

MAY/JUN 2023

Volume 14

Number 3

UTILITY ARBORIST NEWSLINE

FOCUS ON SAFETY

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CULTURE OF SAFETY**

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ON SAFETY**
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IN MANAGEMENT

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to learn more
about how using
contributions from
a diversified group
are shedding
insight in safety
procedures.

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to learn more
about the
winners of the
Will Nutter Silver
Shield Safety
Award.

This is a list of
common industry
terms and acronyms
frequently used in
this magazine.

Best Management Practices (BMPs)
Diversity, Equity, and Inclusion (DEI)
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Integrated Vegetation Management (IVM)

Key Performance Indicators (KPIs)
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Vegetation Management (VM)

President's Message



Tim Walsh

“Safety II focuses on creating resiliency, implementing controls, and recognizing that workers create safety in a complex environment that changes constantly.”



Safety has changed much in the last 20 years or so. Or more accurately, our view and definition of it have. Many of us were “raised” on the old views of safety, commonly referred to as Safety I. This old view of safety focused on preventing incidents by looking primarily at workers’ behaviors. The new view on safety, often called Safety II or Safety Differently, looks more to ensuring that good things happen and focusing on “what” instead of “who.” Safety II is being driven by Human Performance Improvement (HPI), sometimes called Human and Organizational Improvement (HOP).

Safety I laid the foundation of our overall safety culture. It created guardrails and has led to improvements in recordable injuries through the years. A simple look at a 10- or 20-year tracking of recordable injuries shows a strong downward trend. As a reminder, for an injury to show up on the OSHA log, it has to meet this criteria: any fatality or injury that is severe enough to require more than first aid. This number is referred to as TRIR (Total Recordable Injury Rate), or sometimes TCIR (Total Case Incident Rate).

While the Safety I concepts have reduced injuries, they unfortunately have not resulted in a similar decrease in Serious Injuries and Fatalities (SIFs). Part of the reason that Safety I has not been able to move the needle on SIFs is that it tends to be reactive, mainly focusing on trying to prevent incidents and seeing the worker as something that needs to be “fixed.” When something bad happened, such as an injury, outage, or property damage, resources would be spent on identifying the cause of the incident. The employee often ended up being in the spotlight of the investigation as the cause. It was believed that the incident occurred because of employee error (something they didn’t mean to do) or intentional violation. The employee was disciplined in some fashion, and we believed that would prevent the incident from reoccurring.

Human error is normal. We have assumed that error leads to negative

outcomes, but it doesn’t always do so. To quote Austrian physicist and philosopher Ernst Mach, “Knowledge and error flow from the same mental sources; only success can tell one from the other.” We have been looking mainly at outcomes, assuming that bad things happen only when employees make mistakes or errors. When we look only at the negative outcomes, we are missing how work is truly happening in the field. You may have heard of the difference between the black line (how work is imagined to be done) and the blue line (how work is actually done).

Safety II seeks to ensure that good things happen, using the worker’s knowledge and experience to understand better how work actually happens, or the “blue line.” Safety II has changed the definition of safety. We used to define safety as the absence of negative outcomes, but the new view of safety is defined by the presence of capacity. Safety II focuses on creating resiliency, implementing controls, and recognizing that workers create safety in a complex environment that changes constantly.

After negative outcomes occur—and they will, as all systems are running to failure—how we respond to them is crucial. Safety II looks to determine “what” failed first, not “who.” The old view of safety started by looking at the employee’s behavior as the root cause of the event. Safety II does not take away personal accountability, but it views the system in which the employee was working as relevant to the incident. The context of the event is important, not just the outcome. No worker intends to get hurt, cause an outage, or damage property. Unless it was an intentional violation, what they did made sense to them at the time, under those circumstances.

As we are always striving to improve, I challenge us all to move forward together into a Safety II culture! I have included a great reference below for more information on the difference between Safety I and Safety II.

Tim Walsh

Hollnagel, E., R.L. Wears, and J. Braithwaite. (2015), “From Safety-I to Safety-II: A White Paper.” Published simultaneously by the University of Southern Denmark, University of Florida, USA, and Macquarie University, Australia: The Resilient Health Care Net, <http://doi:10.13140/RG.2.14051.5282>.

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Executive Director Message



Dennis Fallon



If I meet other tree people anywhere I travel, there is a camaraderie among us that feels just a bit stronger than in other crafts. I believe that comes from the fact that we perform potentially high-risk tasks that often require more than one person to successfully complete. We are dependent upon others watching out for us and they are dependent on us watching out for them. High-performing teams often have two things in common: (1) they trust each other and (2) they are accountable to each other. They have taken on the responsibility to keep themselves and those around them as safe as possible. They are also willing to pause a task if they feel the situation may exceed or has begun to exceed their control. Trust and accountability require a mindset and a space where individuals have the psychological security to speak up. The confluence of these three variables—trust, accountability, and psychological security—is sometimes described as a workplace culture or team culture. It is easiest to cultivate positive workplace culture in groups where servant leaders hold themselves to the same accountability they expect from those around them and/or working for them.

The industry needs more workers at almost every level. The UAA and its members have been actively involved with efforts to help increase awareness of our field and help drive folks to our ranks. This spring, three short videos highlighting many of the roles in our field, the attitudes of the folks in the field, and the fact we have cool jobs (and others can too) were launched. These videos were unscripted and filmed with a theme to help tell our story. The lack of a formal script led to some genuine perspectives from folks working directly in our field. This genuineness helped illuminate what it is like to make a difference by managing vegetation near energy sources so society can function. One realization while making these videos was it became very clear why there are so few of these videos out there: our stories are

complex. We have all sorts of roles and assignments that can change in an instant. For some of us, that complex daily variability is exactly why we stay in this field—we love the challenge and the people we work alongside.

With the push on recruitment, we are introducing new folks to our teams at a rapid pace. New team members have an impact on an existing group's trust, accountability, and psychological security that needs to be recognized and managed. Historically, very few of us were formally trained in these areas, and training in these areas is still in early stages of development for tree folks. The good news is this need is becoming recognized and thought leaders are working on content to get out to the membership through our committees, our publications, and our event agendas.

Most of us are aware of safety controls. The United States Center for Disease Control identifies five safety controls: elimination, substitution, engineering controls, administrative controls, and PPE. These are accepted definitions and have been taught many ways over the years. Where they may come up short in work culture is people are biological systems, and biological systems are most effectively managed versus controlled. Managing for

positive trust, accountability, and psychological security can have a positive impact on a team's safety capacity.

June is National Safety Month and it comes at no surprise the UAN is bursting at the seams with quality articles and discussions. Safety has come a long way in our industry and will always be on a continuous improvement journey. As you read through this issue, think about the human side of safety and how best to integrate that into our work sites as new team members interact with our existing teams. 🌳

It is easiest to cultivate positive workplace culture in groups where servant leaders hold themselves to the same accountability they expect from those around them and/or working for them.

Dennis Fallon

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ANNUAL AWARD NOMINATIONS

The UAA annually recognizes select individuals who have made significant contributions to the field of utility arboriculture. Current UAA Members have the opportunity to nominate fellow members who are active and in good standing for the following awards:

Will Nutter Silver Shield
Utility Arborist
Education Award
Lifetime Achievement
Rising Star

Watch for more information in your email, UAA Member portal, association happenings, and social media!

SAFETY COMMITTEE UPDATE

By Mark Kimbrough, Vice President-Safety and Training, Townsend Corporation

Last year, the UAA reorganized its committee structure to focus on the organization's strength—collaboration with our volunteers. Members of the UAA are so committed to safety, and promoting a good safety culture and safety climate, that we have a full cohort of professionals and thought leaders in our meetings. With such a large group and with so many topics to cover, the Safety Committee formed several sub-committees last year.

One of the Safety Committee's subgroups was the ISA Collaboration Sub-Committee, which focused on working with organizations like the ISA and TCIA, using safety as a tree care industry common denominator. We were able to develop our "Safety First, Safety Always" series of PSAs pertaining to electrical safety topics, such as "Look Up and Live" and "Step and Touch Potential," and we added "Dog Bite Prevention," "Biological Controls," (thanks to the UAA Environmental Stewardship Committee), and "Woodchipper Safety." These videos target the non-UVM arborist, but they can be shared and used by any of our members at meetings, training sessions, and interactions with the public. We will be working on three new topics this year for the UAA YouTube channel.

New to the YouTube channel is our "Safety First, Safety Always" videos available in Spanish. These Spanish playlists exist thanks to the volunteer work of Mariana Rodriguez and are coordinated by the UAA Professional Development Committee. Rodriguez is a Contract Administration Project Manager for WSC and maintains safety at the forefront of her efforts, both at work and in her personal life, so the PSA safety series was a natural fit. "The initiative of translating these series of videos to Spanish is amazing. It shows the UAA commitment to developing our workforce and prioritizing safety," she added. "By

creating this series, the UAA is reaching a big percentage of Spanish-speaking individuals in the industry or interested in joining. Rodriguez also collaborated with the *Newsline's* 2022 DEI-focused issue, sharing her experience as a minority working in the UVM industry.

As the *Newsline* is an important resource for UAA Members, and safety is a UAA core value, our Editorial Committee added our new "Safety Tools" column, which premiered in 2023. This idea stemmed from each UAA event,

is to bring together our UVM high-potential performers with a variety of views and experiences to develop safety champions within our industry who can positively impact their companies' safety cultures, at the crew level and beyond. These summits promote the constructive exchange of ideas and information, regardless of organizational affiliation, by using a focus group format to achieve results. The goal of each summit is to help organizations proactively develop a safety culture that is measurable by reducing incidents. These summits

work best with utility support, so let us know if your region is interested in supporting the next event, either this year or next. And if you have not attended a safety summit yet, make it your goal to do so this year!

One of our Safety Committee's goals is to emphasize for UAA Members the important lessons and promote industry-wide shared learning. This year we are discussing serious injury potential, struck by wood/line under tension, environmental hazards awareness and exposure, and using more technology for safety education, like providing QR codes to link to manufacturers'

videos on tools and equipment and the impact of micro-learning on our industry.

Members of the Safety Committee also serve on ANSI committees, and Z-133 and ULCSPP (Utility Line Clearance Safety Partnership) groups as well, outside of their UAA involvement. I encourage members of the UAA to be very involved and to seek avenues of outreach and service to enhance the industry. We truly believe this committee is valuable to the industry and to your organization. If you have a passion for safety, please stay tuned to see what the Safety Committee can bring you. ☘



meeting, committee meeting (even some webinars) beginning with a safety message. These messages range from personal tips to the latest safety research findings to topics gleaned from other safety meetings and events for other groups. Safety Committee members will be contributing regularly.

Another safety sub-committee, the Safety Summit Sub-Committee, has three events this year: with East Central Electric in Duluth, Minnesota in June; Duke Energy, I&M, and NIPSCO in Indiana in July; and with Duquesne Light in Pennsylvania in October. The purpose of the UAA safety summits



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SAFETY TOOLS

A Continual Improvement View of Safety

By Dan Shaw, Senior Forester-Proactive Vegetation Management, CenterPoint Energy

Striving everyday to get better at what we do seems like an obvious idea. The people in our industry are hardworking and conscientious. Safe results are the most important thing we pursue ... so what's the big deal about giving improvement an acronym?

The continual improvement process (CIP) is distinct and relevant to safety. It's a process worth examining, because it offers an approach that is easy to implement, inexpensive by design, and well tested in many industries. It can be applied to almost any situation, like safety, where we want to improve outcomes. Thinking about safety improvement as a defined process reveals ways that we can apply a CIP in situations beyond the traditional ones, like manufacturing, total quality, and statistics. Even though these are examples of controlled environments with predictable events, a CIP can work very well for utility arboriculture safety, where we are dealing with complex and sometimes unpredictable environments. Far from rigid and intellectual, a CIP applied to utility arboriculture safety can bolster worker confidence, fortify teams, encourage inclusive communication, and help build a safety mindset into our daily thinking.

The origins of the CIP movement are well documented. The research of Midwestern Americans W. Edwards Deming and Walter Shewhart, in the 1920s, laid the groundwork. Deming brought many of the ideas that would form the foundation of CIP to post-World War II Japanese manufacturing, where Masaaki Imai and other Japanese contributors (e.g., Toyota) distilled and focused

them. Imai's simplification of continual improvement into a practical, cross-functional and results-driven pursuit became known as Kaizen—one of the cornerstones of CIP (translation: kai ['change'] and zen ['good'] is 'improvement').

Here are a few CIP and Kaizen ideas and how they can apply to the pursuit of utility arborist safety.

Desired outcomes germinate in repeating small, bottom-up changes rather than periodic, major, top-down changes. We have all heard great examples of individual workers around us who made a small change that made a significant safety improvement. Continual improvement process reminds us that this is an iterative, or ongoing, activity. Standards, policies, and management are essential and must, in a sense, be top-down. But safety improvement develops from what is happening in real time and from the people doing the work: the CIP idea (from Shewart) is PDCA—Plan, Do, Check, Adjust.

Frontline workers are the best source of innovation. In the CIP approach, it's because they know the work best and can come up with improvements based on their firsthand knowledge. For an assembly line, or a similar contained, predictable environment, the first goal is likely product quality. For utility arborists, a CIP mindset will contribute directly to the kind of quality expressed in the words "Everyone goes home safe at the end of the day."

Improvement starts with individuals, and influence moves outward—and upward—to co-workers, peer groups, and beyond. I like how this idea is essentially the goal of safety culture, translated into CIP language! It's a



great example of how our industry often has an intuitive understanding of CIP and will be able to adapt its practices in many areas. A CIP is intrinsically flat, giving all participants a voice, not just heard but listened to.

Direct participation and involvement of frontline workers results in greater ownership and pride. In traditional CIP environments, these results might come from reaching zero-defect benchmarks or quantity goals. The people in utility arboriculture achieve these results everyday in their commitment to safety, and also in areas of quality, cost, and customer service. A CIP plan for safety can strengthen participation and involvement where it matters most.

Rather than explaining CIP history and concepts in depth, I hope this overview sparks your curiosity about and encourages you to research to learn more. If you find something you can use to help build a safer process for people in your corner of our industry, I'll consider it mission accomplished.

About the Author

Dan Shaw (PMP, CUSP), a 10th generation New Hampshire native, is an ISA Board Certified Master Arborist, USOLN® Certified Utility Safety Professional, and PMI® Credentialed Project Management Professional living in Houston. Shaw has experience in sawmilling, fine furniture making, tree work, and a decade as a staff utility forester. He is a University of New Hampshire/Thompson School of Applied Forestry graduate, and also holds a Bachelor of Science in natural resource economics. Shaw currently serves on the UAA Safety Committee. ☎

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BOARD NOMINATIONS

THE UAA EXECUTIVE BOARD POSITIONS WILL BE OPEN FOR VOTING SOON.

The UAA Board of Directors is responsible for the sustainable operation of the UAA including finances, day-to-day operations and guiding the future direction of the association. Check your email that UAA has on file and be sure to nominate yourself or another individual before May 22, 2023.

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TAKING A "NEW VIEW" OF SAFETY

At Lewis, "New View" is an operating philosophy that changes how we see the world. It's a way of thinking about work and safety, and our actions and activities, as leaders wherein the leader is a listener and a learner. It is a way of doing things to improve work so that our workers can do what they do every day, better and safer. It's a way to evolve our programs and practices to prepare for emergent risks, understanding that the surprise will happen. We collaborate, we challenge, and—most of all—we learn.

We believe workers create safety through having options ready, such as different equipment to do a job more safely or workers who are multiskilled or extra leaders in the field during storm response. Adaptive capacity also comes in the form of knowledge. To this end, we train on technical skills, such as roping and rigging and how to perform a variety of cuts, as well as on cognitive skills, such as self checks, risk assessment, and situational awareness.

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Our New View of Safety

Safety is not defined by the
absence of accidents.

Safety is defined by the
presence of capacity.

Workers aren't the problem.

Workers are the problem
solvers. People are a
source of success.

We don't constrain
workers to create safety.

We ask workers what they
need to do work safely,
reliably, and productively.

Safety doesn't prevent bad
things from happening.

Safety ensures good things
happen while working in
complex and adaptive
work environments.

Water Safety and the Law



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By Lawrence J. Kahn, Esq., Executive Director, Tulane University Law School Utility Vegetation Management Initiative

“Water, water, everywhere nor any drop to drink” laments the main character in Samuel Taylor Coleridge’s famous poem, “The Rime of the Ancient Mariner.” In the poem, the main character shoots an albatross, and the ship is then cursed. The sailors find themselves stuck at sea without food or drinking water, and the crew ultimately dies from thirst. It’s an important lesson in safety (also a reminder not to harm migratory birds, but that’ll be the subject of a future article).

Water, as we all know, is critically necessary for survival and keeping ourselves healthy. The federal government, through OSHA, requires that employers provide potable water to employees. The federal standard is at 1910.141, which states “Potable water shall be provided in all places of employment, for drinking, washing of the person, cooking, washing of foods, washing of cooking or eating utensils, washing of food preparation or processing premises, and personal service rooms.” Water is “potable” (meaning safe to drink) if it passes certain tests set out in 40 CFR Part 141, as well as any and all state and local standards that exceed the federal standard.

In an office building, the OSHA potable water standard is

generally satisfied by the building’s tap water system, which typically ties into the local municipality’s water system. In trailer-based offices, which is typical at construction sites and muster yards, the OSHA potable water standard is often satisfied by using either large water cooler jugs or by using bottled water.

Arborists, however, are generally employed in the field. In the ordinary situation, this means that arborists’ employers must provide them water that is both potable and transportable. While your employer must provide potable water, the manner in which this is accomplished is not required to be consistent from one crew to the next, nor is it required to be in the same way every day. So long as your employer is providing you with potable water, the “provision” part of the requirement is met.

The Occupational Safety and Health Administration also specifies how water needs to be provided. If your employer wishes to use a dispenser, OSHA requires that “portable drinking water dispensers shall be designed, constructed, and serviced so that sanitary conditions are maintained, shall be capable of being closed, and shall be equipped with a tap. . . . Open containers such as barrels, pails, or tanks for drinking

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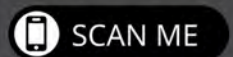
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water from which the water must be dipped or poured, whether or not they are fitted with a cover, are prohibited." If employers choose to use a water dispenser, then it must be both covered and have a tap. Also, the dispenser must be serviced in a manner that maintains sanitary conditions—cleaned regularly to protect employees from becoming sick from drinking the water that's been provided. Employers using this method of providing water should carefully review and implement the manufacturer's recommendations for cleaning and servicing the dispenser, and should repair or replace the dispenser if damage occurs that risks the health and well-being of the employees using it. Employers should also make certain that the device used to pour potable water into the dispenser is likewise cleaned on a regular basis, in accordance with manufacturer recommendations.

When an employer uses a water dispenser that is aimed at providing more than one employee with water, it is also important to note that OSHA prohibits the use of common drinking cups. In order to meet this requirement, employers should consider the use of either single-use disposable cups (often made of paper) or personalized reusable cups. For employers choosing disposable cups, consider the possibility of using paper or other recyclable or compostable material, and be sure your inventory is sufficient and your supply chain is reliable for the constant replacements that will be needed. As an employer, if instead you wish to provide your employees with reusable cups, you will need to ensure that these cups won't be considered "common"—they'll need to be personalized to the employee, which could be done with the employee's name on the cup, or alternatively, through the use of color or design. An employer's efforts should be reasonably calculated to prevent a single reusable cup from being used by more than one employee during the day (consider having some disposable cups on hand in the event of the loss of, or damage to, an employee's reusable cup, or any cup mix-ups by employees). Also, it will be necessary to ensure that reusable cups are cleaned on a regular basis.

As an alternative, employers could also consider single-use bottled water. This generally more expensive option seems simpler from an operational perspective, but it is not completely worry-free. Employers opting to provide disposable plastic water bottles should consider water stored in BPA-free bottles. Bisphenol A is a chemical found in certain plastics that has potential to interfere with a human body's hormones. While the FDA, which regulates bottled water, states that BPA in low doses is not harmful to adults, it has banned the chemical from use in infant bottles, sippy cups, and other containers used by children. The National Institute of Environmental Health Sciences (NIEHS) recommends avoiding BPA altogether. It should also be considered that single-use plastic degrades over a relatively

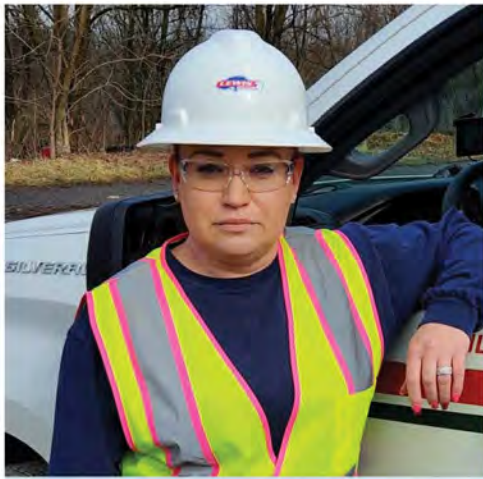
short period of time. Single-use bottles of water are meant to be just that: single use. They should not be repeatedly refilled because of the risk of chemical leakage into the water from the bottle itself. This is particularly because when the plastic water bottles have been stored in the sun or in a hot location, the heat can potentially break down the plastic bonds, possibly resulting in chemical leaks into the water. The World Health Organization states that the health effects of such chemicals on the human body are not yet fully known, but the NIEHS recommends storage of bottled water out of direct sunlight and away from sources of heat and, in any event, to consume or dispose of bottled water before it is more than two years old. Similarly, single-use bottled water should not be subjected to freezing temperatures for the same reason—the freezing of the plastic can also accelerate the breakdown of the plastic and introduce potentially harmful chemicals into the water. Additionally, single-use bottled water should be stored away from household and industrial chemicals, solvents, and fuels because plastic is semipermeable, and gases from such chemicals can pass through the plastic into the water.

Regardless of the manner in which your employer has provided you drinking water, if the water that your employer has provided smells bad, looks wrong, or tastes strange, don't drink (or continue to drink) it. Instead, discuss the issue with your employer in a timely manner so that your employer has the opportunity to investigate and, if necessary, correct the issue (if there is one).

Employers are required, by OSHA, to provide employees with water because of the importance of consuming drinking water to stay healthy. A study conducted by the Bureau of Labor Statistics (BLS) found that there was an annual average of about 75 outdoor worker deaths due to heat stress or heat exposure, a number that has doubled since the early 1990s. Additionally, BLS found that there are at least 3,500 heat injuries and illnesses each year that lead to lost days at work among outdoor workers. Many of these deaths, injuries, and illnesses could have been prevented through proper hydration. OSHA does not have a standard for how much water an employer is required to provide to each employee, but nearly every state has such a standard. Most state standards require employers to provide at least one quart of water per hour per employee as part of their heat illness prevention plans, and several states mandate that the water must be "cool or cold."

Don't become dehydrated—your dehydration impacts your entire team. It prevents you from making good decisions at work, and if you are driving or operating (or near) heavy equipment, your dehydration can lead to your own, or someone else's, injury. Observe the lesson of the Ancient Mariner and stay hydrated. ■





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Measuring a Culture of Safety: “How Do You Know?”

By Paul S. Hurysz, Jr. (MBA, CSP); Department Manager of Human Performance and Safety – Consulting Services; Davey Resource Group, Inc.

One of the most challenging questions for a safety leader or professional in any industry is to honestly answer the question “Is my workplace safe?” It is challenging because we all want to say “yes” and we all want to be happy with our safety results. It goes without saying, no one in their right mind wants anyone to get hurt. In the vein of casual analysis, wouldn’t it also be prudent to ask another, maybe a more difficult, question as well: “How do you know?” It is a really good question to ask if your organization has a continuously improving mindset. If you base your “How do you know?” response on lagging indicators (e.g., TRIR, DART, EMR) as a measure of success, your opinion of your culture may be based on only what has happened in the past. Those metrics may give you a false sense of security and little insight of what could happen in the future, because it is a possibility that the view of the future may be based on the luck of the past.

A famous football coach, Lou Holtz, once talked about the philosophical question of how you know you are truly happy. He stated if you want to be happy for a day, go out and grab a good meal; if you want to be happy for a year, go out and win the lottery; however, if you want to be happy for a lifetime, go out and do something that is going to make people miss you when you are gone! This coach’s observation rings true for many of us as safety leaders and professionals, because the one thing

that I think we all want to do is have a positive impact on an organization’s culture of safety, that continues to mature and continuously strives for improvement.

That leads us back to the question “How do you know?” When it comes to a culture of safety, you cannot rely on historical lagging indicators to get clear answers. Lagging indicators (metrics) do have value and we should recognize that they have been used in our industry for years to measure success and failure, we believed. These lagging indicators are a measure of what happened (injuries, mainly), but not what didn’t happen—which is where true safety lies. With that said, consider this thought: if you rely on lagging indicators that only produce a view of the past and you have an event tomorrow, has your safety culture really changed overnight because of that event? I don’t think so. The reality is that your culture is probably stronger or weaker than the metrics that organizations traditionally rely on to help manage your culture of safety.

It has been my mission during the last couple of years to help organizations and individuals visualize what their culture looks like so that it can become more manageable and improvable by focusing on leading indicators. This effort has been life changing for me, and I’m sure it will be for others as well, because it is hard to change something you cannot visualize. And if you can’t visualize it, it is certainly harder to manage



from my perspective. Safety Management Systems (SMS) help me accomplish the task of being able to visualize a culture of safety, and let me explain why.

The sample SMS displayed as part of this article is made up of nine elements that most of you should be really familiar with (Figure 1). Each element identified here is most likely a staple within your organizations—each one being critical to the success of your safety culture. For example, can you imagine an organizational safety culture without elements such as leadership, training, or employee engagement? Each organization may call it something different, but rest assured those elements make up part of your safety culture. Additionally, take note that my representation of this sample SMS is not a linear representation, it is a circular representation of a system. Why is that important? Well, I have a hypothesis to share with you: a successful culture of safety is a function of the effectiveness of the interdependency that each of the elements of an SMS have with each other. When these elements are represented linearly, much like a standard organizational chart, they tend to live in silos generating a result that is unique only to that element, and not inclusive of the system as a whole.

A good example of a siloed organization would be a training



Figure 1. A sample Safety Management System with elements critical to the success of safety culture. Illustration courtesy of Paul S. Hurysz, Jr.

department that doesn't work with leadership to understand their vision of growth. Additionally, results may be diminished if the training team doesn't check with employees to gain a better understanding of whether or not the training they are producing is what the employees need in order to be successful in their jobs. And lastly, maybe the training team doesn't seek feedback from field observers to ensure that the training rolled out to performers is being practiced for fluency in the field, as opposed to just compliance.

Some of you may be thinking that "system thinking" is overwhelming and hard to put into context. You have been spending years of your careers

thinking that a good culture is based on positive lagging indicators and a bad culture is based on negative lagging indicators. The reality is that you probably already understand a systems-thinking approach much more than you may give yourself credit for. For example, the body that you were issued at birth/conception and the car that you drive to work every day all operate off of system thinking. How well does your body function with a pulled muscle or a pinched nerve? Less than perfect. The same holds true for a car with a flat tire or a dead battery; the system doesn't function or perform like it should.



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The same holds true with a safety management system. All of the elements (e.g., leadership, training, employee engagement, etc.) that make up that system are interdependent on each other in order to perform efficiently and at culturally mature levels.

With that line of thought, if you want your car to run better, you fix the tire or replace the battery. If you want your body to run better, you heal and/or strengthen that muscle. The same holds true for your safety culture: if you want to mature or improve it, you have to know what to fix, how to fix it, as well as understand how each element is interdependent on one another. If you don't understand the interdependencies of your elements, or even worse, you don't know what elements make up your system, it is going to be difficult for your safety culture to improve or mature over time.

Lastly, I have a warning for you around system thinking that you should be aware of (this warning is also true for just about everything else in life that you can think of): there is no such thing as a perfect system. What works for my organization may not work as well for yours, and vice versa. As with everything else in life, influence and bias have to be accounted for. A visual example of how bias can influence your decisions around system thinking is shown in Figure 2.



Figure 2. The reason behind why you are missing certain pieces of data may be more important or meaningful than the data you have collected. Illustration courtesy of Paul S. Hurysh, Jr.

Honestly, this type of bias might creep into a lot of our analyses around culture if we are not careful. The story behind the plane is that during World War II, planes would come back from battle with bullet holes. The Allies identified the areas of the planes that were most commonly hit by enemy fire and mapped them out on the plane. They sought to strengthen the most commonly damaged parts of the planes to reduce the number that wouldn't make it home. A WWII mathematician, Abraham Wald, had the courage to ask why the planes that didn't return home were not part of the analysis. His insight led to the armor being reinforced on the parts of the plane where there were no bullet holes. The point that we should all

learn from this experience is that the story behind the data is arguably more important than the data itself. In other words, the reason behind why you are missing certain pieces of data may be more important or meaningful than the data you have

collected.

Now let's apply what we have discussed to see if we are better equipped to answer the question of "How do you know?" The next time an incident or an event occurs within your organization, what do most of us initially look for to fix the problem, and why? Honestly, most of us probably look for the "Easy Button," because we want the pain associated with the event to just go away.



It's really that simple. When an event occurs, the first thing that you need to do is slow your reactions to the problem(s) down and put your system thinking hat on and try to understand what happened systematically, so you can become an organization that learns to be successful under any circumstance—for example, a system thinker who is more likely to ask for a training assessment before a corrective action for training is accepted. Assessments can be leading indicators, when performed, that allow organizations to make sure they are using their training resources efficiently and effectively.

Another leading indicator, from a cultural perspective, is whether your organization is more likely to blame the person(s) involved in the incident or look to leadership for accountability for the problem. Furthermore, does your causal analysis team search for data beyond the root cause? And lastly, will your team have risk management discipline by encouraging the use of more effective controls to mitigate the same or future hazards associated with the work? All of the actions mentioned above are measurable and ultimately lead to developing a team or organization that learns from observations and actions, along with technological support, to help them learn to fail safely without the consequences of pain.

Happiness to me is making a difference, while the effective use of system thinking can certainly have a positive impact on improving your safety culture through measurable proactive actions. If you would like to have more detailed conversations about the culture of safety, please feel free to reach out to (or join!) the UAA Safety Committee. We meet monthly and all are welcome. If you would like to contact me directly, please email paul.hurysh@davey.com.

A man with dark skin and curly hair, wearing a blue puffer jacket, is shown from the side. He is touching his right hand against the rough bark of a large tree trunk and looking upwards with an expression of awe or contemplation. The background is a soft-focus forest with green foliage.

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AN APP A DAY

How Apps Are Changing Safety Oversight in the UVM Industry

By Sarah Lilley, Supervisor of Research and Development, CNUC



Sarah Lilley

Last fall I was excited to gather with so many other collaborators in this industry at Trees & Utilities. In addition to the typical learning and networking, I was thrilled to take the stage in Milwaukee and present with my colleague, CNUC's Safety Manager Bill Spencer. The use of apps in utility vegetation management had been on our minds, as several had recently been introduced as part of our safety program. However, like with anything new, there were growing pains in their use and adoption. As Spencer and I talked, it became apparent that apps were becoming more and more ubiquitous, replacing other methods of data capture and analysis. This is nothing new, as the popular phrase "There's an app for that" dates back to 2009 commercials for the iPhone. However, it feels as though as a society and industry, we're reaching a threshold where app usage needs to be analyzed. Are they helping us or holding us back?

Utility vegetation management has been moving towards digital for a while, as inspections, work orders, and program KPIs are now largely tracked via complex software suites. All employees carry cell phones, and most also have access to a computer or tablet.

There has been a huge investment in data management software which can streamline multiple aspects of a UVM program, and many utilities have adopted their use. But what about standalone apps, specifically those targeted to facilitate safe working practices?

As a tool, apps are pretty basic—they can collect and send information. So, what makes them so powerful in comparison to other historical methods? Pros to app usage include:

- Cell phones and computers are ubiquitous. There's little need to invest in new devices, and limited training is required in their use.
- Ability to capture multiple forms of data. Besides typed information, devices can record audio, photos, video, and location. Some can even measure temperature and g-forces.
- Environmentally friendly. There's no need to print or store bulky paper records.

- Easier to search and analyze. Either with built-in dashboards or by downloading the data, you can quickly search for specific records or look at data trends over time.
- Easy to personalize and update. Apps can be tailored with company branding and safety requirements, and any updates can be pushed out instantaneously to all users.
- Harder to lose or destroy. Data is backed up automatically in the cloud, which supervisors can access at any time.
- Real-time tracking of data. Apps can identify unsafe behaviors as they are logged and generate alerts when anomalies are detected. This allows for near real-time response rates.
- Gamification of data collection. By adding a competitive or rewarding aspect to safe behaviors, you may improve buy-in with certain employees.



With all of the benefits that apps and digital data capture provide, there are some drawbacks to their use. Initially, there may be hesitation in adopting new technology and processes, with the complaint that “the old way was better.” Collecting more data may become a burden or liability. While the data capture is streamlined and digital, it still takes effort to process and contemplate the data that an app collects, and then the

information must be acted upon. Once unsafe behavior is identified, it becomes a liability if not addressed.

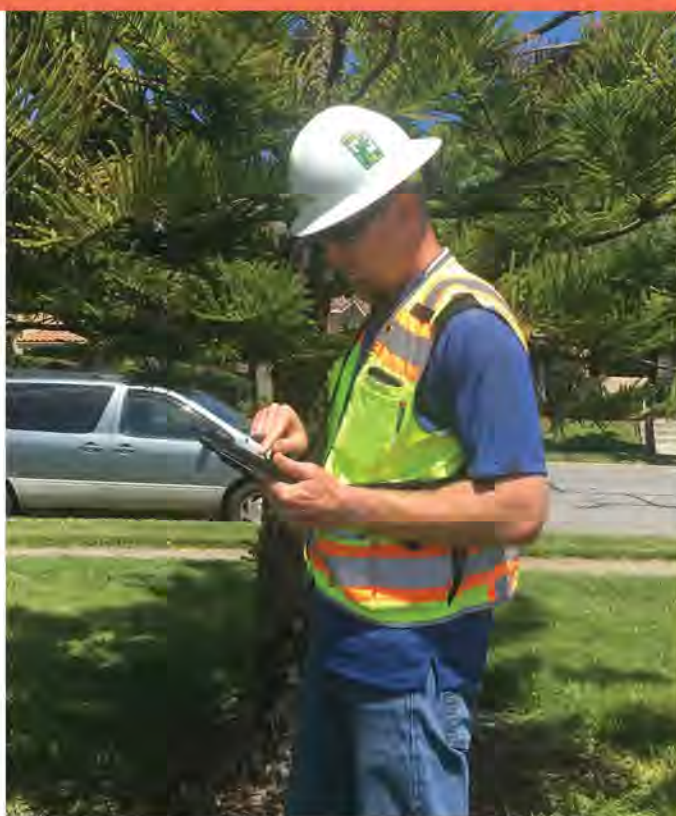
Another concern with the power and prevalence of apps is privacy issues, or the fear that a company is adopting a Big Brother role to oversee employees. There may be concerns that employees are being spied on by the tech: are supervisors watching them on camera, monitoring texts and emails, or listening in on conversations? Is every second of driving behavior being monitored for a lapse in judgement?

Before introducing new tech, it is important to define data collection and privacy expectations between supervisors and employees. Like with user or privacy agreements that you consent to when downloading a new app, employees should be informed of what data is being collected on them, and when. It may be helpful to point out that only unsafe behaviors are brought to supervisors' attention, and that it is impossible to constantly monitor the activity of all employees all the time. Explain that these apps provide a safety net for employees. Instead of monitoring how many times an employee may visit a restroom location, a geolocation app is used to find an employee if they don't check out for the day or are nonresponsive. This is especially valuable since most of our workforce works in rough terrain, perhaps without cell service, and sometimes working alone.

Before an app is made part of the program, it should be evaluated thoroughly to determine if it is a good fit. Does it provide the necessary information and is it easy to use? Will training be required as part of the rollout? What errors might occur with the app, and do you have IT support available to help with that? Is the app able to manage your organization's size and scale? Will the app send out notifications, and are they helpful or annoying? How does this app fit in with the other apps and protocols already in use?

As with all things, using apps in a company's safety program requires balance and constant reevaluation to maximize their use. One issue that we've experienced is identifying and adopting individual apps which serve only one function. Pretty soon, employees are swamped and distracted with the multiple apps and become less likely to visit each of them to enter information. At that point, evaluate whether data collection can be combined into a single app, or if another solution can be identified.

Besides becoming disinvested by app oversaturation, employees tend to let their safety mindset go on autopilot as they interact more with their devices. For all the power of apps and digital data, they lack the human element that is required in a safety program. Most



would agree that a first aid training held in person is more effective than one presented via videos and online quizzes. Similarly, being reprimanded for unsafe driving behaviors is more impactful when done face-to-face than by alerts or emails on a device. Balance and mindfulness are required to determine the proper ratio of digital to personal interactions. What data is required to be collected, and can it be digitized? And what information would be better served by a real conversation? The answers may differ for every organization depending on their supervisory structure, number of employees, willingness of employees to adopt technology, and safety requirements.

After presenting on this topic in Milwaukee, we received comments from folks in the audience who were adopting or reevaluating apps in their safety programs. Some had tentatively tried a few apps and were looking for feedback on whether they were on the right track, which led to app comparisons with others who were inundated with apps.

Hopefully organizations are willing to test out recommendations from colleagues and consider what programs would work for them. Just as we received feedback from the audience, it reminded us of the importance of getting internal feedback on app usage. The people who use the programs every day are best equipped to explain what works and what doesn't. And by polling a larger audience, you may be able to discover solutions that a solo safety manager can use. We reached a consensus in Milwaukee: apps are here to stay, but they're not enough to keep the safety manager away. 🌿



Professional Utility Vegetation Management Credential Program Update

By Jessica Tomaszewski, UVM Program Manager, University of Wisconsin-Stevens Point

Congratulations to the 2023 grads who earned their Professional Utility Vegetation Management Credential through the UAA in February!



Darrell Daniel
Vegetation
Program Manager,
Sacramento
Municipal Utility
District



Alejandro Hernandez
Tree Crew Foreman,
Mowbray's Tree
Service



Jesse Barajas
Project Manager 2
& Arborist, City of
Alameda, California



Michael Nunes
Bay Area Supervisor,
West Coast Arborists,
Inc.



Kimberly Johansen
Vegetation Program
Manager, Pacific Gas
and Electric



Patrick Van Horne
Supervisor Vegetation
Management,
Sacramento Municipal
Utility District



Leo Martinez
Senior Vegetation
Management
Inspector, ACRT
PacifiC

While their Professional Utility Vegetation Management (Pro-UVM) Professional Development Program (PDP) UAA Review presentations got postponed twice, these dedicated seven program graduates persevered. When they learned the Board of Governors had approved their credentials, the group remarked at the depth and comprehensive nature of the Pro-UVM PDP through the following testimonials:

"I am very grateful to staff from UW, the UAA, and PG&E for the high-quality exposure to UVM education and exposure to new facets of the industry." – **Jesse Barajas**

"I was surprised by the knowledge I acquired in all of my courses and was shocked to learn all the stakeholders involved to manage a successful UVM Program." – **Alejandro Hernandez**

"The Pro-UVM Credential Program has provided me the opportunity to be exposed to and develop an understanding about program management within the UVM space, that previously I had little to no knowledge or understanding of. The knowledge I've gained in the program has helped me adjust, grasp, and execute new program tasks as a supervisor much faster." – **Patrick Van Horne**

"The certification program helped me to better understand the industry, my department, and my job role. I was inspired by course instructors and participants!" – **Leo Martinez**

"For individuals within UVM, this course is a great way to expand your knowledge of this industry and put it into practice." – **Kimberly Johansen**

"The networking and information access will allow students, such as myself, to benefit long term and have sustainable resources moving forward to ensure we can effectively support and manage a VM program. I highly recommend it for those new or veteran to the industry to develop themselves in a well-rounded manner." – **Darrell Daniel**

The Pro-UVM PDP is a comprehensive management training program designed and facilitated by UVM industry leaders. The UVM professionals who facilitate courses lead participants through acquiring the knowledge and skills needed to plan and manage sustainable UVM programs. The Pro-UVM PDP program addresses the domains of the UVM industry's best practices in safety, IVM, compliance, stakeholder communications, budgeting, quality assurance, and records management. The Pro-UVM PDP program emphasizes applied learning to their current employment situation while also asking participants to think and plan to advance into expanded management positions.

Benefits extended beyond graduates' individual professional development to improve knowledge and operations in the UVM programs graduates managed. Participants' credibility with upper management and stakeholders grew exponentially when they presented to their companies and co-workers as they wrapped up the UVM PDP. The applied reports and registers that graduates produced in their coursework went straight into application in their programs. And all of the progress was enacted with a deeper understanding of why the application the report/register was designed to help solve or communicate. With the support of their employers, these graduates got a tremendous boost of self-confidence to take on the challenges of their UVM programs.

Foundations of UVM Certificate

UVM Professional Certificate

UVM Program Planning



The program is comprised of three stages: a **Foundations Certificate**, a **UVM Professional Certificate**, and **UVM Program Planning Credential** preparation course. It is 100% online and courses are designed for applied learning for working professionals. There are no set days and times to engage with the course, so participants can do the weekly course requirements on their own schedule.

COURSE LOGISTICS | To be successful in the UVM courses, participants need to read the weekly module, participate in discussions, assemble weekly project tasks, and complete a final project. Each week, facilitators give feedback on the project task so that information can be incorporated into the final project. Participants can expect to devote 8-15 hours a week to their coursework, and they use Canvas as the learning platform. In a program orientation, participants will learn course navigation, complete a time-management exercise, and ensure they have the resources for success.

SUMMARY | If you get the opportunity to touch base with graduates of the Pro-UVM PDP, please bend their ear about the program. The UVM PDP expanded their experiences through applied learning opportunities, putting their new knowledge and skills into action. The UVM industry will move forward in positive ways from their leadership. By working through all the UVM program domains, our graduates will be well versed for leading in the UVM industry and a fulfilling career, making sure that our utility corridors are safe and wonderful assets to our communities.

The Pro-UVM PDP is a cooperative effort among the UAA, Utility Vegetation Management Association, and the Wisconsin Forestry Center at the University of Wisconsin-Stevens Point. 🌲

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A New View of Safety and New Directions in Utility Line Clearance

By E. Asher Balkin, Senior Research Engineer—Cognitive Systems Engineering Laboratory (C/S/E/L),
College of Engineering at Ohio State University

Decades of effort and many lives lost have left the tree care industry in an unenviable—but not unique—position. As with other industries performing high-risk work, utility line clearance has found itself trapped in an almost predictable pattern of relatively long periods of stable work with few serious accidents or fatalities, punctuated with seemingly random occurrences of serious injury or loss of life.

Understanding how tree care found itself facing this dilemma can make the path forward more clear. Modern industrial and occupational safety programs trace their origins to the repetitious factory work of the early 1900s. In these settings where work environment variability is low and task variability is almost nonexistent, this approach did offer significant benefits, especially among low-skill workers. More recent research has shown that even in enclosed routine manufacturing environments, in order to produce consistent results, workers are forced to adapt work practices far more frequently and dramatically than was ever expected, and even repetitive work is often anything but.

This model of how and why accidents

happen is now called traditional safety, also known as Safety-I (“Safety One”) and has been a significant contributor to industrial safety. However, a paradox exists; as we get better at using techniques of traditional safety, those same practices become increasingly less effective at creating safety and, more critically, doubling down on those ideas harms safety. The Safety-I approach focuses almost exclusively on employee compliance with established rules, regulations, and procedures. The implicit belief of this system is simple: workplace accidents occur when workers fail to comply with instructions. Appropriately, the role of safety personnel specifically and safety departments in general is to perform two functions: (1) to enforce the rules, often by using safety audits and punishing those who don’t comply, and (2) to maintain documentation that proves those audits were completed and that the poor performers were punished, retrained, or both. This practice has led to a simple and derisive, commonly used, mantra, “Name, blame, shame, and retrain.”

Because work—even high-risk work—often goes well (i.e., no one is injured, no property is damaged, the task is accomplished), it’s tempting to see this as a sorting problem. As alluring as it may be to look out at a workforce and see two groups of workers, reality is not so black and white. The first and larger group might be the good workers who can be taught to work hard and follow the proper procedures when working. The second, smaller group might be called “bad apples,” who act with little regard for their own safety and the safety of their colleagues. As attractive and popular as this idea is, more than fifty years of research has shown these characterizations not to be true.

In contrast, Safety-II (also called “new view safety”) takes a different approach. Rather than focusing on the individual’s strict adherence to processes and procedures, regardless of the circumstances, new view safety looks to design a system which can reliably



and safely deliver consistent quality work under a wide range of conditions. This kind of thinking recognizes that even the most dedicated, highly trained, focused workers will make mistakes. They will misunderstand the situation in which they are working. They will underestimate the weight of branches. They will be surprised by the path a piece of wood takes as it falls. And they will miss the hidden hazards in what looks like an everyday job setup. **Safety-II/new view thinking accepts that expecting a human being, no matter how qualified, to make every decision correctly is an unrealistic expectation.**

Safety-II builds on the foundation of Safety-I while adjusting the basic ideas we use for understanding how and why work systems have accidents:

- We accept that it is a work system that had an accident, not a worker or team. In the same way that safe work is the responsibility of the whole system, safety is maintained or lost by the efforts of the whole system.
- While Safety-I sees surprises as events which occur when crews aren't paying attention, Safety-II sees surprise as a *normal* part of work. And as a result, we are able to build work systems around the idea that sometimes people will be surprised and, as a result, may not be able to make the best decision.
- Foundational to this new view of safety is the idea that experienced frontline workers in high-risk work are masters of their craft. They are experts in both the technical skills to perform the task and recognizing when the pressures of the work are forcing them to work in unsafe ways.
- Being able to adapt to new, different, and challenging working conditions often requires adjusting from standard operating procedures (within due bounds). Workers must meet the variability of the challenge with the variability of their actions.

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Ben Davis Promoted to Southern New England Regional Manager

Lucas Tree Experts is excited to announce the promotion of Ben Davis as our new Southern New England Regional Manager.

Davis joined Lucas Tree Experts in 2012 at the crew level and he has steadily advanced in role and responsibility since that time. He has demonstrated success and achievement in all his leadership positions and will use this experience in his new role, overseeing distribution operations throughout Southern New England and beyond.

Prior to college, Davis served with the U.S. Marine Corps, worked as construction manager for The Chesler Group, based in Cleveland Ohio, and eventually joined Lucas Tree Experts when he relocated to Connecticut, where he now resides.

Lucas Beane (COO) stated, "Ben is a highly engaged leader who strives for excellence in all aspects of our work. He excels at delivering safe results and strong customer service while inspiring his team to grow and develop. We are proud to promote him into this position and we're excited to see him take the division to new levels and regions."

When asked about the promotion, Davis said, "I love working with people and helping them see their full potential. I am fortunate to be surrounded by great employees, amazing customers, and a company that has given me so much opportunity."

Lucas Tree Experts is a third-generation family business that opened in 1926 in Bangor, Maine. The company is currently headquartered in Falmouth, Maine, and provides vegetation management services to utilities in nearly 20 states and provinces in the Eastern U.S. and Canada. 🌳



Ben Davis

Given these points, we realize the necessity of developing ways for the frontline workers to share their feedback on what is going well and what is not. After all, if the frontline workers are your experts, wouldn't you want to get their advice? Shouldn't they be among the people you look to for improvements to processes, solutions to known problems, and new ideas?

Following directly from that is one of the most important precepts of Safety-II. Rather than simply focusing on and learning from accidents, Safety-II encourages **learning in advance** of accidents. Safety-II approaches actively explore work that has gone well, especially when the task was successful because a crew member was forced to innovate or adapt to an unusual situation.

Compare that style of thought, which recognizes the necessity of adaptation to getting the job done, to the core logic of traditional safety which, as David Weber noted, assumes "Procedures are correct, complete, and applicable to any work situation. System developers are capable of anticipating and designing for all contingencies." Safety-II recognizes that all procedures will be *incomplete*, and to complete work goes beyond what any procedure can specify.

But more importantly, Safety-II recognizes that the way forward with safety in high-risk work is not a simple solution of regulation and compliance; it is a complex management question which encourages executives to engage with work crews, actively solicit feedback, help craftworkers recognize signs that things are changing, support crews in having options ready, and most critically, build systems that are robust and resilient to mistakes and accept that experiencing an error has little to do with competence or being a good employee.

Despite the many challenges faced by tree workers, the industry is not without opportunity or innovation. Organizations—both utility enterprises and vegetation management contractors—have begun to explore new ways of thinking about safety. Northeast area energy supplier National Grid has begun to explore how the practices of Safety-II might not only support safer work practices but also develop the kind of organizational resilience that can facilitate better responses to storm and other types of service outages. After a fatality nearly five years ago,

If every tree really is different, let's stop pretending that adaptation isn't a critical part of performing tree work. If adaptation is a critical part of tree work, then why are we punishing people for it?

Lewis Tree Service began approaching safety differently. By transitioning from assigning blame to focusing on learning, Lewis has been able to rebuild its entire safety program. Members of the safety team have largely abandoned their roles as auditors and enforcement officers and now act as expert coaches and guides, routinely called on by general foremen and other operational leaders to offer assistance on difficult operations and more dangerous trees.

Beyond those early adopters, the industry as a whole—utilities and contractors—is beginning to awaken to the reality that rather than building safer work systems, continually doubling down on traditional safety strategies is, in fact, limiting the success of their safety programs and likely harming tree care crews.

The vegetation management industry is ripe for the kinds of benefits that Safety-II thinking offers. While the effort needed to overcome a century of traditional safety thinking in tree care will be significant, the advantages will be immense. Programs in other industries have seen dramatic reductions in serious injuries, lost-time events, and property damage claims. Safety-II style programs in commercial aviation, petroleum/natural gas extraction, and electrical power generation have all shown significant improvements in safety performance after Safety-II programs were implemented. Before we can experience those benefits, we must stop asking traditional safety questions such as "Where can I find better/safer workers?" and start asking new questions such as "How can I build a safer work system?" and "How can I make my employees designers of safe work rather than simple participants in the system?" which will prove more fruitful.

ABOUT THE AUTHOR

E. Ashler Balkin has worked on a wide range of safety and complex systems projects, including programs for the Federal Aviation Administration, regarding the safe and resilient use of drones in a domestic airspace, and multiple projects for NASA, involving spacesuit design and launch operations. His work in the medical field includes pioneering research on the safe use of surgical robotics for prostate and other cancer surgeries. Most recently he has worked with his colleagues at Ohio State University to develop an expansive program to move innovative thinking about safety and accidents out of university and research settings and into operational and industrial environments. ■



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10 Safety Audits to Reduce Risks & Improve Crew Safety

By Bob Urban, Senior Manager, ACRT Services

When it comes to safely performing tree work of any kind, best practices are essential. Keeping people safe on the job is a top priority—whether you're a utility or a company that provides services to utilities. The daily and long-term benefits of using a safety monitoring program will not only improve the lives of the worker on the truck but also the stress and cost for management and ownership of organizations. From improving worker career longevity to stabilizing or reducing worker compensation insurance premiums, safety programs pay.

Too often, taking a closer look at how a given crew works and operates according to safety best practices and procedures is prompted by an accidental injury or even death. Beyond the human cost, the tree crew and the organization that has contracted them for work are both suddenly under significant pressure. Accidents may result in Occupational Safety and Health Administration (OSHA) penalties, higher insurance rates, workers' compensation claims, and potential loss of long-term contracts when the clients have safety as a performance metric.



Adherence to safety best practices is a critical part of any type of work, and doing everything possible to ensure that crews are upholding their commitment to safety is paramount. So how do you ensure safety best practices are always being followed? A comprehensive series of safety audits and feedback reporting or on-site, real-time training conducted by a third-party partner might be the answer.

A comprehensive safety audit program can be invaluable for any tree care organization, even when it might appear that your crew is adhering to safety practices. These audits will provide a detailed, objective assessment of a crew or contractor's safety practices.

Safety audits of your crew should be performed at random and be unanticipated to get a real sense of how your crew is performing. Every organization should consider implementing the following 10 audit areas, as they are critical for overall crew safety and business success.



1. Pre-Job Briefing

Each project should begin with a pre-job briefing that coordinates the activities of each member of the crew. Auditors ensure the entire crew is involved in a job briefing before starting the job. They also ensure the job briefing has information about job hazards, including work procedures, special precautions, and appropriate personal protective equipment.

2. Aerial Lift Operation

Aerial lift trucks are an essential tool for the work your crews perform, and the safe operation of this kind of heavy machinery is critical. According to OSHA, major injuries and fatalities associated with aerial lifts include falls and electrocutions. Your audit team will check to ensure tree crews are wearing and utilizing the right body harnesses, including an attached lanyard to the boom or basket. They'll also check to see that lift platforms are positioned at a safe distance from electrical lines and that the correct brakes or wheel chocks are being used when the lift is parked and positioned. More focused audits can include a pre-job inspection that consists of flying the boom to ensure the equipment is free of mechanical issues, reviewing maintenance records, and inspecting equipment for general wear and tear.

3. Traffic Control

Tree work will often bring crews near roadways, so it's important to make sure that crews are working safely in and around traffic flows. For this safety audit, an auditor will look to see that crews are taking the proper precautions, using traffic cones as necessary, following local Department of Transportation specifications, and ensuring that traffic has not been obstructed in an unsafe way.

4. Tree Felling

There are a lot of activities involved in auditing tree felling. This audit will primarily focus on workers performing tree felling from the ground. Audit teams will look for technical safety, such as proper notching and rigging techniques, but also softer safety skills, such as proper communication skills across the entire crew as a tree is being removed.



5. Crane Operation

Cranes are a major piece of machinery that can cause significant damage or injury if deployed improperly. Often used to remove large branches or sometimes entire trees, auditors look for multiple items when auditing safe crane-operating practices. Are crews keeping cranes clear of electrical hazards? Are they ensuring cranes haven't been overloaded? Are materials properly secured? Is the crane operator following and performing all the right functions within the manufacturer's tolerances?

6. Climbing Safety

Tree climbing is a risky part of an arborist's job and close adherence to safety practices is imperative. Audit teams should check to ensure that all the proper techniques are being followed and that all the necessary equipment is inspected before use, including harnesses, carabiners, ropes, and personal protective equipment. It's also important to ensure equipment is being used for the purpose it was designed for and kept in manufacturers' rated tolerances.

7. Chain Saw Safety

Safe chain saw operation requires constant, continual attention to all safety measures, but it's not uncommon for even veterans to become complacent and develop poor habits. Auditors will check for proper handling and cutting techniques, following the American National Standard for Arboricultural Operations – Safety Requirements (ANSI Z133). The size of the saw for the task being performed should also be noted.

8. Wood Chipper Operation

Wood chippers are another essential tool that have the potential to be extremely hazardous. Your audit team must evaluate how tree crews handle and work around the equipment. Auditors will ensure that tree crews are properly maintaining the equipment for safe operation, in addition to the proper use and towing connections for the machine.

9. Equipment Use and Technology Solutions

Technology and improved techniques for performing all aspects of the job is likely lacking recognition. Using the right gear for the job when approaching difficult or technical situations can reduce the potential for an accident. Using a qualified auditor to provide that feedback and training to workers in real-time, on-the-job performance will improve productivity and worker confidence—as well as worker longevity, potentially.

10. General Housekeeping

Keeping things neat and organized is critical to safety, and that means making sure that generalized housekeeping among tree crews is orderly and accounts for all the essential items. Auditors should check to make sure that crews have the necessary cones for traffic work, a full stock of water to ensure crews remain hydrated, first aid kits, and fire extinguishers in the event of an emergency, and ensure that things are labeled properly and stored safely. Cab cleanliness and equipment being stored in the proper compartments are also points not to be overlooked.

CHOOSING AN AUDIT PARTNER

When you're looking for a third-party partner to perform a safety audit, what criteria should you consider? Make sure that your audit team is well-versed in the appropriate OSHA- and industry-specific standards. For example, utility vegetation work is governed by the OSHA Code of Federal Regulations (CFR) 29 1910.269 and ANSI Z133. An audit partner that is involved with relevant committees will have vast knowledge and understanding of the safety standards to which your crew must adhere. In addition, the more industry experience an auditor has, the more likely they are to have great familiarity with safety best practices. With the right experience and knowledge, your audit partner will be able to work with you to develop a comprehensive auditing program that evaluates in real time how your crew is working in the field. Not all crews necessitate the same level of auditing. When selecting a partner to conduct your safety auditing, you should first identify the skills and background for the level of detail desired.



BENEFITS OF AN AUDITING PROGRAM

Qualified vegetation management workers may go through formal safety training once a year where they'll learn about aerial rescue, chain saw use, tree felling, wood chipper safety, rope and saddle climbing, bucket operations, and more. However, safety is more than a once-a-year event—and perhaps more important than anything is consistency in working safely and following best practices. It's one thing to pass an annual safety test, but it's another to work the same way many months later when no one is evaluating you.

Auditing programs traditionally have been data pool sources, which is useful as long as the data serves a purpose or is utilized. The effort of a safety auditing and training program should not only provide data but culture. The emphases on training and direction, handled in a relatable manner at the field level, in real time, will produce the results that improve organizations' safety performance; worker satisfaction as a result of the regular input to job performance; and, ideally, worker longevity by reducing injuries and physical strains inherent in the tree worker field.

As seen through these 10 audit examples, a comprehensive safety audit is an immersive experience that takes an extensive look at a wide variety of safety practices. With a focus on safety and the implementation of a safety auditing program, you can ensure that your tree crew stays up-to-date on standards and any critical changes that may have been made since they were first educated on these. An auditing program also takes full account of how well a crew is living up to standards in their everyday fieldwork.

Ultimately, a safety auditing program should help you keep close tabs on how tree crews are adhering to safety best



practices at any given time. It can serve as a proactive approach to help you take action against any unsafe behavior before it turns into a pattern.

ABOUT THE AUTHOR | Bob Urban

With nearly three decades of experience in the utility services industry, ACRT Services Senior Manager Bob Urban has built a wealth of expertise on everything from operations and sales to training and negotiation. He is an International Society of Arboriculture Certified Utility Arborist and the 2021 recipient of the UAA Will Nutter Silver Shield Award, a recognition given to a person who is on the front line of safety. Urban attended Paul Smith's College in New York. 🌳



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Carrying on a Culture of Safety: Adrienne Jones

Safety is at the heart of our utility vegetation management solutions at ACRT. Nothing is more important than sending people home safely each day, and Adrienne Jones, who was recently announced as ACRT's Safety Manager, helps emphasize just that.

In her new role, Jones oversees safety across our organization, while partnering with our various departments and field employees to continue fostering a culture of safety. As she keeps safety top-of-mind, Jones leads the charge in monitoring trends for leading indicators; creating recurring safety content such as tailboards, safety briefs, and daily messages; conducting annual required safety training and meetings; and more.

Jones is dedicated to ensuring safety measures are being taken throughout our organization and industry by producing safety-related content for all audiences, including webinars and speaking at industry events like the annual Ohio Tree Care Conference and ISA Southern Conference.

"As I continue to grow as a safety professional, my passion for cultivating a culture of safety also grows. I use every opportunity to partner with others to learn how people are working to develop a culture that provides the tools, training, and understanding to create a safer working environment and ensure our employees return home safely—and possibly in better shape than when they



left that morning," said Jones.

Jones is a Tree Care Industry Association (TCIA) Certified Treecare Safety Professional (CTSP), a National Safety Council-Certified Defensive Driving Course Instructor, a First Aid/CPR/AED Instructor, and a member of the UAA Safety Committee.

She holds a bachelor's degree from DePaul University, located in Chicago, Illinois.

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ISA Leads the Charge in Diversity, Equity, Inclusion, and Belonging

By Jennifer Gerndt, ISA Director of Member Services; in Partnership with Chastity Austin, ISA Director of Human Resources; and Alice Bagley, ISA Director of Marketing and Communications

As an organization with more than 26,000 members spanning the globe, the International Society of Arboriculture (ISA) recognizes its role in cultivating an environment where professionals in arboriculture and urban forestry receive support indiscriminately. Accordingly, ISA vows to be a leader in areas of diversity, equity, inclusion, and belonging (DEIB) so that we can ensure that everyone who desires a place within the tree care industry finds one where they feel safe and welcome.

Diversity, equity, inclusion, and belonging has become a popular topic of discussion in many work environments in the last decade (often referred to as DEI), although the issues that surround the broad term have been around much longer. The ISA perceives DEIB as a framework that creates space and opportunities for all people to fully participate in the workplace. With this in mind, ISA embraces diverse groups of people not despite their differences, but rather because of the unique perspectives their differences generate. The International Society of Arboriculture also believes in providing equitable support regardless of race, religion, sexual identity, physical challenges, and other factors.

Likewise, we foster an inclusive environment that welcomes everyone without the expectation of conformity. In other words, everyone can show up and belong just as they are. The

International Society of Arboriculture's determination to hold space for DEIB in the work we do is viewed through a non-U.S.-centric lens that gives consideration to what DEIB means in the context of our international members and partners.

The benefits of fostering DEIB in a professional space are infinite. For ISA, the value that different people from different backgrounds and experiences add to discussions is far richer than from a homogenous group. Additionally, demonstrating a fierce desire to encourage employees to be their authentic selves without restrictions also means that the talent pool for hiring widens and deepens. Moreover, belonging promotes emotional safety at work, while improving communication, trust, and overall opportunities. Thus, productivity increases as a result. Lastly, a more diverse team tends to be more empathetic and compassionate towards the diverse customers they service.

NEEDS ASSESSMENT

Every five years, ISA conducts a needs assessment of its stakeholders, who are members, credential holders, event attendees, or customers in our web store, to garner feedback about their perceptions and expectations of the organization. This allows us to identify both our strengths and weaknesses. The results are analyzed by experts and our staff and presented to the ISA Board of Directors to assist them in their work strategically leading the society. In turn, the ISA staff develops goals to fulfill the expectations of the board. Unquestionably, the needs

assessment plays a critical role in steering the organization in the direction its stakeholders expect, including on the topic of DEIB.

In 2022, ISA collected its most recent round of data via an in-depth survey, sent out to over 100,000 eligible participants. We received 10,000 responses with a +/-1 margin of error, assuring us that the responses received are an excellent representation of our overall global network.

Among the insightful results, we see progress being made in broadening the demographics of professionals working in arboriculture and urban forestry compared to the previous assessments conducted in 2012 and 2017. In fact, of the changes seen in the last 10 years, most of the change has occurred in the last five years. For example, the ISA network now consists of more women, more non-U.S. residents, and more tree worker/climber/technicians. Additionally, engagement with ISA has increased among the formally educated and younger professionals who are newer to the industry. Such information is invaluable for us in making decisions that impact the professionals we serve.

While the change in demographics points us in the right direction, there is much more work to be done to invite diversity to the profession, help employers





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understand equitable employment, and provide a space where everyone is included and feels welcome. Our network strongly agrees. In fact, 62% of the male respondents and 80% of the female respondents expressed that it is important or very important for ISA to be involved in DEI matters (belonging was not explicitly used in this survey). The tendency is also for younger professionals and professionals outside of the United States to recognize ISA's responsibility in promoting DEI.

INITIATIVES

We are intentional in our decisions and continue to evaluate and execute plans that support DEIB efforts. In order to support our international membership in over 70 countries worldwide, we offer educational materials translated into languages other than English. Furthermore, and with a lot of excitement, we began offering computer-generated subtitles in Spanish, Traditional Chinese, French, and Thai at our 2022 Virtual Event. Offering more materials in more languages provides access to our members, credential holders, and event attendees, no matter which language they use professionally. Instead of having the expectation for them to meet us where we are, ISA is meeting the global community where they are, and thereby creating an equitable solution to what would otherwise be a language barrier.

Another initiative ISA has been focusing on is the review and update of our internal and programmatic policies and procedures to ensure inclusive language and equitable access across the organization. This work straddles many lines within DEIB and includes, although is not limited to, how our organization provides requested modifications for credentialing exams or in-person conferences, the words and language we use throughout our organization, and general compliance with generally accepted global practices. Simple adjustments such as the use of non-gendered terms (groundworker, tree care salesperson, committee chair) signal to professionals

that our door is open wide to allow everyone to participate in our global network. This undertaking is quite large and impacts much of the work we do as an international, professional membership society.

Commonly, conversations regarding DEIB rightfully touch on race, religion, and sexual identity. However, another area that requires consideration addresses physical, mental, and learning disabilities. For instance, in recognizing that not everyone processes information and learns the same, ISA offers a variety of ways for professionals to gain access to information and to test for their certifications. More specifically, we offer online and in-person exams as well as educational courses that are online, in-person, or in audio format so that each individual can select the method that best suits their needs. Anyone who prefers a self-study method can take their time without the in-person pressures, and anyone who struggles with reading comprehension has a comparable alternative to support their professional goals.

As a final example of our commitment to DEIB in arboriculture and urban forestry, we are intentional in making sure that our vast network is holistically represented in our publications and on social media. We want to reassure those already in their careers that they are in the right place while encouraging those just beginning to explore the profession that there is someone just like them in our network. Because of that, we profile a different member in our monthly newsletter, *ISA Today*. With much consideration, each profile represents a different part of the globe; a different area of practice; a different age, gender, and race and/or ethnicity; as well as a different story that makes each person unique and special in this industry. We are happy to provide an opportunity to

showcase members doing great work while also bolstering others' sense of belonging as they see their place here too.

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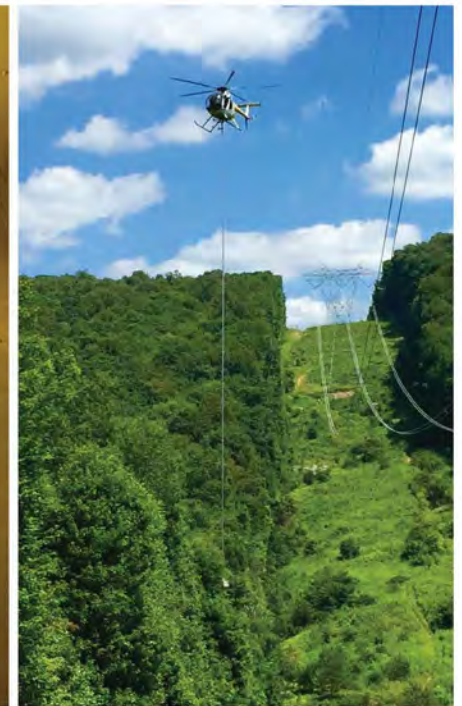
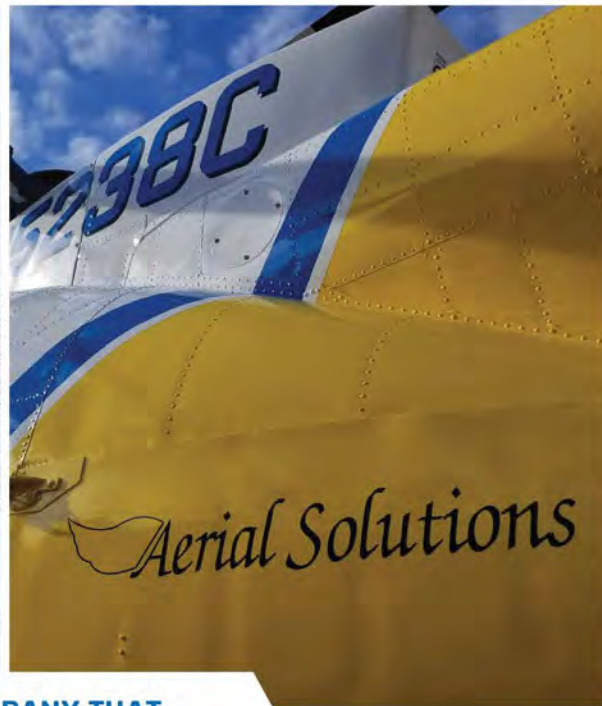
ISA does not just talk about DEIB initiatives; we also implement them into our own workspace. Proudly, the staff composition at the ISA headquarters, including our leadership team, reflects the diversity and vibrance of our homebase of Atlanta, Georgia, U.S., and our global network.

Our team members speak multiple languages and have a wide spectrum of educational backgrounds. We are also proud that our diverse staff covers four different generations—Baby Boomers (1945–1964), Generation X (1965–1980), Millennials (1981–1994), and Generation Z (1995–2010). With a quick glance inside our office and hybrid workspace, it is obvious that we provide a safe place where our staff belongs and can be themselves.

CONCLUSION

While the work we do connected to DEIB is exciting and motivates us every day to keep powering forward, we know the DEIB road is a long one. Nevertheless, we promise to continue on our path of attracting more diversity to the profession, offering equitable solutions that support people from all backgrounds, and creating a safe environment where everyone is welcome and knows they belong. The fields of arboriculture and urban forestry are opening wider and attracting more diverse individuals who want to work in an industry that cares about them and for trees. We want to foster the best environment for everyone who is making a positive impact on arboriculture and urban forestry and provide a platform that is equitable and inclusive. 🌱





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Safety and Safe Mindsets in Utility Rights-of-Way

An Introduction to “Recognition of Consequence” as the Pendulum Swings

By Anand B. Persad, PhD, BCE; Director—Department of Research, Science, & Innovation; ACRT Services

Business Cycles and Metrics

Our utility ROWs today is representative of our changing industry as we navigate growing populations and urbanization, climate resiliency efforts, and recognize environmental and social governance objectives. As we strive to improve efficiency amidst growth and differentiation, our creativity will play an increasingly important role. In that light, one aspect of our work in ROW systems management that will benefit from innovation is that of safety targets and metrics. Consider our safety products and measuring safety success as a simple pendulum; today as we strive for more, the swings seem to have shorter and shorter oscillations—add to this the human factor and the mindset for embracing safety. In these shorter cycles, we will have to get better at offsetting the heightened effects of and potential for more distractions. In practical terms, we need to be safer.

Safety and the Individual

We are all different. My friend, Dr. Fedo Marcello of the Brain Institute at the University of Florida, reviewed this article and the pendulum analogy at my request. He commented, “We have faster movement between cognizant thinking or making correct choices and emotional states where we are more prone to distractions.” Being safer means we as individuals need to cultivate a mindset that reverts quickly to our cognizant mental state whenever we are distracted. This is not the same for everyone. Our individuality is shaped by our culture, our interaction with our friends and family, life experiences, and formal training. Often baked into our approach to safety is “the triad,” a mix of our own personal safety, psychological safety, and environmental safety. (Today, this rightfully includes our cyber surroundings.)

Psychological Safety and Training

Safety trainers and employees alike appreciate the individuality of this triad, which for a successful outcome embraces our varying experiences and transfers to safety for all. Several researchers have found that our own psychological safety drives our ability to effectively transfer and share safety information, experiences, and knowledge to others. This is especially disrupted if the trainer lacks confidence. Researchers found that inculcating a high sense of emotional safety makes employees feel more comfortable and able to exchange information and knowledge. Fostering a sense of psychological safety is particularly important if the employee lacks confidence or may be in unfamiliar or changing surroundings.



Is Safety a Choice? The Linearity of Teams

As we choose safe work practices, no two situations are the same. So mechanisms need to be built out further by individuals, extending themselves to better adapt safe practices to each situation at hand. Teams are supposed to work flawlessly, and they strive to achieve this with the sum effect of safety for all. In linear models, behavior within crews is variable and, by extension, so are safety concerns. Does the entire team share tolerance to risk, and to what degree?

Team Risk and the Cherry Tree Fiasco

I am often reminiscent of an incident at my high school. I was one of several lads simultaneously climbing a cherry tree, ascending to a regular lofty spot. But one day we had more climbers than normal, and as that branch broke (my introduction to tree biomechanics), we all ate healthy mouthfuls of warm Caribbean earth. That day we all shared interpersonal risk, but in the teamwork that day we also shared psychological safety, but a false sense of security. Our lack of recognition of risk led to tolerance to risk and ultimately made it an unsafe day. In 1999, Dr. Amy Edmondson from Harvard University described psychological safety in simple terms: that if you can take risks without your team beating you up, you'll be more likely to succeed. Are we following suit and encouraging this further along than we should in our business-driven environments?

As We Pivot, Are We Tolerating Risk? Can Recognition of Consequence Help?

Are we tolerating risk as we train our teams to be better at managing risk? As we practice safety as a culture, and add incentives similar to those offered when rewarding production goals with the intention to steer away from risk-taking, is it working? These are relevant questions we need to also be asking. "Can we ably and with reliability" inculcate safe work practices to teams that are trained to function linearly? In safety, everyone should lead. But do our teams' structure and the spherical need align well with safety rules and the ability to recognize risk? There is a clear need to move more towards safety balance and equity within the team. One concept that helps in this regard may very well be a baked-in "recognition of consequence"



Figure 1. We are diverse in thinking and have varying experiences that have shaped who we are and how we react. Our mental states and ability to swing between cognizant and emotional states will determine how safe we can be in our day-to-day activities. We all recognize consequences. Will training to a higher degree of awareness and recognition of consequences lead to safer mindsets?

(ROC), that may cross individual barriers. In our cherry tree fiasco, if we had this ROC and implemented it as a team, we may have had a safer outcome.

UAA Research and Safety: Generation Z and ROC

Safety training evolves as generations change. Today's incoming workforce, the Gen Z group, is technologically savvy, transparent, and vocal. The spherical model of ROC in safety is a good fit, since for most of Gen Z it is all about equality and equity. Positive mindsets coupled with vibrant communication and newer platforms may help. Several interactive tools that may go beyond entertainment value, including 30-second TikTok videos, YouTube, and Instagram posts, may have added value to bridge communication gaps and reach inquiring minds that are already using these platforms. Generation Z-ers are also known to embrace sexual diversity, a potential dovetail into our more positive mindsets and safer initiatives.

Safety and Industry Narratives on Diversity

At our regular UAA research meetings, we start with a safety talk given by a volunteer. Topics are timely (e.g., ticks in spring and summer, safe driving

in wintry conditions, exercise extra vigilance as school reopens). These sessions, though brief, afford for group experiences and narratives to be exchanged at the personal level.

Over the years, I have wondered about the diversity of selected topics based on the sex of the speaker at these sessions. After examining topics gleaned from 182 industry sessions and analyzing them versus sex of the speaker, along with core focus (Figure 2), new perspectives came to light. The data in this preliminary overview revealed a leaning towards "self-preservation or making yourself safer" from women, and a "group-leaning" focus from men—when speakers are given free choice of the topic. For example, while women may talk more about safety of the team in an unsafe environment, and men may talk about making the environment safe (Figure 2). Both perspectives are important. For our industry, however, can a safer, diverse work environment emanate from both self-preservation and making the site choices safer for all?

Is there messaging for the working, producing world? Can having teams of mixed sexes lead us to a safer work environment and bring the context of individual safety and team safety more intertwined?

An Overview of Safety Narratives Delivered by Female and Male Speakers at Pre-Meeting Talks

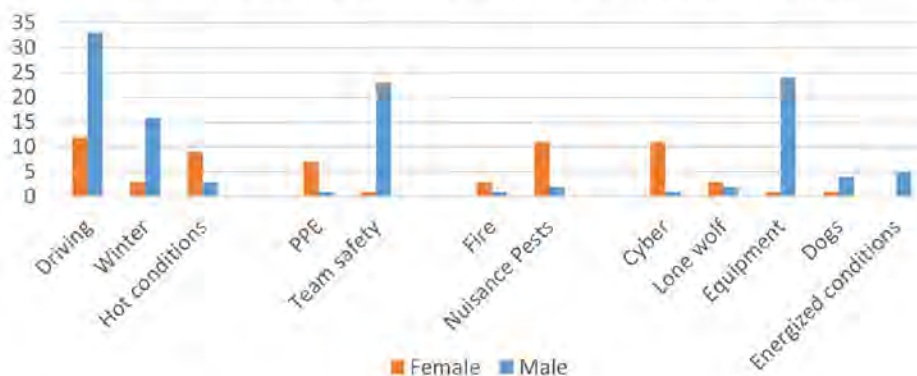


Figure 2. Female speakers (65) focused on self-protection, while male speakers (117) focused on sites and surroundings. A diverse team may bring these perspectives into a safer group (35% UAA speakers, 40% ISA, and 25% other [townships, cities, municipalities, etc.]).

Recognition of Consequence and Sexes

Is there a place too for ROC? In our cherry tree fiasco, since it was an all-male group (given that it was an all-male school), we focused on competing to get on the branch. I can't help but think that our focus that day was neither on self-preservation nor making our environment safer. Our ROC was limited, we risked that the branch would support our combined weight, and failed to understand what would happen if it broke. By contrast, a year later at college, with a mixed group of sexes, some of our cherry tree climbers recounted the narrative—it received mixed reviews ranging from “not smart at all” to what “trouble” we got in. But this mixed-sex group was the first discussion of consequence that I could recall. Back then, in a singular-sex group, we focused on denial and evasion of the incident altogether (neither worked...but that's another article).

A Safe Mindset Is a Safe Day

I believe we can lend more focus to continue building ROC into mainstream safety ideology. The words of current UAA Executive Director Dennis Fallon resonate well with me, as “Make it a safe day”—his theme quip—never fails to give me a personal check and gut reaction. One cannot help but think of the consequences if the day becomes unsafe.

As this body of work continues as we develop safety practices—our mental

states and physical health and abilities will continue to play a forefront role—so too will our humanness and successes be better guided with business ideals that focus on behavior.

OUR TIME TO SHARE

I invited some workers in our space to have a chat with me on the topic. Here are some feedback comments as this body of work continues, and as we delve further into mental health, emotional intelligence, neurodiversity, and other opportunities to explore our safety and safer work environments.

Dr. Phil Charlton (Iapetus, Former UAA Executive Director): “We must address things differently. Safety training now is not the same as the past. We need to innovate our safety as technology advances.”

Randy Miller (CNUC): “The essential mindset for safety to me is to accept the reality that we are fallible as humans. On average, we make five mistakes an hour, and under stressful circumstances, the rate more than doubles. With that understanding, we need to create a culture of positive accountability that inspires everyone to be alert for errors that can result in unsafe acts and conditions, bring them up, and correct them as they occur. Positive accountability means we have the strength of character to hold ourselves accountable, to welcome accountability from 360 degrees around us (from our peers, subordinates, and superiors), and to enthusiastically

contribute to a 360-degree culture of safety accountability. I think that mindset is indispensable for a sustainably safe workplace.”

Dave Biennemann (Urban and Utility Forester, City of Hamilton, Ohio): “Safety means, to me, a way of life. Each day you drive to work, you are in safety mode. Once at work, you must be aware of your surroundings at all times. Our electric department line crews and contracted trees crews in Hamilton, Ohio, are working in close proximity to high-voltage powerlines daily. We have our PPE on as we are inspecting the crews for safe working conditions during the week. You finish the day by driving home safely.”

Kathryn Harper (Certified Arborist, SavATree): “Safety for me is to keep the crews safe, follow all procedures, and take care of each other. Make sure everyone makes it home at the end of the day.”

Susan Rossbach (Brains 4 Drones): “We need to invest in technology that will help us work safer.”

Stan Vera-Art (Creative Catalyst-Grow With Trees): “Our commitment and work towards safety is never done, but the success we have seen in building a robust safety culture in the utility industry sets a great example for what is possible with the emerging culture around environmental stewardship.”

Ray Henning (retired): “Over my career, I found that four fatalities that occurred, which I am familiar with, have stayed with me; the people involved were not who I would regard as careless or unsafe. Additionally, because of the simple, everyday situations in which it occurred, I often wonder and will continue to wonder what the mindsets of those individuals were at the time of the incident.”





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Where Are They Now?

Will Nutter Silver Shield Safety Winners

By Renée Bissett, Director of Marketing and Communications, ACRT Services; Chair of the UAA Editorial Committee

In 2016, the Utility Arborist Association introduced the Silver Shield Safety Award, spearheaded by then Safety Committee Chair Will Nutter. This award recognizes those who put safety on the front line, and who influence and promote safety culture at every turn. A few of us worked behind Nutter's back to surprise him with the first inaugural award, and it worked. No one deserved this high honor more. He continuously advocated for safety and was a key player in developing the UAA Safety Summits, focusing on bringing groups together of high performers to create best practices, educating workers, and proactively addressing safety across the industry. After Will's untimely death in 2021, the award was renamed in his honor: the Will Nutter Silver Shield Award. We checked in with our winners to ask them a few questions.



Kevin Myers

2016 Recipient: Kevin Myers

After surprising Will with the first award, Kevin Myers of ACRT won one, too. When asked what it meant to him at the time, he said, "Receiving this award gave me confidence in my safety perspective and encouraged me to continue to be an ambassador of safety for tree care workers, with unwavering opinions on safe tree care operations." Myers continued, "I believe the award has provided me with the recognition needed to be viewed as a reliable source of safety information and opinion, which has granted me the honor of publishing safety-related documents and presenting safety-related information to the tree care industry." Sharing his industry advice to others, he said, "In an industry where safety is held in high regard, don't forget that human error still exists. Always ask yourself and challenge others to consider if the way you/they/we are doing things currently—even sometimes historically—is the safest method." Kevin continues to live by the award's meaning. "Since receiving the award, I have contributed to the development of ANSI Z133 standards; however, I have stepped away from that commitment to focus on improving safety perspectives for individual workers and companies through speaking engagements, teaching, and writing. I hope to be able to return to the development process of the Z133 in the near future, and other related industry safety committees."

2017 Recipient: Richard Zito

Richard Zito, a lifetime member of the UAA, said he was "humbled and honored to have received the award. He always championed that safety was a personal culture that extended to whatever you do personally and with others in life. The Silver Shield Award was a reflection of this and the steadfast commitment to the folks I worked with, and the industry." When asked about how his life was impacted after receiving the award, Richard said he was very pleased that the award has been named in honor of the man who he felt was a mentor to all of us in safety. Zito said, "I am proud and again humbled to be on the list of recipients, past and future." His advice to others is, "Never believe that you are the sole source of what it takes to make a safety culture successful. It takes being an integral part of a team to listen and coach those around you. Satisfaction is when you witness their success and their ability to pass on the word." His ongoing safety message is, he said, "I always have and will continue to pass on the message to 'Take Care and be Safe' to myself, family, friends, and to anyone. This is Will Nutter's and the UAA Safety Committee's legacy to ourselves and the industry."



The late Will Nutter (right), presenting to Richard Zito (left).

2017 Recipient: Bob Gordon

Bob Gordon of Asplundh Canada, ULC, said of his winning, "It was very special; not just the recognition of my peers which meant a lot to me, but it gave me pause to reflect and think about the individuals who along the way had been my mentors and played a key part in my development and successes." For how he has changed since receiving this honor, Gordon said, "I have moved into a role that has allowed me to be more involved with the Professional Vegetation Management Association (PVMA), along with course development and raising awareness of our industry, which has allowed me to continue to be involved with individuals entering the industry and share some of the mentorship that those ahead of me took the time to share with me." He still remembers just how caught off guard he was with the award. And when asked him to speak, he said the following: "Always remember safety comes from the heart first, not from a book. It is that heartfelt passion for safety to me that is the backbone of this award." He continues to be involved with Olds College and their training programs for our industry as a developer and an instructor, allowing him to continue mentoring and being involved.

**2018 Recipient: Gerry Breton**

Gerry Breton of Lucas Tree Experts said, "To be nominated and then be selected by my peers means I have made a positive impact on the industry." He continued describing the impact it made on him, "Receiving the award provided me with additional motivation to continue to promote a positive safety culture and explore ways to eliminate harm in the workplace. Everyone must believe they can come to work and return home injury free." The advice he cautioned was, "Receiving this award or any award does not mean your work is done. Everyone must continue to strive for continuous improvement, explore new methods, and collaborate with peers in the name of safety, both at work and at home." As for the meaning of safety, Breton said, "I love this quote: 'Tomorrow is your reward for working safely today,' by Robert Pelton. I think this sums it up nicely! Your actions dictate the outcome—working safely means that we get to go home to see our families at the end of the day, and it means our team gets to do the same."

**2019 Recipient: Mark Kimbrough**

Mark Kimbrough of the Townsend Corporation said, "It was an honor to receive the award. Will Nutter was one of the first recipients of this award and was a mentor to me. I called him often for advice and he was always truly supportive of me and of the industry. To carry his torch was (and is) an honor!" Mark has been impacted by this honor, replying, "With Will's passing, I have been even more motivated to carry the safety torch. His shoes are big shoes to fill." The advice he gave was, "Leave a legacy! Be a person who leads with the values of safety, excellence, integrity, character, and accountability." For his continued commitment, he said, "Safety is my foremost core value. Will was a 'go-to' for me. I try to lead with the values of safety, excellence, integrity, character, and accountability. I strive to be a mentor to others just as Will Nutter was to me. Rest in peace, brother!"



Mark Kimbrough (right), 2019 recipient, with UAA Past-President Bob Richens (left).



Dan Mekkes (right), 2021 recipient, with UAA Executive Director Dennis Fallon (left).

2021 Recipient: Daniel Mekkes

Daniel Mekkes of the Townsend Corporation was one of two of the first recipients of the newly named award. He said of the award, "I was the first award winner after Will's passing. His brothers were there in his place and awarded me his award. Time stood still and tears flowed. I will never forget! And to be awarded by your peers—wow." Mekkes was impacted by this award due to "some recognition, but more so the idea of being that award winner; the respect and honor that comes with that and bringing that to the field—daily, hourly, every minute, even seconds." His advice to others is "it is a one-of-a-kind award, Will was one-of-a-kind, and as a winner, you need to be one-of-a-kind. Don't ever forget!" To Mekkes, safety means: "Safety is truly everything. I would be saddened if something were to happen on my watch and I said nothing. It would be a disgrace to the 'Shield.' We have a voice, and our voice should be SAFETY."



2021 Recipient: Bob Urban

Bob Urban of ACRT Services was the other winner of the inaugural Will Nutter Silver Shield award. When asked about what this honor meant to him, he replied, "I was humbled and, frankly, felt undeserving of the recognition.

The Shield, as far as I know, is a true peer award; the awareness that it showed me was that people in our

industry noticed what I personally was doing." Since receiving it, Urban said, "I wear my Shield on only a few special occasions (I break it out when I have on my Sunday best): if I am speaking or presenting and when I attend industry events. I am proud to have received it but do not feel I want to flaunt it. My actions, attitudes, and leadership are what should be on display at all times. The recognition reminds me about safety and using the experience of my career and my life to ensure helping others get home every day, and for getting myself home as well."

His advice to others is "First, be real. Don't act the part, be the part. Being the part makes your actions, attitudes, and leadership about safety part of your nature. Second, you never know who you are a coach, mentor, or role model to. You never really know who is watching and paying attention. Third, it's not so important that you have a perfect safety history, but it is important that you realize that history and use the experience to improve. The improvement is what others will notice and hopefully emulate." Bob continues to attend, participate, and engage in industry-focused safety volunteer groups (UAA Safety Committee). "I try and provide new ideas through that conduit, as well as write editorials and create webinars that have safety as the core message. I attempt to set an example, when I can, of making safety a priority. By making it a priority it starts to become my nature. Will Nutter was a colleague in the industry with me for many years. Safety was in his nature," Urban said.



The late Will Nutter, industry icon and creator of the Silver Shield Award



Dwight Carter (right), 2022 recipient, with UAA Executive Director Dennis Fallon (left).

2022 Recipient: Dwight Carter

Dwight Carter, currently of Davis H. Elliot Company, said of his winning, "In one word: honored. I greatly appreciated someone recognizing my body of work and deciding to submit my name for such an awesome award." Since he received it, Carter said, "Another company (Davis Elliot) recognized my potential and recruited me. This was a game changer for my family and me." The advice he'd share with others is: "Servant leadership—always thinking about how to reach employees and build that bridge to them in an effort to raise the bar with our safety culture." He'll continue to hold the award's meaning and its namesake. Carter said, "I give one hundred percent to the job of field safety director. I hold this award in very high regard and will continue servant leadership with all my teammates."

Having worked with Katie Moehn over the years on the UAA Editorial Committee, and with Will for years as the marketing and communications supervisor at Wright Service Corp., we asked her to share her thoughts on this award. "Receiving the Will Nutter Silver Shield Award is a high honor that transcends beyond your dedication to safety. This award embodies the passion you have for people and the industry. By nature, Will Nutter was a natural leader and mentor and truly cared about people.

He was a guiding force in my development as a leader and my abilities to learn and grow within this industry. He had a way of tilting your perspective. I will never forget the advice he shared with me and a few other participants in our Leadership, Education, and Development (LEAD) program. Nutter said, 'You don't need to be the smartest one in the room. I got where I am today by surrounding myself with those around me that are smarter.' It allowed me to break down my insecurities and empower those around me, just as he did. He was a force. He took a personal interest in me and what I could become."

For those of us lucky enough to have known Will, there will never be anyone else like him. He was a friend to all, a team player, and a visionary for our industry. His passion for safety infected everyone, driving each of us to do better. A culture of safety is at our core and forms the foundation of the UAA and our industry. One of the best ways to continually honor Will is to uphold the principles that this safety award represents. Regardless if you are a recipient or not, how will you influence and promote a safety culture at every turn? 🌱



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Environmental Fate of Herbicides on Transmission ROW

By Geoff Kempter, Technical Services Manager, Asplundh

INTRODUCTION

When herbicides are applied to plants on the ROW, what happens to the active ingredients (AIs) over time? The research team, John Goodfellow, Dr. Phillip Charlton, and Paul Appelt, recently undertook a study for the Electric Power Research Institute (EPRI) to determine the fate of these chemicals, along with other products, such as chainsaw bar oil and carrier oils. This article summarizes the report and its findings.

To determine herbicide quantities and application methods, a survey was distributed to EPRI environmental managers, along with a group of senior-level vegetation managers, which represented nearly 159,000 miles of electric transmission ROW. This study looked at five application methods (Table 1). The majority of the applications were low-volume foliar, with lesser areas of hydraulic foliar, low-volume basal, cut and treat, and frill.

Rights-of-way managers select and apply herbicides based on site conditions and maintenance objectives. The amount applied on any given site varies by product and application method. Applications attempt to maximize the absorption of the chemical by target plants, but of course some materials reach non-target plants or may drip down to the soil. These factors can affect the ultimate fate of the AIs.

Typical herbicides used and the amount of AI are shown in Table 2, typical application volumes (based on method) are shown in Table 3, and the expected application rate, shown as pounds per acre, is shown in Table 4.

End users of herbicides vary in the frequency of application. Agricultural users generally apply herbicides annually. In contrast, on electric utility transmission ROWs there is often an application interval of 3–5 years or more.

FATE OF ACTIVE INGREDIENTS

How quickly AIs degrade following application depends on many factors. The half-life is the amount of time expected for a substance to reduce by 50%. Table 5 shows the expected half-life for AIs under aerobic soil conditions. However, many factors, such as season, precipitation, temperature, availability of moisture and oxygen, and soil type can affect rates of degradation. Even considering these variables, most herbicides used in utility IVM programs break down relatively quickly. Environmental fate pathways are discussed below and summarized in Table 6.

Table 1. IVM Chemical Control Methods Representative of Vegetation Maintenance on Electric Transmission ROW

Method	Description
Hydraulic Foliar	The herbicide mixture is applied selectively to incompatible plants by an applicator using a spray rig with tank, pump, hose, and spray gun
Low-Volume Foliar	The herbicide mixture is applied selectively to individual incompatible plants by an applicator with backpack sprayer or small spray rig
Low-Volume Basal	The herbicide mixture is applied selectively to incompatible plants by an applicator with backpack sprayer or small hand sprayer. The lower portion of an incompatible stem and any exposed roots (and cut surface, if applicable) are treated
Hand Cut and Treat	The herbicide mixture is applied selectively to the freshly cut stumps of incompatible plants by an applicator with backpack sprayer or small hand sprayer
Frill (i.e., "hack and squirt")	The herbicide mixture is applied to fresh frill cuts on an incompatible stem by an applicator using a small hand sprayer or spray bottle

Table 2. Herbicides Used in Chemical Control Treatments in Electric Transmission ROW

Product Trade Name	Producer	AI	Quantity of AI
Method 240SL	Bayer	Aminocyclopyrachlor	2 lbs/gal
Milestone	Corteva	Aminopyralid	2 lbs/gal
Krenite	Albaugh	Fosamine	4 lbs/gal
Rodeo, Aquaneat	Corteva, Nufarm	Glyphosate (without surfactant)	4 lbs/gal
Roundup "Pro Concentrate," Custom	Bayer	Glyphosate (without surfactant)	5 lbs/gal
Polaris, Arsenal, Stalker	BASF, Nufarm	Imazapyr	2 lbs/gal
Escort XP	Bayer	Metsulfuron methyl	1 lbs/gal dry flowable
Tordon 22K	Corteva	Picloram	2 lbs/gal
Garlon 4 Ultra	Corteva	Triclopyr BEE	4 lbs/gal
Vastlan	Corteva	Triclopyr TEA	4 lbs/gal
Method 240SL	Bayer	Aminocyclopyrachlor	2 lbs/gal

Table 3. Typical Range in Volumes of Herbicide Mixtures Applied by IVM Chemical Control Methods

IVM Chemical Control Method	Typical Application Volumes
Hydraulic Foliar	25–100 GPA selective
Low-Volume Foliar	5–15 GPA, often <5 GPA
Low-Volume Basal	1–3 GPA basal
Cut Stump	< 1 GPA stump
Cut Surface and Frill	<1 GPA, often much less

Table 4. Expected Rate (Pounds/Acre) of AI Introduced to a ROW during Vegetation Maintenance

Active Ingredient (AI)	IVM Control Method	Typical Rate (lbs/A)	Highest Expected (lbs/A)	Maximum Label (lbs/A)	% Label, Typical	% Label, Highest
Aminocyclopyrachlor	Low-Volume Foliar	0.09	0.14	0.28	32%	50%
Aminopyralid	Low-Volume Foliar	0.07	0.10	0.11	64%	91%
Fosamine	Hydraulic Foliar	8.00	15.00	24.00	33%	63%
Glyphosate	Low-Volume Foliar	2.00	3.00	3.75	53%	80%
Imazapyr	Hydraulic Foliar	0.20	0.38	1.50	13%	25%
Metsulfuron methyl	Hydraulic Foliar	0.06	0.11	0.15	40%	73%
Picloram	Hydraulic Foliar	0.03	0.19	1.00	3%	19%
Triclopyr TEA	Hydraulic Foliar	1.00	1.69	9.00	11%	19%
Triclopyr BEE	Low-Volume Basal	1.13	2.50	8.00	14%	31%

Table 5. Range of Half-Lives for the Herbicides Used in Electric Utility Vegetation Management Programs

AI	Aerobic soil half-life (days)	Persistence
Aminocyclopyrachlor	>120 (114-433)	Moderate
Aminopyralid	8-19 (<143)	Moderate
Fosamine	8	Low
Glyphosate	47	Moderate
Imazapyr	25-141	Moderate
Metsulfuron methyl	30	Moderate
Picloram	90 (20-300)	Moderate
Triclopyr TEA (oil soluble)	30 (10-46)	Moderate
Triclopyr BEE (water soluble)	30 (10-46)	Moderate

Table 6. Summary of Environmental Fate Pathways

Mechanism	Description	Notes
Biological degradation processes	Metabolized in treated plants	- AI is degraded by biochemical and biophysical processes as it acts within plant - Occurs in above- and below-ground parts of treated plant - Rate dependent on biological activity which is influenced by environmental conditions, such as temperature, moisture, and oxygen concentrations
	Metabolized by soil microorganisms	- AI is consumed by microorganisms including bacteria and fungi - Rate dependent on biological activity which is influenced by environmental conditions, such as temperature, moisture, and oxygen concentrations - Primary mechanism is the rate at which soil microorganisms utilize AI as a source of energy (food) - Low temperatures (<40° F), poorly aerated soils, and low soil oxygen levels decreases rate of metabolism and decomposition of AI
Abiotic degradation processes	Chemical reactions	- AI is broken down by chemical processes. - Include chemical reactions such as oxidation, reduction, and hydrolysis - Environmental factors such as temperature, pH, and moisture can affect rate
	Photo-decomposition	- Chemical breakdown and deactivation of AI by sunlight - Importance varies widely by AI
	Soil Adsorption	- Bonding of the AI to the surface of soil particles - Due to electrical attraction between AI and soil particles - Occurs in organic and clay soils, not in sandy soils
	Solubility	- Tendency of AI to dissolve in water - Solubility varies widely among commonly used AIs - Degradation by dilution
Physical processes	Leaching through soil profile	- Movement down through the soil profile - AI must be relatively persistent, soluble, and have low soil adsorption to become a concern - Likelihood of leaching is dependent on the method, rate, and season of application - Selective Individual plant treatments reduce amount of AI reaching soil surface
	Runoff, off-site surface flow	- Movement with water flowing over soil surface - Herbicide must be relatively persistent for runoff to become a concern - High soil adsorption can result in AI being carried off site on soil particles - None of the IVM-based chemical control methods involve application directly to the surface of soil - Greatest potential in areas with poorly infiltrating soils, flooding, and steep slopes
	Volatilization	- AI passes from solid or liquid state to a gaseous state - AI included in this study are very unlikely to result in substantial risk of volatilization

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Biological Degradation • Herbicides are broken down by biological processes in the treated plants, and by microorganisms in the soil. How quickly this happens can be affected by temperature and available moisture and oxygen. Dry conditions, cold temperatures, and anaerobic conditions slow the rate of decomposition.

Abiotic Degradation • Active ingredients react with chemicals present in the environment which can affect the rate at which they break down. Sunlight can quickly degrade certain AIs, depending on the chemical.

Physical Processes • Some AIs adsorb, or bond, to soil particles. This can limit their availability to plants but can allow them to move with soil particles during runoff. Water solubility of AIs varies considerably and can affect their movement following application. Some herbicides volatilize to a gaseous state, however most herbicides used on utility ROW are of low risk of volatilization.

Leaching • Whether AIs leach far into the soil profile is a function of how fast they degrade, adsorption to soil particles, and solubility. Other factors include soil type, topography, and climate. How and when products are applied also affects leaching potential. Since IVM applications are made directly to targeted plants, relatively little product reaches the soil. The greatest amount of leaching is likely to occur when heavy precipitation occurs immediately following herbicide application.

Runoff • As water runs off treated sites, it can carry IAs that are dissolved, and those that have bonded to soil particles. This is most likely to occur where soils are poorly drained, on steep slopes, or during a flooding event. IVM-based control methods do not involve applying products directly to the soil.

CHAINSAW BAR OIL AND CARRIER OIL

There are many manufacturers and formulations of these products available. These include synthetic and vegetable-based products. Chainsaw bar oil has minimal toxicity to plants in the concentrations that are typical during routine chainsaw use. Neither bar oils nor carrier oils move through the soil profile. Both bar oil and carrier oils are broken down by soil microorganisms. Vegetable-based bar oils undergo rapid biodegradation.

Chainsaw Bar Oil • As the saw is used, bar oil is introduced into the environment as a fine mist. Some is deposited on the cut surface as the saw cuts. The amount introduced into the environment is a function of tree and brush density, and the corresponding run time of the saw. Most bar oils used are petroleum-based mineral oils, though synthetic oils and blends are also available. Vegetable-based bar oils are increasingly available.

Carrier Oil • Carrier oil is used in low-volume stem treatments, and in cut stump treatments using AIs that are oil soluble. The products are designed to penetrate the bark, kill actively growing cambial cells, and prevent sprouting and further growth. During the application process, a certain amount of product runs off the target plant tissue onto the soil or is sprayed on nearby plants. Oil-based products do not dissolve in water and are unlikely to move far from their application site.

CONCLUSION

The AIs used in IVM applications on electric transmission ROW degrade at different rates, depending on environmental conditions. The use of selective application techniques and the selective chemistry of herbicides are designed to minimize the amount of AIs applied. In general, they pose relatively low risk as they degrade, due to the long maintenance intervals commonly used, the relatively low level of off-target applications, and the relatively low levels of AI applied.

This article was generated from the following report for EPRI. For more information about this report, please contact Ashley Bennett (abennett@epri.com) and John Goodfellow (jwgoodfellow@msn.com).

"Environmental fate of herbicides used in vegetation maintenance of transmission rights-of-way: An assessment based on contemporary Integrated Vegetation Management practices" EPRI, Palo Alto, CA. 2022. EPRI product ID: 3002021641.

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Townsend Tree Service Earns Certification from the Women's Business Enterprise National Council

Townsend Tree Service recently earned certification as a Women's Business Enterprise from the Women's Business Enterprise National Council (WBENC). The Women's Business Enterprise National Council is the largest certifier of Women's Business Enterprises in the U.S. and a leading advocate for women business owners, leaders, and entrepreneurs.

The company underwent a rigorous certification process, including an in-depth review of the business and site inspection. The process is designed to confirm that the business is at least 51% owned, operated, and controlled by a woman or women.

Townsend Tree Service has a commitment to quality, which plays a significant factor in whether a company will be awarded with WBE certification. We were also the first company in the U.S. to be accredited by the Tree Care Industry Association in their Utility Contractor-Tree Service Company Accreditation program. This accreditation proves our commitment to going above and beyond industry standards for safety, performance, and best business practices.

There are several benefits to partnering with a WBE. While innovation isn't gender specific, there is something to be said about working with women-owned businesses and companies offering out-of-the-box solutions. In expanding the range of business leadership, new ideas and powerful solutions can come to the forefront that might not have otherwise.

One of the most surprising reasons to partner with a women-owned business is profit. The Hackett Group, a global consulting group, conducted a comprehensive study that discovered a 130% return on investment for companies that select women-owned businesses as suppliers or contractors. The potential increase in innovation can result in a competitive advantage that may boost the bottom line.

Women-owned businesses are growing and expanding. Choosing to work with a WBE-certified business shows your commitment to fostering diversity and the continued development of your supplier diversity program.

For information on how you can partner with us, call (800) 428-8128.



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My passions are travel, new experiences, and people. Scotland, Iceland, Costa Rica, and South America have been some of my favorites. I love to connect with others who are in our industry when I travel.

Cindy Musick

Professional Profile: Cindy Musick

My career path started when I sent resumes—using a typewriter from a camper in Montana—to every job I could find to use the forestry degree I had just earned. I was working on a section of the Continental Divide Trail in Montana, running a chain saw or wielding a fire rake ten hours a day. This was not my long-term career goal, although it was fun!

I interviewed with a utility in Washington, DC, and then got a call from the headquarters in Dillon that a utility wanted to speak with me. The next week, I flew to DC and it all started there. I spent the next three years working on a series of 230 kV clearing jobs, inspecting the work, talking to landowners, and helping with easements and storm water management—basically, whatever they asked. My dad was a transmission engineer with Florida Power and Light for over 30 years. It was a surprise to him and me both that I ended up working for a power company. I had planned to buy and sell timber!

When beginning in the utility industry, I expected to stay a year, at most. Washington, DC, was not my dream location and I thought that “real” forestry was my calling. Life happens. Not only did I find my true passion—a field that truly matters—but I’m still as excited about it as if it were my first week! I am constantly learning and realizing how much is the same (chainsaws and chippers) but also what has evolved and improved. We have standards, certifications, better PPE, more tools, better education, and the same passion as 30 years ago. In fact, I am more

energized about technology tools and new ways to improve reliability that I ever have been. It’s really a paradigm shift that we are in the midst of.

When it comes to UVM, the thing I enjoy most is the opportunity to make a direct impact on someone’s life. What we do matters—*really* matters. Anyone who has ever lost power knows. I also like the people. The folks I work with are world class, in character, knowledge, and passion. We continuously improve our program. None of us are perfect, of course, and we all have different strengths and ways of doing things. And that’s exactly how it should be. The contractor partners we work with are exceptional. They respect their craft workers’ excellence and have elevated safety.

Although I lost him at a very young age (26), my dad was my mentor. I still run into people who knew him or knew of him. Dr. Ray Hicks, Scott Gravatt (PEPCO), Kevin Eckert (Hawaiian Electric), and my current supervisor, John Crawford, have all given me sound advice. There are so many people that I get to talk to—my counterparts in Virginia; my family of

electric cooperatives, particularly the Association of Large Distribution Cooperatives Vegetation Management Working Group members; MAC-ISA; the UAA; and the working groups I have had the privilege of serving on—that have shared knowledge openly and freely.

I am currently working toward a PhD at West Virginia. The PhD is the terminal degree, meaning you have to work and do research to answer an important question. In this case, simply: what are the factors that relate to outages caused by whole tree failures? The multifaceted project revolves around collecting information to learn about various environmental and site factors and how they affect our system at REC. Ultimately, we want to know how to prevent more outages from trees, which will improve reliability and serve our members well. If we can move to a predictive model and a prescriptive mode of maintenance, then the metrics we use to measure reliability will improve, saving resources. Isn't that the very definition of sustainability? And anything that helps REC will probably help other utilities.

Advances in technology—"another tool in the toolbox"—are coming in leaps and bounds. Satellite data is a game changer. We just finished a pilot that was quite successful. When combined with the tireless work from REC's analytics group, we are one step closer to that prescriptive maintenance plan. Combining satellite data with a robust VMS system is something exciting we are implementing this year. New tools for doing the same work—safer, with more people on the ground and out of the wire zone; innovation in bucket truck design to be more accessible and require fewer CDLS; electrification of many of our tools for the work; and finally, not forgetting the craft workers. The people who clear ROWs are truly the tip of the spear during restoration work, during routine maintenance, and responding to customers. The industry will succeed when we collaborate, communicate, and elevate the work that is done to the level of respect that the workers deserve. 🌲

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Cultivating Safe and Respectful Work Environments: MK Youngblood

At ACRT Pacific, we put safety first, always. So, when MK Youngblood joined ACRT Pacific, stepping into a safety-focused role only seemed natural.

The 30-year public service and first responder veteran brings an array of experience to our organization and, more importantly, with a tribal lens. As the safety manager and tribal liaison at ACRT Pacific, Youngblood oversees our organizational safety programs, protocols, and policies, while keeping the curriculum up-to-date, and more.

Youngblood's background highlights his experience in public service and as a first responder with core proficiency in Indian law, Indian culture, and disaster cleanup.

"I find great value in being able to incorporate both safety and tribal aspects into my role at ACRT Pacific. Whether it's through conducting webinars, speaking at industry events, or writing for an industry publication, I enjoy being able to cultivate safe, yet respectful, work environments," explained Youngblood.

He serves as a certified indirect trainer for the U.S. Department of Energy (National Nuclear Security Administration and Center for Radiological Nuclear Training), U.S. Emergency Management Institute, and Center for Domestic Preparedness, and as the tribal secretary for the Haslett Basin Holkama Mono Tribe of Fresno County, California.

For the past 11 years, Youngblood has led the California Tribal Emergency Response & Relief Agency (CAL TERRA) as its chief officer. He also leads presentations for regional safety organizations; developed apprenticeship curricula for use nationwide in cultural conservation and environmental science; and has written peer-reviewed articles for safety in the utility industry.

He earned a California Naturalist designation from the University of California, Davis, and serves as the tribal historic preservation officer for the Haslett Basin Holkama Mono Nation. Youngblood is currently working toward a special bachelor's degree from California State University, Fresno, in disaster archeology, cultural and natural resources, with a minor in American Indian studies.

Learn more about ACRT Pacific and our safety philosophy at pacific.acrt.com. 🌲



MK Youngblood

PHOTO: JEFFREY GILES FOR REC

SPOTLIGHT ON THE ENVIRONMENT

Wildfire Safety Prevention

By Stephen Hilbert, Manager, Asplundh Technical Services

AS OF MARCH 2023, MUCH OF the Western U.S. is being lifted out of the prolonged drought that has been occurring for the last 20 years. These dry conditions have been attributed to some of the worst wildfires on record in this region. Relief may be in sight. On March 2, news outlets reported that parts of the high county of California received 12 feet of snow in one week, with seasonal totals surpassing 41 feet. According to drought.ca.gov, last spring in California experienced some of the driest weather in 100 years. These near-historic amounts of precipitation are good news, not only for the residents of California but also the rest of the U.S.

The Great Central Valley of California produces one third of the country's vegetables and three quarters of the country's fruits and nuts (cdfa.ca.gov) and production last year was down significantly due to the dry winter, causing food prices to rise. Forecasts indicate that the additional precipitation will refill reservoirs and increase production in the Central Valley, reducing food prices. A similar drought-relieving scenario is playing out in other Western states. There is above-average precipitation and the hope that many of the reservoirs that the West relies upon can receive some reprieve. What's this have to do with vegetation management on ROW? Plenty.

Drought not only creates tinder-dry vegetation that the slightest spark can ignite, but causes stress on larger vegetation, such as small trees and brush. During this time, Western states have dealt with influxes of Western Pine Beetle (WPB), close cousin to Southern Pine Beetle (not to forget the Oak Wilt, for those in the Midwest), and can collectively be referred to as Ambrosia Beetles or bark beetles (Ambrosia refers to the fungus which the larvae feed). These beetles need trees that

are stressed and weak in order to effectively carry out their life cycle. A prolonged drought creates a perfect recipe of stressed trees, leading to this destructive beetle achieving explosive populations, creating thousands of dead, extremely dry trees—and plenty of headaches for utility vegetation managers. Hopefully, this snowpack can limit the beetle spread and give these trees some relief, although the added precipitation may create some additional concerns.

Desert-adapted vegetation, along with non-native ornamental species, will be able to capitalize on this excessive moisture into the spring growing season. According to report by BioMed Central, winter seasonal precipitation has a significant increase not only species richness, but also the growth rate and amount of the desert-adapted vegetation. Another study by the U.S. Department of Agriculture (www.fs.usda.gov/rm/pubs_journals/2019/rmrs_2019_snyder_k001.pdf), found similar results of more vegetation after periods of increased precipitation. Utility vegetation managers should expect an abundance of growth, particularly with fast-growing species, desert-adapted shrubs, and grasses and forbes. This will create an increased fuel load going into the drier summer months that the West experiences—and utility vegetation managers need to be ever prepared for the fire season.

Looking at the U.S. Drought Monitor website, large parts of the plains are in moderate-to-extreme drought conditions, optimal for wildfire events. Those performing UVM work in these areas can learn much from their Western counterparts in preventing wildfires.

Map released: March 9, 2023

Data valid: March 7, 2023

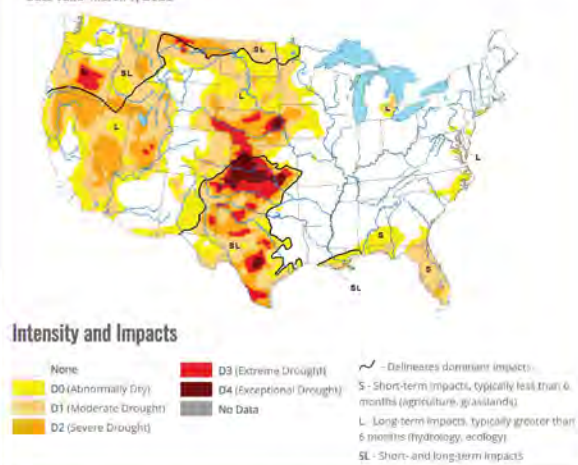


Image courtesy of the National Drought Mitigation Center (<https://droughtmonitor.unl.edu>)

As utility vegetation managers, there are key steps that need to be taken in order to prevent wildfires while performing the necessary VM on our nation's ROW. Each state has slightly different requirements around working in wildfire-prone areas, but here are some key takeaways:

Prepare a fire plan and procedure.

Each employee must be trained and understand the fire plan and the safety measures in place to prevent and mitigate a wildfire event.

Tools. Working in wildfire-prone areas requires that additional tools be included in the utility vegetation managers kit, including water pumps, fire extinguishers, shovels, rakes, and the proper training for their use.

Be aware of the surroundings.

Understand what causes wildfires during UVM, such as hot exhaust on vehicles, dragging chains, gasoline-powered equipment, vegetation touching powerlines, and rapidly changing weather conditions.

Utility vegetation managers are not there to fight wildfires. Our jobs are to prevent wildfires from occurring. And if our activities cause an ignition source, we need to be prepared to mitigate it quickly and, most importantly, safely. Wildfire prevention on utility ROW is a unique skill that must be reviewed and trained periodically that in the event of an emergency, the wildfire plan is executed as planned. 🌲



The 10 Keys to Life

By Craig Kelly, Safety Program Manager, Principal-Land Management, Pacific Gas and Electric Company

I'm sure at some point in your career you've heard or will hear of a horrible incident that happened to someone in the utility industry. Whether it's a fall from heights, a motor vehicle incident, broken bones, burns, shocks, struck by, pinch/crushed by, or an electrocution, they can all be considered Serious Incident or Fatality (SIF) incidents, depending on the form of energy and its consequence. Incidents like these (there are others, of course) are preventable if we just slow down and focus on the task at hand and follow established rules. Eliminating luck and never accepting "normalization of deviance" to be part of the safety equation is essential to returning home safe to our loved ones.

After the horrific San Bruno gas pipeline explosion on September 9, 2010, near San Francisco—where eight people perished and 37 homes were leveled—the Pacific Gas and Electric Company (PG&E) introduced what is known today as the "Keys to Life." These keys have become an essential part of the company's emphasis to shift its safety culture by sustaining a steadfast responsibility to customer, employee, and community safety. At the same time, a philosophy was born encouraging people to "speak up, listen up, and follow up," and that culture is transforming into a way of life—and not just the cookie of the month.

Pacific Gas and Electric's Keys to Life have been established to sustain a long-term/forever culture of safety, and it is expected that PG&E co-workers and its contracting partners all commit to the keychain 24/7. The keys are intended to keep in the forefront the significant risks teams are exposed to daily, and the policies, procedures, and practices that must be followed to prevent SIFs from occurring.

Although some of the Keys to Life are more technical and applicable during specific tasks being performed by trained personnel, others are appropriate for all personnel and can be applied even at home in some form or another.

1. Conduct a Pre-Job Safety Briefing prior to performing work activities.
2. Follow safe driving principles and equipment operating procedures.
3. Use personal protection equipment for the task being performed.
4. Follow electrical safety testing and grounding rules.
5. Follow clearance and energy lockout/tagout rules.
6. Follow confined space rules.
7. Follow suspended load rules.
8. Follow safety at height rules.
9. Follow excavation procedures.
10. Follow hazardous environment procedures.

These Keys to Life are guiding principles and beliefs used to help guide people in making those decisions that will prevent injuries, illnesses, and incidents. Each of these keys is fundamental to how work is performed safely.

Although Stop Work Authority (SWA) is not a key listed above, it certainly can be used as key 11, since it's considered yet another form of protection. Getting buy-in from a "new member"



Figure 1. Stop Work Authority steps. Image courtesy of Craig Kelly and Airswift.

on the crew can be difficult and sometimes impossible since fear of retaliation from stopping work and asking questions is quite real. However, the more we train and discuss the need and intentions of an SWA with crew forepersons and supervisors, the more understanding, acceptance, and execution of SWA there is. Stopping work should not be considered a challenge by anyone, but rather a very basic three-way confirmation regarding the decision on how work is being performed. Stop Work Authority is comprised of several steps (Figure 1).

In a future issue of the *Newsline*, we will take a deeper dive into Stop Work Authority and its importance. 🌱



GROW WITH TREES

planning, training, and reporting compatible vegetation management

How to Make a Safer Saw

By Pete Mazzaccaro, Writer and Editor, Asplundh Tree Expert

Throughout its 95 years as a VM company, Asplundh Tree Expert has made safety a cornerstone of its professional practice. The well-being of everyone is paramount and Asplundh employs a large team of safety professionals to make sure every procedure, training regimen, and equipment usage guideline meets and exceeds industry standards for safety.

Corporate EHS Training Manager Tracy Hawks manages a training team that travels the country overseeing trainer training in safe equipment use, tree felling, tree climbing, and more for the company. In addition to Asplundh's rigorous safety training program, Hawks' responsibilities include safety approval for every piece of climbing and rigging equipment Asplundh line clearance professionals use.

Back in 2019, Hawks was discussing the state of equipment with representatives from Husqvarna, one of Asplundh's chief equipment providers. He thought a useful tool would be a pole-mounted, powered saw that was also insulated. At the time, Asplundh relied on pole-mounted conventional saws to trim trees that were too close to powerlines to safely approach with available power tools.

"I told them, if you could get an insulated pole on one of your pole-mounted power saws, we'd buy them," Hawks said. It was the beginning of a productive collaboration between the two companies that would produce a tool that would advance safety for the entire line clearance industry.

A team began developing what would become the MAD Saw. MAD stands for minimum approach distance, the distance that line clearance professionals must maintain while working in and around high-voltage lines. The successful MAD Saw would allow trimmers to reach areas that were within that MAD without breaking it themselves. The idea was to make sure that those using the MAD Saw would be able to work more efficiently and safely while staying further away from the strike zone and line of fire.

As Husqvarna produced prototypes, Hawks and the Asplundh crews tested the saws and sent feedback. For approximately three months, Husqvarna provided new iterations of the saw. Hawks and other Asplundh testers suggested changes that Husqvarna incorporated with the results of its own testing. Eventually, the company settled on the final product, the 525DEPS, the first dielectric gas-powered pole saw individually



An Asplundh worker uses a MAD Saw on foot to cut back limbs. Photo courtesy of Asplundh.

tested to meet OSHA standard 1910.269.

The MAD Saw offers numerous improvements over past tools of the trade, particularly the pole-mounted conventional saws that had been the standard for safely cutting limbs at a distance. It also has advantages over other pole-mounted saws that require hydraulic drive lines or are mounted to trucks. The MAD Saw handle helps provide even weight distribution with the main motor and fuel tank located at the base of the pole. This makes it easy to extend and use over longer periods of time. As for reach, there are two size options, extending the saw's reach from 9 feet to 12.5 feet. The MAD Saw can also be broken down easily into separate components for easy storage and transport.

As for technical specifications, the gas-powered saw runs on Husqvarna's 25cc two-stroke gas engine; has a special 'Lowvib' handle to absorb the saw's vibration; is attached with toolless aluminum couplers for quick and easy attachment; and features a pole and shaft manufactured with a special, dielectric fiberglass that gives the tool both strength and insulation. The most important part of the tool, the saw head, includes two hooks for clearing vegetation and a 12-inch bar and chain. Husqvarna has also developed a battery-powered model, to be released in the near future.

For Hawks and Asplundh, the MAD Saw has been a big success. It has given the company a safe and reliable tool that is also flexible, allowing trimmers to use the tools on foot and in bucket lift. And most important is the ability to have a modern tool that can extend into that MAD zone—it's been a game changer.

"Before the MAD Saw, we never had an insulated, powered tool," Hawks said. "It makes a big difference, particularly during a storm. If you have a tree lying on a wire, you can only cut that tree with an insulated saw. We can do that now much more easily than when all we had were regular pole saws."

Hawks said that Asplundh workers are not only more safe in the field, but have also found that using the tool cuts down on musculoskeletal injuries, due to not manually using the tool like conventional, non-powered tools. "It's just been a great tool all around," he said. #



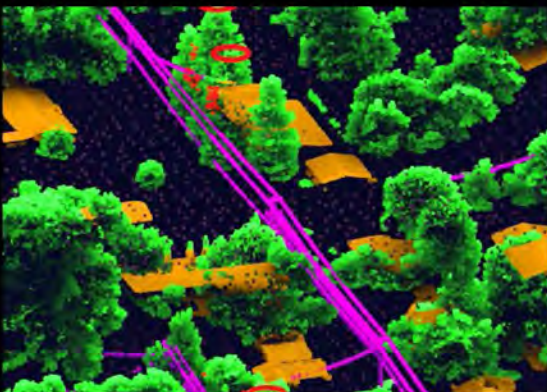
The MAD saw can also be used by workers in mechanical lift buckets, making them a versatile and easy-to-use solution for vegetation maintenance. Photo courtesy of Husqvarna.



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