard industrial wearables as significant for their safety in the workplace. And, in a 2019 study, researchers found that wearables improved the safety and health of workers on construction sites.

Many of us in the Northern and Western hemispheres face colder temperatures, darker days and icy conditions when working in the winter months. With these arguably increased safety risks, employers can look at the power of safety wearables to protect their team members while collecting some valuable data.

Here are eight ways wearables can help improve worker safety in winter.

LOCATION TRACKING

Perhaps the most well-known use of wearable technology is for tracking employees' locations, sometimes using satellite technology for remote areas. It is also the most controversial, bringing to mind notions of Big Brother always watching over you. However, accurate location tracking could save a worker's life in an emergency when help must be sent to the right place, right away.

FATIGUE RISK MANAGEMENT

For those working long hours or with an injury, sensor technology can monitor vital signs and alert employees and/or employers to possible fatigue risk. Sensors can also help detect if employees do not feel well or are stressed. Especially for those working long hours, wearables that at least make them aware that they may need to take a break or destress can benefit both the emotional wellness of the workers as well as the work itself.

FALL DETECTION

Slips, trips and falls are a major concern during the winter because of icy walkways and slippery vehicles and equipment. There are a growing number of fall detection devices that will immediately notify employers or managers if workers have fallen and are immobile or unconscious. Fall detection wearables can call for help even when workers are physically unable to.

SAFETY TRAINING

Virtual reality headsets are slowly entering the mainstream with similar technology being utilized for safety training with companies, such as VR Vision and the aptly titled Digital Engineering and Magic. Especially during the winter, it may be difficult to access certain outdoor areas for safety training and education. Wearables empower employers to train their team members virtually anywhere to practice safety protocols and procedures, minus the threat of any safety hazards, such as cold outside temperatures.

ENVIRONMENTAL MONITORING

When working outdoors and in the elements, people are not always aware of what's taking place in their surroundings. Wearables can

monitor the working environment and send an emergency alert if the working conditions or temperatures are becoming dangerous for employees. This is very useful in winter, as both employees and employers can have a closer pulse on any environmental safety hazards, including extreme changes in temperature and extreme weather events, such as record heat levels, forest fires, tornadoes and flash flooding.

EXOSKELETONS

The development of exoskeletons has increased over the past decade, spanning from devices that correct posture and ergonomics to more substantial wearables being worn in the construction industry as well as for those with neuromuscular impairments, whereby robotic-looking devices fit the stereotype of the exoskeleton. Wearable exoskeletons not only reduce worker injuries—particularly in the shoulders and spine—but also reduce mistakes from fatigue or strain for a spectrum of different repetitive physical movements in a range of different industries.

CONSTANT COMMUNICATION

Probably the most important benefit of wearables is maintaining a constant line of communication and connection should anything happen. No matter what types of data the wearable is collecting and communicating, the technology ensures that the vulnerable worker can reach a monitor in an emergency. During the winter—when the weather can be volatile and change quickly—steady, reliable communication is essential for every worker's safety.

FEEDBACK DATA

The benefits of wearables can be experienced daily when a dangerous fall and impact is detected, or employee fatigue is managed. However, beyond that, the safety benefits continue with the valuable feedback data wearables provide to employers so that they can make any adjustments necessary to improve the conditions of employees' work environments—and the work itself.

EMBRACE THE FUTURE—AND BUNDLE UP

Yes, the robotics and wearables field is an evolving one, but it is already making an impact on occupational safety in industries around the globe. Not only are wearables becoming more compact and advanced, but there is a wearable for almost every safety and health need out there. They are also becoming more cost-effective, which means you don't need to break the bank to protect your team.

If your team is working outside in the cold, make sure they not only wear weather-appropriate clothing and personal protective equipment, but also take advantage of any available wearable technology to protect your people so they can go home safe at the end of the day. **EHS**

Gen Handley is a marketing and growth coordinator for SafetyLine Lone Worker, an automated, cloud-based lone worker monitoring service that has helped companies protect remote or isolated workers for more than 20 years.

Heated Winter Gear

Whether there's snow, sleet, ice or freezing rain on the ground, DEWALT's got you covered. DEWALT's soft shell heated jacket and vest with sherpa lining will keep workers cozy. The outerwear has three heat zones and temperature settings to keep



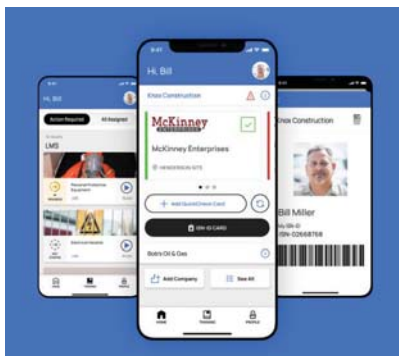
workers warm, regardless of weather conditions and activity level. They also come kitted with a battery charger to help recharge portable devices. Thoughtful design details make staying warm more comfortable, including an extended shirttail for additional coverage.

RADIANS

www.radians.com

Safety App

ISN is empowering frontline workers with its aptly named app, Empower. Empower makes it easier for workers to access jobsite requirements, complete training on the go and view compliance requirements from anywhere. The app allows contractors to provide access to work readiness information and training while eliminating the need for admins to manually collect and track



worker-level information. These features help reduce project delays, reduce downtime because of gaps in workforce requirements, improve worker connectivity and improve safety culture. As an added bonus, the app also allows workers to maintain a record of their personal qualifications, so that they don't need to retake training requirements if they change jobs.

ISN

www.isnetwork.com

Versatile Work Glove

MAGID's latest offering has a distinctive new feel, but it doesn't sacrifice on safety, comfort, grip or dexterity.

The VersaTek work glove palm coating has intelligent technology to read the environment and adapt to amplify a worker's grip whether worn in wet, dry, slick, abrasive or oily conditions.

The VersaTek coating delivers over 50% more abrasion resistance than other glove coatings and offers

above the minimum for the highest Level 6 abrasion level protection. Magid's VersaTek palm coating will initially be available in some of its AeroDex and DX+ Technology styles.



MAGID

www.magidglove.com

Leak Detection

DENIOS has developed a new monitor to alert users of a leaky container or equipment. The SpillGuard Leak Recognition System can be placed within the sump of a spill containment device

or near the equipment to be monitored, including pipelines, heating or cooling systems and hydraulic equipment. The system alerts users with an audible and visual alarm for at least 24 hours if contact is made with a liquid. The SpillGuard is designed to be used with all essential and common liquid hazardous substances and can be used in temperatures ranging from 32 to 104 degrees Fahrenheit. The battery lasts up to five years and emits a signal when it needs replaced; it also emits a red LED light to indicate it is operating safely.



DENIOS

www.denios-us.com

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jdiapaola@endeavorb2b.com

Sam Schulenberg, Production Manager
ssschulenberg@endeavorb2b.com, (734) 887-6915

Melissa Meng, Ad Services Manager
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Frank Chloupek, Group Director, User Marketing and Product Analytics
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EDITORIAL STAFF

Dave Blanchard

Editor-in-Chief
(941) 208-4370
dblanchard@endeavorb2b.com

Adrienne Selko

Senior Editor
(804) 203-9014
aselko@endeavorb2b.com

Nicole Stempak

Managing Editor
(682) 257-3371
nstempak@endeavorb2b.com

David Sparkman

Contributing Editor
dspark@comcast.net

Deja Hsu

Art Director
(805) 679-7614
dhsu@endeavorb2b.com

Travis Hessman

VP, Content
thessman@endeavorb2b.com

EDITORIAL ADVISORY BOARD

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Nicole
Stempak
Managing Editor



Putting the Pieces Together

Sometimes, how you approach one problem is similar to how you approach an entirely different one.

One of the better parts of the COVID-19 pandemic was discovering I liked to do jigsaw puzzles—at least those 1,000 pieces or fewer; I do not have the talent or patience for anything larger or 3D.

But since life has picked up the pace again, I don't attempt puzzles as often. Even when I have the time, I always find other ways to fill it, usually boring things like laundry and paying bills. So, it was a rare treat to do a puzzle over the holidays.

If you'll indulge me in listening to my puzzle process, I think you'll find it may be similar to how you approach the challenge of improving workplace safety. I suspect we may also experience a similar emotional journey. If so, that presents opportunities to learn from one another. I'll share my experiences. Feel free to write to me and share your own.

To be clear, I'm no expert. Still, I've developed some strategies for how I like to approach a fresh puzzle.

First, I take every single piece out of the box and sort each into one of my five puzzle trays. One is dedicated to the border. Three are arranged according to the prominent or primary color on a given piece. The last tray is a miscellaneous catchall.

Next, I assemble the border. The border is a sensible place to start because there the edge pieces are clearly marked. There may be some uncertainty about placement, but those edges themselves are unambiguous.

Once the border is established, I look for the next easiest pieces to assemble. In business, we call that focusing on the low-hanging fruit. This helps me build momentum and confidence. It also helps to eliminate some pieces before I attempt the more complex parts of a puzzle.

I have experimented with a number of puzzle techniques—some I learned from others and some I invented myself. Whether tried and true or something new, my objective remains the same: to keep going until I place the final piece.

Sometimes, I am lucky enough to pick up a piece and immediately find where it fits. More often than not, I have to try 30-plus pieces until I get it. When I start to get frustrated, I purposefully change tactics to give myself a fresh perspective. It's a balancing act, but I try to avoid getting stuck.

As more and more pieces snap together, the overall picture becomes easier to see. That's key because when I'm toiling in the weeds, I can't see anything bigger than the individual piece in front of me. It is all too easy to get hyperfixated and frustrated, especially when I feel like I'm not making any progress.

I often work puzzles while watching TV or listening to an audiobook. I start off by splitting my attention. At some point, my brain tunes out all other stimuli, and I enter a state of deep focus. Pausing to get a drink, use the restroom or stretch my hands before they spasm breaks the trance. I often find that taking breaks—or at least saying I will—often leads to discoveries and renews my efforts.

One aspect of the process that, well, puzzles me is that some pieces don't look like they work. Yet, when you try them, you feel

them click. I may be occasionally surprised, but I don't question it; there are plenty of things in life that I can appreciate yet don't fully understand. My job is to be patient, persistent and trust that if I keep putting in the work, eventually the pieces will come together.

When I'm done, I stand back and admire my work. It's just a puzzle, not the cure for cancer or anything, but I still feel proud that I accomplished something that seemed daunting at times. After a few days, I disassemble the puzzle and put the box back on the shelf. Still, the feeling stays with me and helps propel me toward the next challenge, puzzle or otherwise.

I hope you can relate and maybe, just maybe, learn something from my experiences that helps you to carry on with your important, yet challenging, task of creating a safer workplace. Just remember to take it one piece at a time. **EHS**

Nicole Stempak

Send an e-mail with your thoughts to nstempak@endeavorb2b.com.



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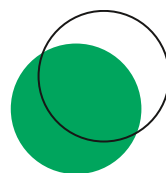
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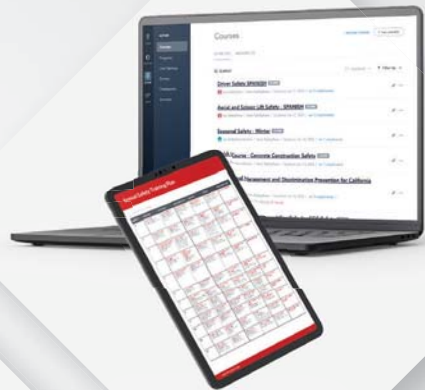


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