

FEATURE

Supply-Chain Woes Overhang Tree Care

PORTABLE POWER TOOLS ISSUE

Volume 33, No. 1

TCIMAGAZINE™

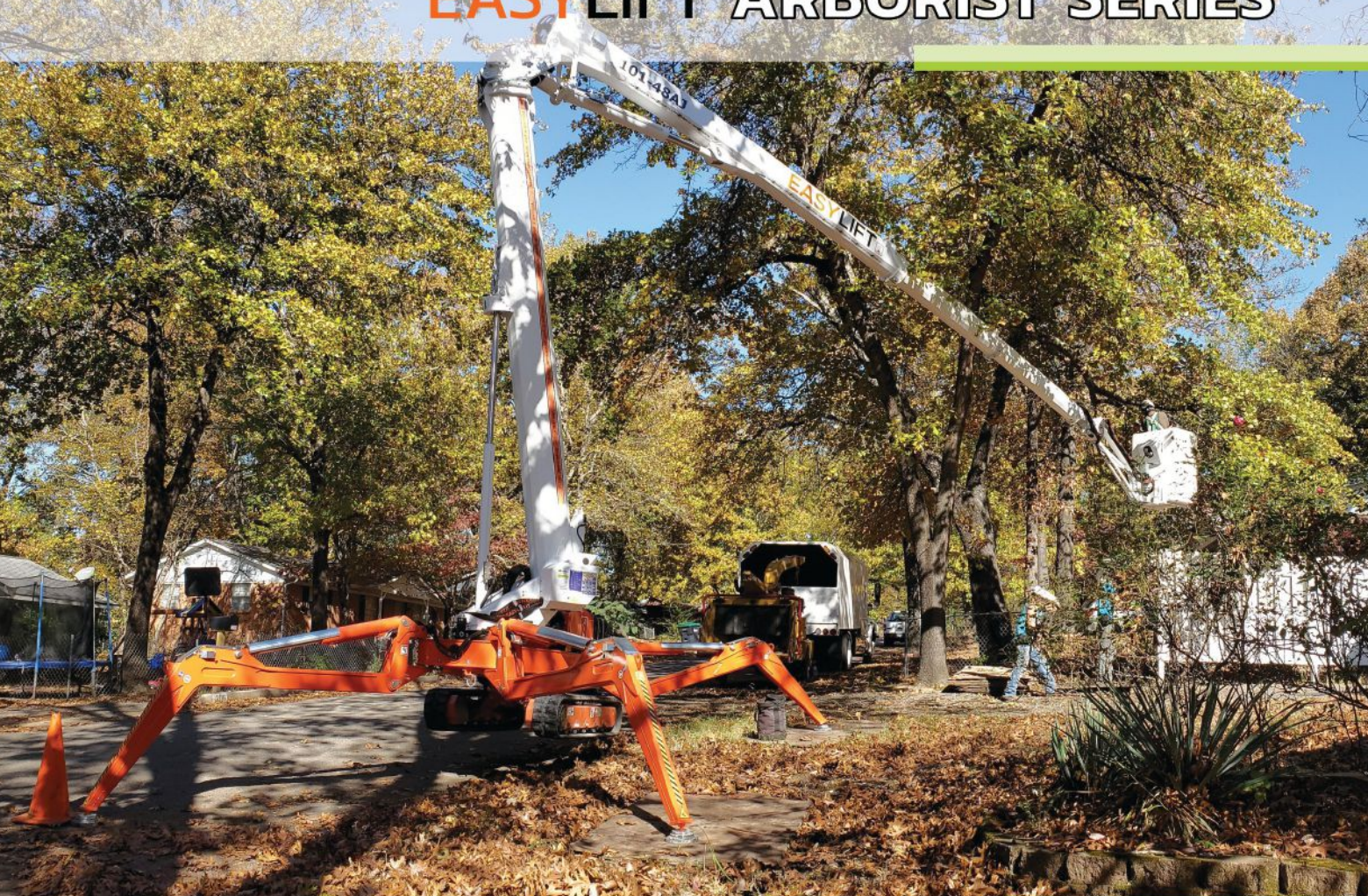
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TCI's mission is to engage and enlighten readers with the latest industry news and information on regulations, standards, practices, safety, innovations, products and equipment. We strive to serve as the definitive resource for commercial, residential, municipal and utility arborists, as well as for others involved in the care and maintenance of trees. We vow to sustain the same uncompromising standards of excellence as our members in the field, who adhere to the highest professional practices worldwide.

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January 2022

MAIN FEATURES

FOCUS: PORTABLE POWER TOOLS



12 | What Drives Choices for Powered Pole Saws and Pruners?

BY DAVID RATTIGAN

24 | Injuries Involving Handsaws and Pole Saws: Another Us Versus Them

BY JOHN BALL, PH.D., CTSP

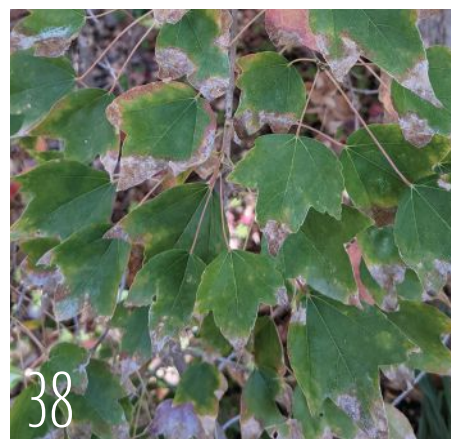
ADDITIONAL FEATURES

30 | Supply-Chain Woes Overhang Tree Care

BY RICK HOWLAND

38 | Abiotic Disorders of Trees

BY ARTHUR JAMES DOWNER, PH.D.



Please share this *TCI Magazine*
with a colleague.

TCI's 12-part series, *The Business of Plant Health Care*, will continue in the February 2022 issue with Part 10, "Marketing and Selling PHC Contracts."

ON THE COVER: James Couturier, a climber with Blue River Forestry & Tree Care, a seven-year TCIA member company based in Boulder County, Colorado, doesn't appear to be bothered by a little snow as he removes a stub on a hybrid poplar. Couturier works with Brandy Brown, co-owner of Blue River Forestry, who is featured in our "CTSP Profile" on page 42. Photo by Richard Weit.

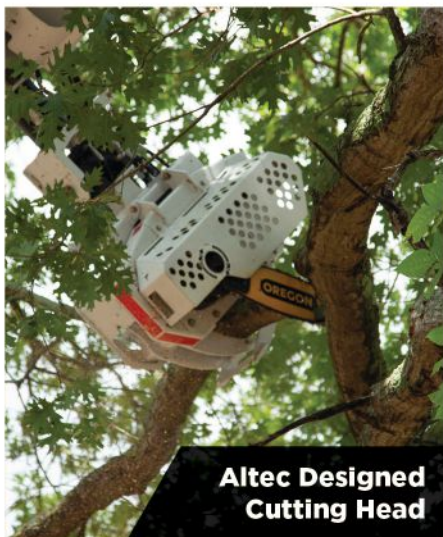
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INDUSTRY TOPICS

KEEPING UP WITH THE TREE CARE INDUSTRY



42

11 Outlook

BY JIM HOUSTON

Climbing skills remain essential.

20 Cutting Edge Products

All the info on the newest products and services for the tree care industry.

22 Industry Almanac

Don't miss out on the industry's important regional and national meetings and workshops, including training and education.

42 CTSP Profile

BY TAMSIN VENN

CTSP training motivates Brandy Brown to find creative solutions.

44 Accreditation Profile

BY PATRICIA CHAUDOIN

A passion for tree work leads to Accreditation for Trees by Jake.

48 Business of Tree Care

BY DAVID M. ANDERSON, CTSP

I can't find good help.

52 Shrub Pruning

BY HOWARD GAFFIN

"Bring me a shrubbery ..." shrub pruning – expand your diversity.

56 Arborist Skills

BY TRAVIS VICKERSON, CTSP, QCL

Selecting cut-resistant leg protection.

58 TCI EXPO

Record crowds for TCI EXPO '21 in Indianapolis.

62 Classifieds

64 Washington in Review

BY LARA DUNKELBERG

OSHA extends comment deadline on heat-injury ruling.

66 Accident Briefs

67 Industry News

68 New TCIA Corporate Members

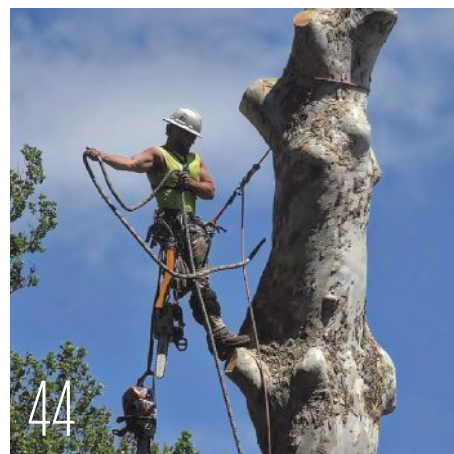
68 Letters & Emails

69 Advertiser Listing

70 From the Field

BY SYDNEY HUDZINSKI

Stovetop cooking, job-site style.



44



52



58



56

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JIM HOUSTON

Climbing Skills Remain Essential

What an incredible experience was had at TCI EXPO in Indianapolis this past November. The buzz from the showroom floor was centered around the evolution of equipment in our industry. Taller, bigger, faster continues to be the progression of equipment – really impressive stuff. However, the skill that true climbing arborists possess cannot be replaced by a piece of equipment.

As attractive as equipment can be to some of us, one of the many facets of tree care that attracted me to this career was the simplicity of the climbing arborist working in a tree. A harness, a line and some tools, and we safely ascend the largest of trees. It's hard to top the feeling of passing the purity of this art form down to a new, young, passionate climber, watching them learn the basics of tying in high to get out to the ends of the canopy in an effort to make the perfect handsaw cut of a dead, 2-inch limb. As an industry, growing climbers through proper training and education must remain a top priority.

This past spring, I came across a residential crew pruning three large red oaks. These trees hung over a gravel driveway with no hazards or obstacles below. However, much to my surprise – and dismay – one of the three oaks was being pruned out of a bucket. I have a pretty strong opinion regarding the quality of pruning out of a bucket compared to pruning from a saddle. As an industry, we are seeing more and more equipment squeezed into tighter and tighter spots on properties.

As all of us are aware, a shortage of people in our industry exists now more than ever. Educating the public to the unique art/science/athletic components of our industry differentiates us from similar labor- and service-based industries. Utilizing training road maps specific to a climbing-arborist career path will only attract more quality people to our industry.

With more and more companies continuing to mechanize as a response to labor challenges, we, as an industry, are confronted with attracting, educating/training and the development of climbing arborists. Data continues to prove that attracting and engaging quality people begins with training, education and career development. As TCIA members, we enjoy an abundance of training materials specific to the fundamentals of climbing – reason alone to join TCIA, in my humble opinion!

The advancement of equipment is paramount to the health of our industry. However, nothing compares to the key core skill of our industry, the art of safely ascending large, mature trees in the safest manner possible.

What training and education on the practical abilities of climbing practices are being utilized in your world?

Jim Houston is a vice president and general manager with The Davey Tree Expert Company, a 49-year TCIA member company based in Kent, Ohio, and a member of the TCIA Board of Directors.

Portable Power Tools



If you're a tree care professional, there's an excellent chance you'll buy your powered pole pruner from the same company you bought your chain saw from. Photo courtesy of Echo.

What Drives Choices for Powered Pole Saws and Pruners?

BY DAVID RATTIGAN

Depending on your specialty, the power pole pruner or pole saw might be one of the most used cutters on a tree care truck.

“I’ve heard of some climbers who climb with (power) pole pruners and that’s all they use, because they can work in one tree and prune three trees around it,” says Jack Easterly, product manager for Husqvarna, a 28-year TCIA corporate member company based in Charlotte, North Carolina. “It depends on the creativity of the operator, I would say. With a resourceful, creative and skilled operator, pole pruners can be one of the most important tools in the toolbox.”

Note that, while some manufacturers differentiate between pole saws and pole pruners, or loppers, some companies use the word “pruners” for their pole saws as well. In this article, we’ll try to differentiate where it matters to the point being made.

If you’re a tree care professional, says Jerry Morgan, there’s an excellent chance you’ll buy your powered pole

pruner from the same company you bought your chain saw from.

“Most of the professionals in the tree care industry are pretty brand loyal,” says Morgan, saw and product manager for the Chain Saw Division at Echo, Inc., a 20-year TCIA corporate member company with U.S. headquarters in Lake Zurich, Illinois. “If they have a certain model of chain saw they are using

regularly and they like it, they’re probably going to stick with the same brand.”

Which doesn’t mean they won’t do their due diligence before making a purchase.

“I think a lot of them do comparisons,” says Morgan. “They look at weights, they look at fuel capacities. They look at things like the auto dust-boat oiler on the bar and the chain. They look at air filtration. If it has a nice air-filtration system, one that’s going to keep that engine cleaner longer or need fewer maintenance intervals, that might come into play, but it seems like those users are pretty brand loyal. A lot of times they stick with the brand, unless that brand has failed them in some way or caused them problems.”

In addition to brand, some arborists may also be swayed by the power source, as states adopt new regulations about battery- vs. gas-powered tools. Also, with the amount of use a pole saw gets, arborists put a premium on both durability and dependability of the tool, according to those spoken with for this

**Brand, reach, power source
and dependability are
among the highest priorities
for arborists buying pole
pruners and pole saws.**

*In addition to brand, some
arborists may also be
swayed by the power source,
as states adopt new
regulations about battery-
vs. gas-powered tools.
Photo courtesy of Echo.*





A tool's power source – gas, battery or hydraulic – is among the highest priorities for arborists, according to Stihl's Mike Poluka. Photo courtesy of Stihl.

article. They also consider length of the pole it sits on and the bar length at the end of that pole, to determine reach.

What should a commercial tree care company owner consider when it's time to think about a new power pole tool? Five leading manufacturers weighed in with their observations about what tree care company owners prioritize and what should be considered. Not surprisingly, their preferences ran to their own products, but many of the things they cited were universal.

"It really depends on their needs," says Mike Poluka, product manager for battery products at Stihl, a 28-year TCIA corporate member company with its U.S. headquarters in Virginia Beach, Virginia. "We have pole pruners that are

fixed length. We have pole pruners that telescope, the longer lengths. And then the power source is really the big thing to look for. Do they desire a gas piece of equipment? Do they desire battery? Secondly, I would say, you're looking for durability. These are pro users. Their paycheck depends on the service the tool offers. So when they go to a job, the product needs to do the job and do it completely and minimize their downtime.

"Then there's also the service behind it," Poluka adds. "Any time you buy a piece of equipment, having that service network to support the product after the sale is also important, in my opinion. Whether it's replacement parts such as spark plugs, fuel filters or air filters, extra chains, bar and chain oil or the

right personal protective equipment, that's all supported through the Stihl dealer network. And those are the things I would think are important when considering your purchase."

Size matters

Not surprisingly, size matters when it comes to these tools. As Morgan describes it, tree care professionals consider the length of the handle and the chain saw on the end, as well as the size of the motor and the fuel tank (to do multiple jobs without stopping), along with features to determine durability and dependability.

Echo offers four models of its power pruner, a trademarked term for its pole saws, three in the 2620 Series (25.4 cc powerhead with a 12-inch bar) and one in the 225 Series (21.2 cc powerhead with a 10-inch bar). The company offers fixed-shaft lengths, starting at 94 inches, and telescoping shafts.

"Our telescoping one, when you extend it, gets you about 146 inches," he says. "Just over 12 feet of reach there. Another 4 feet of reach is, obviously, important. It depends on how broad your tree care business is and maybe the area you live in, things like that.

"I'm looking for fuel-tank capacity, so I can fill it up and have long run times," Morgan says. "Our 2620-series models right now have fuel tanks on them that hold just under 21 fluid ounces, which is about 40% bigger than our biggest competitor's models."

Quite often, as with automobile or truck purchases, customers will make a choice based on reasoning, but also because they are drawn to it for reasons of touch and feel. In the case of powered pole saws or pruners, one tool might feel better in their hands or they might like the sound of the engine, or one might remind them of a tool they liked or disliked.

"I think prior experience comes into play a great deal," Morgan continues. "That's why it's very important to us to make sure we're keeping current customers. We're confident in what we're doing in pruners and all of our products. We have a product that can go toe to toe with anybody else's in the market right now."



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New regulations, new technology

As some states consider or adopt new clean-air regulations, some tree care companies are changing power sources – to batteries.

“In the field right now, you have government organizations or local municipalities putting restrictions on the use of gas-powered equipment,” Poluka says. “When you have an outside factor such as that driving the change, then the user really doesn’t have a choice, and they have to seek alternatives, such as battery-powered equipment. That’s what we’re seeing now. (Clean-air legislation is) going to drive a lot of change in California in the coming years. And then, of course, you have states that tend to follow suit.”

Stihl boasts a wide array of pole saws, including both gas-powered models and battery driven, which launched in 2021.

“We have two telescopic ones really for the pro user; the model name is BHTA 135,” Poluka says. “If you look at an HTA



Echo's telescoping pole saw extends to about 146 inches, just over 12 feet. Photo courtesy of Echo.

135 (battery-operated), it uses the same drive shaft and cutting components as the truly professional gas-powered pole pruners. Same gearbox, same bars and chains. So Stihl is recognizing this trend in the market, this initiative to electrify things. And we are investing in new product development as it relates to battery equipment.

“When you talk to a lot of pro users, they recognize the change and the legislation that’s driving it. But there’s also part of the market that wants to make the change. They recognize the benefits that battery equipment offers. It’s lower noise, it’s less disturbing. If these tree care users are working in a neighborhood or near a hospital, college or university, they don’t want to make a lot of noise. Yes, battery powered has zero exhaust emissions, but it’s also low noise. And for the user, it’s easier to use. If you think about it, they don’t have to worry about flooding the machine; they put the battery in the unit and it’s essentially ready to go. So the learning curve is far less than for that of a gas-powered piece.

“We’re adapting, and we’re still supporting the gas side as well. We have options. From my perspective, that’s what makes Stihl an attractive supplier for the pro user for their needs. If they want gas, we have many gas-powered models. And if they desire to have a battery piece, we have several models, and that battery product portfolio continues to expand.”



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EGO's pole saw is an attachment that is part of the EGO Power+ Multi-Head system. Inset: The company's 56-volt ARC Lithium battery. Photos courtesy of EGO.

Better mousetrap

At times, a company has to resist the market's push for new technology.

"Anybody who buys anything for their

business wants to invest in something that's going to last," says Gerry Barnaby, who carries the whimsical title of director of excitement for EGO, a two-year TCIA corporate member company based in Naperville, Illinois, that specializes in battery-operated outdoor power tools. "A lot of our devotees are like, 'Come on, we need one of these.' We're just like, 'OK, we're working on it.' I mean, just to develop the battery for our tools took us eight years."

That battery, which fits any outdoor tool, is a source of pride for EGO. Its patented, 56-volt ARC Lithium battery is shaped like an arc instead of a brick. The design of the battery and its "Keep-Cool Cell Technology" is intended to keep the battery working or recharging.

"It's *Consumer Reports'* top-rated line of what they call cordless OPEs (Outdoor Power Equipment)," says Barnaby. "We have the longest-running, fastest-charging and longest-living battery on the planet at this point when it comes to OPE."

"We fan the battery cells out," Barnaby explains. "The second you pull the trigger and put a tool under load, be it a drill, a saw, whatever, it's going to generate heat, because there's work being done. With a human, you start to heat up and then you would perspire, and that's radiating heat. What happens with a brick battery, all the cells are stacked up one

on top of another, so they heat up very quickly. That's why sometimes batteries stall, because they overload. Then you have to let them sit and cool down, and then they'll start again. Or before you charge them, you have to wait for them to cool. With ours, they're fanned out, so they have access to air all the way around the battery.

"(Keep-Cool cell technology) is essentially a phase-changing jacket that goes over each one of the cells," Barnaby says. "It softens, if not liquefies slightly, under heat, so that allows 'perspiration,' if you will, of the batteries, (passing) heat out to the vents, whereas others are just trapped and they just sit and get hot, and that's bad for batteries. We also have a great power-management system that will always manage the loads inside the battery. It's going to give you a longer run time and, importantly, a faster charge time, because they're always ready to charge. They're never hot to where they need to sit and cool. If time is money, you want to have a battery that cools."

The powered pole saw works with fewer fumes and less vibration, he says, and the battery stays charged for a long time. It telegraphs to 13 feet, 2 inches, and the bar length is 10 inches.

"With the run time on it, because everybody wants to know how long it'll last on a single charge, you can cut 230 limbs the size of four-by-fours on a single charge," Barnaby says. "Because they charge faster than any other battery, you can take one battery off, put it on a charger, then continue cutting with a second battery. By the time this second one is done, the first one will be fully charged, so it's endless run time with two batteries."

Protective pole

Battery-powered technology isn't the only advancement in the world of powered pole saws.

"This is a good topic for us because we just launched the industry's first dielectric pole pruner, the MADsaw," Easterly says. Husqvarna's MADsaw (minimum approach distance saw) made its debut in 2021. "It is individually tested to meet the OSHA standard, which is OSHA 1910.269.

"Whether it's storm cleanup, everyday

tree work or performing tree trimming for line-clearance or utility workers who may need to trim trees or branches around power lines, this is the tool designed exactly for that,” Easterly says.

“The (alternative) tools on the market right now are either the manual pole pruners, which are extremely tiresome to use, slow cutting and can be potentially dangerous – but are dielectric, or non-conductive – or the hydraulic saws, which are generally all dielectric, with fiberglass shafts and dielectric hydraulic fluid,” Easterly says. “So you’ve either got this expensive, fast-cutting tool that’s not versatile at all and has to stay in the bucket of a bucket truck, or an extremely tiresome manual pole pruner. We’ve made what we think is the most versatile tool; we’ve improved productivity and safety by making a more versatile, dielectric pole pruner.”

Easterly is cautious in his assessment of how much safety can be improved by the tool, but also is optimistic about enhancing safety for workers, as much of a worker’s safety depends on the worker themselves and their training.

“Storm cleanup is the number-one application for this tool,” he says. “This allows operators to work faster and further away from the strike zone. They’re able to stay far away with a dielectric tool and do it quickly, instead of a manual pole pruner, for example. So there’s a lot of different applications for this. Storm cleanup seems to be number one.

“Anything out there that could improve safety is a win,” Easterly adds.

Hydraulic tools

In addition to gas and battery power, commercial tree care companies, particularly those involved with line clearance, turn to hydraulic pole saws and pruners. There’s nothing new in hydraulic saws, but the demand is strong, according to Sharon McCarty, vice president of sales and marketing for Arrowhead Aerial Products, Inc., a 14-year TCIA corporate member company based in Hermantown, Minnesota, and a distributor of hydraulic pole pruners and pole saws.

A hydraulic pole saw is tethered by a hydraulic hose to a truck, usually right in



Husqvarna’s MADsaw (minimum approach distance saw), a dielectric pole pruner, made its debut in 2021. Photo courtesy of Husqvarna.

the bucket of an aerial lift, or a generator, which cuts back slightly on their versatility but not their effectiveness, McCarty says. And since they’re connected to a

truck that’s passed state emission standards, they’re not impacted by regulations on power equipment. McCarty calls them versatile tools that are easy to use.

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Sharon McCarty, with Arrowhead Aerial Products, Inc., talks hydraulic pruners with a pair of attendees during TCI EXPO '21 in Indianapolis this past November. TCIA staff photo.

"The biggest advantage is that you plug them into the truck, they're ready to go, they don't need to warm up nor are they tough to get started when you're up in the bucket trying to work, because they run right off your truck," says McCarty.

Arrowhead Aerial Products had a good year in 2021, moving products particularly at trade shows, including TCI EXPO.

"I had one guy come up to me, he said, 'I went to running gas saws up in my truck, and I'm switching everything back to hydraulics because it's a lot cheaper with the price of gas going up,'" she says. "You have to buy special gas for a lot of these gas-powered saws. You can't just choose regular, plain old gas. He said it would be a lot cheaper to run a hydraulic saw."

The poles are placed in the boom-holder in the bucket when not in use.

A hydraulic pole saw has three different lengths, 62½, 75 and 88½ inches, the longer one being McCarty's biggest seller. "It's all in what they want to handle. It's all customer preference."

Buying smart

To review, here are some things to ask yourself when buying a new powered pole saw or pruner.

- What length of pole do you want?
- What type of pole do you want, fixed or telescoping?
- How much cutting power do you need? How long a bar on saws?
- How does it feel? How does it sound?
- Is it durable and dependable, or just durable?
- Is it easy to use?
- Do you need to consider additional regulatory or safety issues?
- Are you happy with the warranty and the service provider?

One thing manufacturers agree on is that, once they've captured a customer, they don't want to let them go.

"We want to continue to maintain and keep their confidence in the products we're launching," says Echo's Jerry Morgan.

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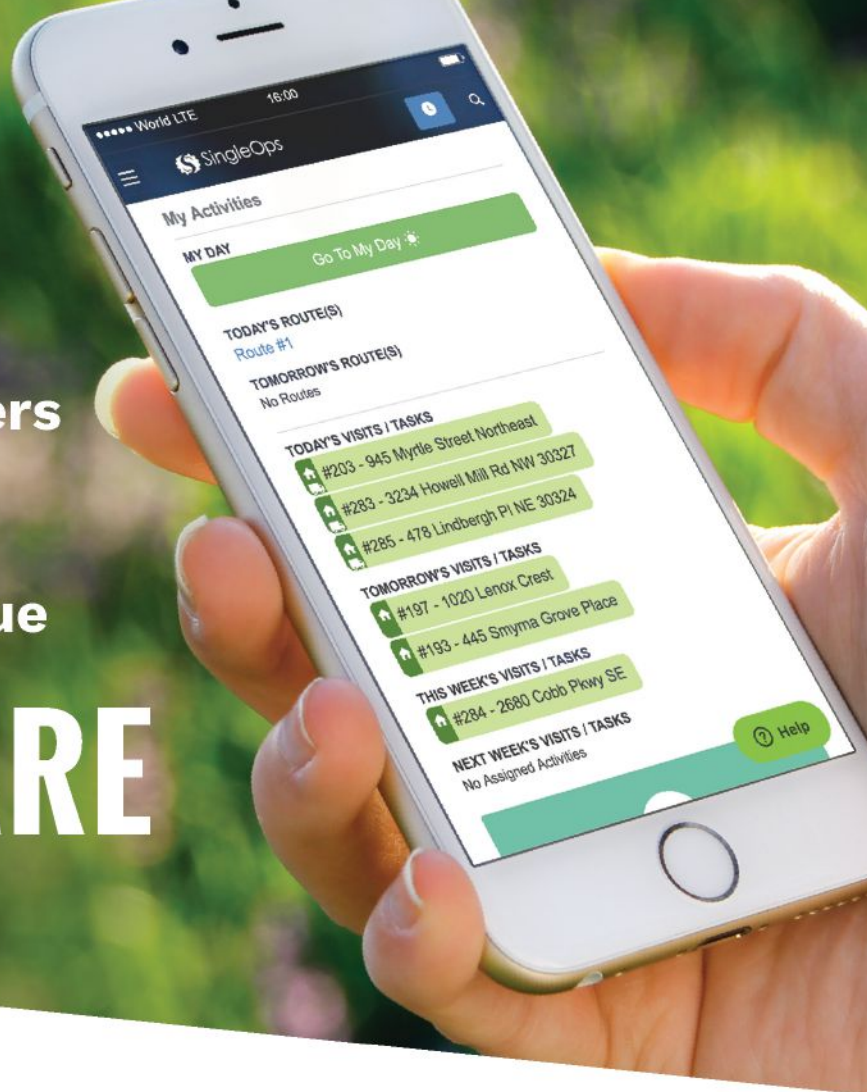
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Arbortech Skybox Chip Body

Arbortech has introduced what it is calling the industry's first chip body with an integrated, retractable roof. The Skybox Chip Body features a pair of roof sections designed to quickly and easily slide forward, transforming the chip body into an open-roof vehicle capable of handling a variety of work-site tasks. The Skybox is a design evolution inspired by Arbortech's removable-roof body. It utilizes the same robust, double-walled-body side construction originally engineered for chip bodies with no roof structure at all, and the same heavy-gauge, rust-resistant material. Skybox packages come in 12- and 14-foot configurations, both with sliding roof panels at the rear and center of the body and a fixed (non-sliding) panel at the front. One person can open or close the roof without any tools. When the roof is fully retracted, each body has an open area of more than 56 square feet. The Skybox moves along a stainless-steel track on maintenance-free, oil-impregnated bearings. The smooth body side panels are ideal for company signage. Standard packages come with a lockable, L-shaped toolbox, a ladder box with a pole-pruner shelf, an underbody hoist, a coal-tar-epoxy bed liner, an LED light package, wheel chocks, undercoating for additional corrosion protection and a heavy-duty hitch package. (arbortechchipbodies.com)



Sennebogen 728E tree care handler

The new 728 E-Series tree care handler joins Sennebogen's 718E and 738E handlers, introducing a longer working range on a transportable machine. The 728E is equipped with a compact boom and telescopic stick that can extend to a total reach of up to 69 feet. The pneumatic-tired undercarriage is designed to provide stability and mobility in off-road applications and for self-transport between work sites. Its 13-foot width reduces to 10 feet for transport on a lowboy trailer. The elevating Maxcab can rise 9 feet above the platform and can be tilted by 30 degrees for overhead work. The operator station features ergonomic controls and a comfort seat. For added safety, the operator is protected by a roof and front grills, as well as windshields and side windows made of bulletproof glass. The spacious cab offers a panoramic view over the entire work area, while dual cameras ensure 360-degree visibility. The 728E's 187-hp, Tier IV Final diesel engine drives two hydraulic circuits. A separate, high-flow-capacity auxiliary hydraulic system comes standard for independent operation of the attachments. Its standard grapple saw can be interchanged with a mulcher, cutting unit and more. (sennebogen-na.com)



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Each issue of *TCI Magazine* has a variety of articles tailored to the specific needs, concerns and interests of arborists. *TCI* solicits a number of articles from outside writers to keep its editorial content fresh.

Do you have a story for *TCI*?
The editor will be happy to review your idea or manuscript and discuss it with you. Contact editor@tcia.org.

Here are some of the upcoming topics for the next two issues:

FEBRUARY

Theme: The Business of Plant Health Care
Special Features: Trees' Response to Nutritional Supplements
Business of PHC Series: Marketing/Selling PHC Contracts

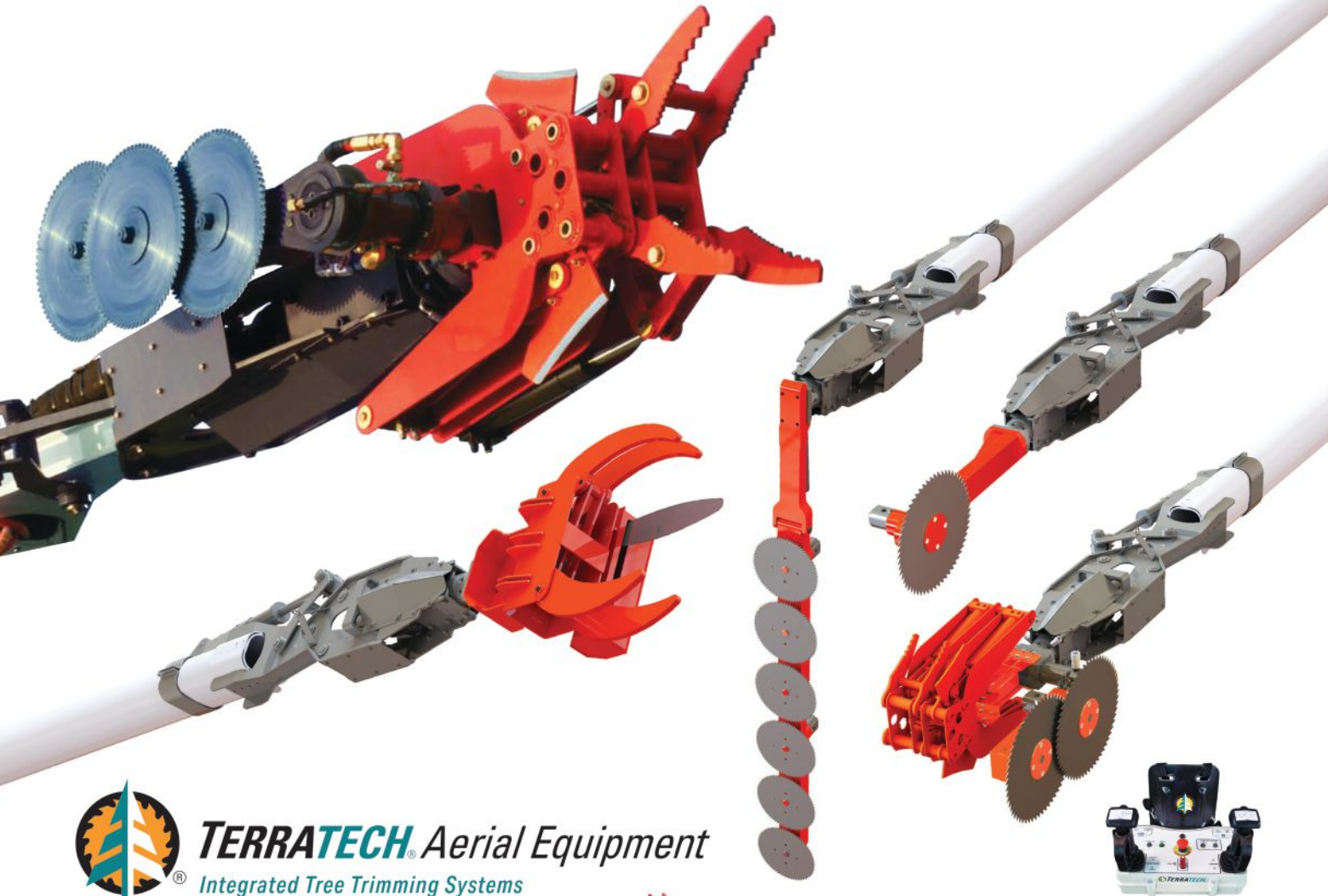
MARCH

Theme: Women in Tree Care
Special Features: Key Take-Aways from the WITC Summit at TCI EXPO '21
Business of PHC Series: Scheduling/Fulfilling PHC Contracts

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Do not cut directly above the head. Instead, try to hold the saw at about a 60-degree angle, so the branch does not fall directly on the worker. Photo courtesy of John Ball, Ph.D., CTSP.

INJURIES INVOLVING Handsaws and Pole Saws: Another Us Versus Them

BY JOHN BALL, PH.D., CTSP

Handsaws and pole saws – what more basic pruning tools are there than these? Handsaws are mandatory for most tree crews. Every time their feet leave the ground, whether climbing the tree or flying the aerial lift, a tree worker must have a handsaw with them. Pole saws extend the radius of our reach. They permit a tree worker to prune branches beyond the reach of an aerial lift or on branches too small to support their weight. It is hard to find a tree crew without at least one handsaw, and many carry a pole saw as well.

You also can find both of these tools in many residential garages and storage sheds throughout the country. The do-it-yourself tree trimmers (DIYTT) find these two tools essential for performing shrub and tree pruning. I use the term “pruning” lightly, as I am not sure if that describes the work done by them on plants; chopping and slashing might fit better. Still, it is good that the public makes use of these tools when you consider the alternative. Chain saws, which many DIYTTs use far too casually, result in numerous visits to the local

emergency department (ED) and, unfortunately, sometimes the morgue.

We also have seen falls each year as DIYTTs stand on ladders or free-climb to prune their trees. They also experience falls from lifts when DIYTTs overload rental equipment or fail to follow other basic safety requirements. A pole

saw can eliminate the need to leave the ground, and pruning from the ground can reduce risk.

Reducing the risks is not the same as eliminating the risks. Every year, the DIYTTs arrive at their local emergency rooms with injuries sustained while using handsaws and pole saws. Tree workers are not immune to injuries from using these tools. We also see tree workers in the waiting rooms due to mishaps from the misuse of handsaws and pole saws.

So, what is happening out there and to whom – the DIYTT, or the tree worker? This is the third in a series of articles looking at incidents occurring to these two groups as they go about pruning and removing trees. The first two articles examined chain-saw and chipper injuries presented to the emergency departments at local hospitals. (“Chain-Saw Injuries: Us Versus Them,” *TCI*, May 2021; and “Chipper Safety – An Analysis of Wood-Chipper Nonfatal Injuries: Us Versus Them,” *TCI*, July 2021) This article will focus on two basic tools that are involved in fewer visits,

It is hard to find a tree crew without at least one handsaw, and many carry a pole saw as well. Every year, we see tree workers in the emergency-department waiting rooms due to mishaps from the misuse of handsaws and pole saws.

Shown here employing a handsaw is Kyle McCabe, CTSP, Certified Arborist and owner of Northern Arboriculture, an 11-year TCIA member company based in Merrimack, New Hampshire. TCIA staff file photo.





Metal pole pruners and saws should not be used in trees with overhead power lines. Photo courtesy of John Ball.

but that still account for injuries.

The data was collected through the same sources as with chain saws and chippers, with databases from the U.S. Bureau of Labor Statistics, U.S. Occupational Safety and Health Administration and hospital emergency departments visited being the principal sources. And an important reminder, the term “tree worker” in this series of articles applies to anyone being paid to work on a tree. This means that landscapers and gardeners are included, as well as arborists.

Handsaw incidents

About 35,000 people with injuries sustained while using handsaws passed through emergency departments during the last decade. Most of these injuries happened while cutting boards with carpentry saws. Only about 18% of these injuries were from cutting trees and shrubs with handsaws. Most of these injuries from cutting trees and shrubs with handsaws happened while pruning branches (74%), though patients also mentioned they were trimming branches or the base off their Christmas tree (11%), and some were cutting down small trees (9%). About 6% of the injuries were from changing blades or carrying the saw without the scabbard, among other things.

The injuries associated with using a handsaw were generally less severe than those from chain saws. Fewer than 1% of

the ED visits involving handsaws required admission to the hospital. However, there were some similarities. Lacerations, a deep cut or tear into the flesh, were the most common injury reported for handsaws. A little more than half the injuries presented to the ED were lacerations to fingers and thumbs, mostly on the left hand. Hand lacerations, again the left hand, were also common.

Finger, thumb and hand lacerations are, not too surprisingly, injuries associated with handsaws. The saw blades are sharp, and people often hold the branch they are cutting a little too closely to the saw. The third area for lacerations, to the legs, was from the user supporting brush on their leg while cutting, or from dropping a saw while walking and having it strike the leg (wearing shorts) or sometimes the foot or toe (wearing sandals). Other lacerations were to the arms and wrists.

There also were lacerations to the face, often when the saw kicked back when the cut branch swung. The “saw jumped” was a common patient statement in the incident narrative.

While lacerations were the most common injury, there were others. Nerve injuries were associated with some of the lacerations. There were also amputations of finger and thumb tips. Contusions, or ruptured capillaries, were noted in some reports. Debris and small splinters were responsible for corneal abrasions.

There were also reports of strains and sprains. Considering the average age of the patients presenting to the ED with a handsaw injury was about 48, maybe the workout was a little too much for the DI-YTTs. The age range was 8 to 81 years old.

There were also a few fractures. The saw did not cause the fracture, but it was a secondary source. The primary source was the ladder they were standing on when pruning with the handsaw. Sometimes the branch being pruned swung back, knocking the ladder away. Other times it was overreaching that caused the ladder to fall. The most common fractures from these falls were to the ankle and wrist.

Tree workers had many of the same injuries as the DI-YTTs. Holding the branch too closely with the left hand while cutting with the right resulted in lacerations. Finger and thumb tips were prone to being snipped, so there were also some amputations. But tree workers had fewer leg injuries. They usually know to put the saw back in the scabbard (fewer leg injuries and you lose fewer saws on the job sites). But there was one different injury. It was related to the fractures from falls.

Yes, they also happened from ladders, though many tree workers know they must be secured before working from a ladder. But a few of their falls were from cutting the climbing line with a handsaw. We recently had a climber who severed the climbing line with a handsaw, and the fall resulted in ankle and wrist fractures. The Z133 American National Standards for Arboricultural Operations – Safety Requirements requires a climber to be secured with their climbing line and a second means (e.g., lanyard or a second climbing line) when operating a chain saw in a tree. There are no similar requirements for handsaws, but maybe it is not a bad idea.

Pole saw/pruner incidents

Pole saws can be powered, primarily through gasoline or electricity, or rely on muscle – the manual pole pruners and saws. Manual pole pruners and saws are coded under handsaws, while the powered pole saws are under powered saws (this code does not include chain saws). Manual pole saws accounted for about 2% of the 35,000 handsaw injuries. Powered-saw injuries resulted in about

130,000 visits to the ED during the past decade. Most of these injuries happened while cutting concrete, pipes, boards and tile. Powered pole saws were involved in far fewer than 1% of these injuries.

Manual-pole-saw injuries to DIYTTs differed from those associated with handsaws. There were fewer lacerations, since the cutting blade on the pole saw is farther from the operator. There are also manual pole pruners, which avoid the problems with a blade, but their use is not injury free. Severed fingers or thumbs caught in the pruning shears of pole pruners were mentioned in some incident narratives.

Lacerations were still the injury reported for about half of the DIYTT incidents involving manual pole saws. Some happened when the operator grabbed the blade and cut themselves. But most of these lacerations were to the head and face when struck by the saw or cut branch, occurring when either the saw or branch fell back on the operator. Corneal abrasions also occurred when the face was struck by the saw.

Tree workers also suffered lacerations from manual pole saws, not usually to the fingers, but to the back and shoulders. They were not using the pole saw as a back scratcher. Rather, it was hung on a stub or branch above them and fell. Don Blair, in his classic 1995 book *Arborist Equipment: A Guide to the Tools and Equipment of Tree Maintenance and Removal*, mentions using a 3- to 4-mm nylon cord to make a lanyard to secure the pruning saw to the stub or branch. Not a bad idea. Tree workers also had lacerations to the head and face, not from the saw, but from being struck by the falling branch they had just cut.

Another common reason DIYTTs visited the ED after using a manual pole saw was chest pain. Holding a saw up and sawing can be a workout if the rest of the week the only thing you lift is a coffee cup. They also came in with complaints of sore shoulders, arms and necks. But some DIYTTs were not feeling much pain when they arrived in the ED. It was not mentioned very often in the narratives, but a number of reports stated the patient had been drinking at the time of the incident: "The patient reports having only three beers."

There was one more nonfatal injury that happened to both the DIYTT and the tree worker. It did not involve lacerations, amputations, contusions or the other injuries already mentioned. It was electrical burns from indirect contact with an overhead power line. And a tragic difference between electrical contact and the other incidents involving handsaws or pole saws is that these were often fatal.

We had about two electrocutions a year over the past decade from tree

workers touching a pole saw to an overhead power line. These almost all involved distribution voltages. These indirect contacts result in high-voltage (often defined as greater than 1,000 volts in the medical field) injuries. High voltages quickly overcome skin resistance, travel into the underlying tissue and result in deep, extensive burns. These burns, which may travel beneath relatively unaffected skin, can require specialized medical care – if you survive. Too often these injuries are fatal.



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Manual pole saws accounted for about 2% of the 35,000 handsaw injuries during the last decade. Photo courtesy of Arborwell, an accredited, 21-year TCIA member company based in Newark, California, now a SavATree company.

Slightly fewer than half of the tree workers electrocuted through indirect contact with a pole saw were identified as landscapers, a few as gardeners. But about a third were workers for a tree care company. The average age of an electrocuted tree worker was 36 years old. The

age range was from 20 to 52 years old.

Almost half of the tree-worker electrocutions involving pole saws happened to operators of mobile, elevating work platforms, from compact lifts to truck-mounted booms. About a third of the

electrocutions occurred to tree workers standing on a ladder while holding the pole saw. The remainder were to climbers, mostly on spikes, and ground workers.

A common incident was a tree worker with an aluminum pole saw reaching out of the metal platform basket of a compact lift and touching the primary with the pole. Another common incident was a tree worker electrocuted while standing on an aluminum ladder holding an aluminum pole saw. This combination of lifts, ladders and poles can easily put the extended reach of the worker into overhead power lines. Aluminum and power lines are not words that should be used in the same sentence.

The pole saw was identified as either aluminum or metal in about two-thirds of the electrocutions. A couple were gas-powered, telescoping saws or unknown. There was a single fatal incident with a fiberglass pole.

Hydraulic saws were not exempt from this hazard. We had a tree worker electrocuted by contact with a primary through

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the hydraulic pole saw while standing in the basket of an extending boom of an aerial lift.

While tree workers represent most of the electrocutions involving the deadly mix of pole saws and power lines, some DIYTTs also suffered this fate. There were fewer incidents, less than one a year, but they happened while people were pruning their own trees or helping a neighbor with yard work. The difference was the DIYTT was usually reaching up with an aluminum (or metal) pole saw while standing on an aluminum ladder. Most of the powered pole saws have a maximum telescoping length of 8 to 15 feet, while manual sectionals can be extended to 25 or even 30 feet. It is not hard to reach an overhead power line from a ladder with a pole saw. There also were a few electrocutions of DIYTTs standing in a rental lift and holding a metal pole saw.

Final thoughts

Here are some simple tips for everyone, from DIYTTs to tree workers, for using handsaws.

First, whenever practical, do not support the branch with the other hand while cutting. If the branch must be supported by hand, hold the hand as far away from the saw as possible. Wearing cut-resistant gloves while using a handsaw can reduce minor laceration incidents. Puncture-resistant gloves are also a good choice. A recent tree-worker incident involved an amputation of a thumb infected by a cockspur hawthorn (*Crataegus crusgallii*) thorn.

Safety glasses are a must, as is a helmet. These are also Z133 Safety Standards requirements, one of the “shall” for workers during arboricultural operations. DIYTT should consider that if these are requirements for the professionals, it is a good idea for them as well. They also might think about wearing long pants and boots.

The same guidelines apply to pole saws – helmet, safety glasses, gloves, long pants and boots. Since being struck by a falling branch is a common injury for people using pole saws, do not cut directly above the head. Instead, try

to hold the saw at about a 60-degree angle, so the branch does not fall directly on the worker. Look for overhead power lines, and do not use a pole saw near them unless you have an insulated pole saw designed to be used near lines and you have the skills and training to do so.

Also, for tree workers, don’t use the pole saw as a bat to knock away cut branches. I have seen aerial-lift operators who could put baseball batters to shame with their ability to knock falling branches out of the canopy. But there are not any overhead power lines near the batter’s box in baseball. A swing and a miss with a pole saw can result in contact with a power line.

Finally, for the health of the tree and the tree owner, the DIYTT, tree work might best be left to the professional arborist!

John Ball, Ph.D., BCMA, CTSP, A-NREMT (Advanced - National Registry of Emergency Medical Technicians), is professor of forestry at South Dakota State University and a Board Certified Master Arborist.

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MICROCHIPS

Part of the supply problem is a backup of container ships in ports. "The bad news is that there appears to be no end to the supply-chain issue," says Joel Spies. "Shipping containers that previously cost \$1,500 to \$2,000 to send across the ocean now run about \$20,000." *TCI* graphic by Rich May.

SUPPLY-CHAIN WOES

Overhang Tree Care

BY RICK HOWLAND

This is the second in an occasional series on the worldwide supply-chain disruptions. The first, "Need a Truck? The News Isn't So Good," TCI Magazine, October 2021, touched on the trucking side. This time, TCI takes a broad look at the subject, cutting through multiple industry segments.

Sometimes it's the little things, and sometimes the big things, that contribute to the worldwide supply-chain bottleneck. One thing that just about everyone at any point in the chain, from manufacturing to purchasing, can agree on is that the situation is likely to be with us well into 2022 and, in some cases, 2023.

To illustrate how even the smallest piece of a product puzzle can be affected, Joel Spies, vice president of Rainbow Ecoscience, a 23-year TCIA corporate member company based in Minnetonka, Minnesota, points to how a potential delay in receiving plastic bottle caps for the company's tree care health products may be causing a slowdown in production. Spies, who is responsible for business development and overseeing the marketing strategy for all Rainbow divisions, says, "We supply insecticides, herbicides and growth regulators, products used for tree-health-care management.

We use chemicals primarily produced in China and, at some levels, in India. The whole supply-chain issue does affect a majority of these products.

"We hear news about Ford producing trucks and awaiting one piece (computer chips) to complete them. We are affected in the same way. If one ingredient is in short supply, we cannot make our products. That includes not only active ingredients, but also things you might not think of, such as plastic

bottles, caps, seals and labels. A variety of items are being shorted," he explains, pointing to the shortage of plastic bottle caps when a factory overseas shut down because of the COVID-19 pandemic.

"We have had some plants shut down due to COVID infections, and that caused two to three months of delays."

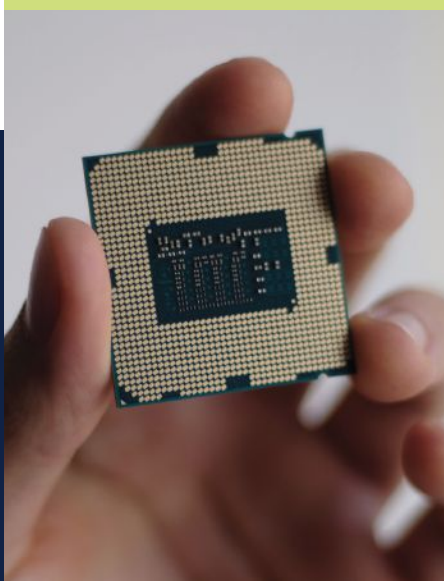
Spies says the agriculture industry, which uses many of the same agricultural chemicals, may be facing an herbicide shortage of up to 50% in 2022, but quickly adds, "We have not been affected to that level."

Capitalism plays a role, too, he says, pointing to a common insecticide used in tree care. "It is a lower-profit product, and because manufacturing plants are running at full capacity, they choose not to produce a product for which it does not make the most economic sense to produce."

On the positive side, as echoed further along in this article, manufacturers are doing whatever they can to keep up. "While we import a lot, much of our manufacturing is in the U.S. Up to today, we have stayed ahead of demand," Spies said in early December.

One thing that just about everyone at any point in the supply chain, from manufacturing to purchasing, can agree on is that the situation is likely to be with us well into 2022 and, in some cases, 2023.

"We hear news about Ford producing trucks and awaiting one piece (computer chips) to complete them. We are affected in the same way. If one ingredient is in short supply, we cannot make our products," says Joel Spies.
Photo by Niek Doup on Unsplash.





"We have substantial inventory on order, and there are delays," says Jason Morey. "We build what we know we have parts for." Photo courtesy of Bandit.

How? "We are buying more than in the past and are producing more product earlier than we usually do, and thus far have been able to mitigate the situation.

"What we are telling clients is, if you are going to need something, buy it," Spies says. "We have product today, but cannot promise it for June, July and August. Ours is a seasonal product. If you need it in July and cannot get it until September, it doesn't do you any good. So it's best to sit on inventory rather than hope

you can get the products you need when you need them.

"The bad news is that there appears to be no end to the supply-chain issue. The best we know from suppliers in China and India is that this will move into 2022 and 2023, and will not resolve quickly. The other bad news is rising prices. Shipping containers that previously cost \$1,500 to \$2,000 to send across the ocean now run about \$20,000," he states, adding, "Parts and pieces are being raised nickel-and-dime. Everyone adds 10 to 15%, and that results in 10 to 50% increases in your total cost."

He notes that this is another argument for buying before the next price hike. "The price now will not be the same in a few months," Spies predicts. "We are seeing big swings every two to three months." He also points to other variables boosting prices, such as local freight prices.

Concluding, Spies notes how everyone has had to change how they do business, including Rainbow Treecare, a sister company to Rainbow Ecoscience. "We now buy all electric chain saws," says Spies. "We switched for pruning needs when we found repair and maintenance for traditional saw pieces and parts were all bought up." He says the company had been looking into migrating away from gas-powered saws, but the parts shortage accelerated the

decision. He calls it an innovative way to solve the problem.

On the other end of the spectrum are manufacturers like Richard Goforth, one of the owners of Southco Industries, a 40-year TCIA corporate member company based in Shelby, North Carolina, and maker of truck bodies for tree care. While the cost of steel, as with other raw materials, has gone up, it is still available at a higher cost. Says Goforth, "Our biggest problem is getting chassis and cabs. Many truck manufacturers aren't making any more until 2022. Fortunately, we have some in stock and some chassis on order, but we do not know when manufacturers will be making them."

Southco typically adds bodies to truck chassis from the likes of Kenworth, Ford, Peterbilt, International and Freightliner. "The companies are taking orders, but buyers have no clue when they will get delivery."

Regarding steel pricing, Goforth puts that into perspective. "Last year, steel prices went up \$1,000 per unit. Prices went up \$1,000 just in the Third Quarter of 2021."

Goforth says, "If you order from us now, my guesstimate is that you would get it in the Second Quarter of 2022." He looks to



"What we are telling clients is, if you are going to need something, buy it," says Joel Spies. Photo courtesy of Rainbow Ecoscience.



"While we have been fortunate in some instances, supply-chain disruptions continue to cause manufacturing delays and production stoppages," says Jason Showers. Photo courtesy of Morbark.



"Our biggest problem is getting chassis and cabs. Many truck manufacturers aren't making any more until 2022," says Richard Goforth. Photo courtesy of Southco.

the microchip shortage affecting vehicle delivery worldwide and says, "If we could get chips, that would be a good thing."

All suppliers and virtually all brands are affected.

"Supply-chain disruptions have been wreaking havoc on equipment manufacturers large and small," says Jason Showers, director of tree care products for Morbark, LLC, a 42-year TCIA corporate member company based in Winn, Michigan. For his company, "The hardest-hit components have been hydraulic components, electrical parts and engines, which outside of steel, pretty much sums up the major components needed to build brush chippers, stump cutters, mini-skid-steer loaders and articulated wheel loaders."

Showers adds, "While we have been fortunate in some instances, supply-chain disruptions continue to cause manufacturing delays and production stoppages. Heavy cost increases on steel and other purchased components, extended lead times on purchased items and increased sales volumes all compound the complexity of navigating these challenges."

"To combat these complexities, we have adjusted our approach to purchasing commodities, requiring heavier front-end investments, to ensure we have enough product on order to keep the supply pipeline full, and have adjusted forecasting models to better predict emerging trends and provide a better look into the future when making strategic supply-chain investments."



Manufacturers point out that, if one ingredient or part is in short supply, they cannot make their products. Photo courtesy of Husqvarna.

He echoes the worldwide lament. "The key question is, when will the supply chain balance out and resume some sense of normalcy? Our best estimate is, 2022 will remain a significant challenge on the procurement end and will not correct course until sometime in mid-to-latter 2023."

Jason Morey, marketing manager for Bandit Industries, a 34-year TCIA corporate member company based in Remus, Michigan, is succinct in his assessment. "This situation is a challenge, making it difficult to forecast business," Morey says. "We have been increasing inventory for a lot of components to ensure we have a ready supply geared up for demand." He adds that one of the biggest challenges is in the area of hydraulic components where, he notes, Bandit is looking for alternative sources and regularly testing for quality.

Morey states that, for Bandit, steel supply "is not an issue, but the cost is increasing dramatically." The challenge there is to try to keep a lid on costs as much as possible and ensure that margins are good.

"We have substantial inventory on order, and there are delays," Morey says. "We build what we know we have parts for."

Acknowledging a good inventory of engines, Morey maintains, "What helps us is that we offer a wide variety of engines. If we do not have the exact engine for a machine, we will have another with

comparable horsepower. That has really helped."

"Most of our professional chain saws are produced in Sweden," says Ben McDermott, senior brand manager for professional chain saws at Husqvarna, a 28-year TCIA corporate member company based in Charlotte, North Carolina. "We, like many others in the tree care industry, faced significant supply disruptions in 2021, especially during the first half of the year. Since mid-year we have steadily recovered, and we are now in a much better supply position to serve our professional customers and the industry."

"It's still a global challenge. There is still a pandemic," he stresses. "Factories we deal with continue to see shutdowns and labor shortages – and we do not necessarily see that going away in the immediate future."

"The pandemic created a demand a lot of us in tree care did not initially expect," McDermott says. Initially faced with a global slowdown, he says, "We were prepared for the worst and expected a drop in demand, but the reverse has been true. While we have been dealing with supply constraints, demand also has remained strong."

That phenomenon was addressed in a lengthy White House blog, "Why the Pandemic Has Disrupted Supply Chains," dated June 21, 2021. That opinion piece and many others from around the world attribute such increased business for



When asked about wiring harnesses and hydraulic components being hard to come by, Jason Andringa said that's what's holding up the production of equipment such as stump cutters. Photo courtesy of Vermeer.

some companies and some sectors to unexpected demand for services (tree care), spot supply dislocations among competitors, driving buyers to products in existing inventory and a need or desire by buyers to get out ahead of real or perceived shortages and buy or stockpile goods for their own inventories (think the toilet-paper madness). McDermott

offers that there were times in 2021 when professional customers would go to a dealer and a specific saw was not on the shelf, "and when it gets to that point, they will choose what's available."

Regardless of the source of demand, McDermott says, "Our materials, purchasing, logistics and distributions teams have been working diligently since the start of the pandemic to minimize the impact of supply shortages to our customers. We constantly monitor the supply situation, making necessary adjustments to our plan, to minimize significant gaps in supply and maximize flexibility with the current demand situation."

"We do expect to see delays in transportation and component shortages in 2022, and therefore cannot rule out a supply gap, but we are cautiously optimistic about continued supply recovery."

In a wide-ranging interview of manufacturers across the U.S. during the fall of 2021, National Public Radio interviewed Jason Andringa, president and CEO at Vermeer Corporation, a 39-year TCIA

corporate member company based in Pella, Iowa, about specifics affecting his company. When asked about wiring harnesses and hydraulic components being hard to come by, Andringa said that's what's holding up the production of things such as stump cutters, which are in high demand after events such as Hurricanes Ida and Henri. He maintained, "We take pride in the fact that our equipment is used to help clean up after a natural disaster. And we try to maintain inventory during the normal hurricane season, but we can't do that at all right now."

When the NPR radio host asked about the 73-year-old company, which Andringa's grandfather started, enjoying record sales and being on track to add about 300 workers this year, Andringa noted he could have added twice that many people if he had had more parts to work with.

"My grandfather never dealt with supply-chain challenges this troublesome," said Andringa in the interview.

If any statement sums up the world's supply-chain snafus, that might just say it best. ■

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Abiotic Disorders of Trees

BY ARTHUR JAMES DOWNER, PH.D.

Shade trees contract many kinds of diseases, some of which can kill or greatly disfigure a tree, predispose it to storm or other damage or make it susceptible to other disease agents. All diseases develop over time, and this is what distinguishes them from simple injuries. Diagnosing diseases requires keen observation of symptoms (plant responses) and signs (pathogen propagules, fruiting bodies or other parts). Abiotic disorders lack a pathogen and thus cannot spread as diseases do on wind, in water or with vectors. These disorders are an interaction of the host (tree) and the environment over time. Since there is no pathogen, signs are not usually present – only symptoms.

Since the interaction that results in abiotic disorders is between the tree and its environment, these disorders are about adaptations. When the environment changes, if the environmental tolerances of the tree are exceeded, then symptoms will occur. The well-adapted tree has few abiotic disorders. Dr. Terry Tatter called abiotic disorders “people-pressure diseases.” People tend to modify the environment in ways that are not tree friendly. Growing conditions in cities often impose limits for tree growth and create environments for which many trees are not well adapted. Reduced water inputs, restricted root development, lack of mulch or litterfall, excessive pruning and reflected heat offer challenges for growing, healthy shade trees in urban landscapes. Abiotic disorders are so harmful that the average lifespan of trees in urban centers is reduced by decades from their natural lifespans.

To understand the impact of urban life on trees, it is important to consider all the functions of the various tree organs. Roots provide anchorage and physical stability to a tree, while also providing the water supply for the canopy as well as minerals necessary for all the biochemical reactions that go on in trees. Roots also interact with the soil microbial community and with the roots of other trees. Roots produce signaling molecules, known as phytohormones, and act as storage tissue for starch and other concentrated energy molecules.



Aeration tubes have no proven efficacy at improving soil oxygen content. These amount to landscape pollution. All photos courtesy of the author.



Chlorosis is the loss of chlorophyll. Here, interveinal chlorosis is a symptom of iron deficiency brought on by alkaline soil conditions (not lack of iron in soil, in this case).

Stems provide the architectural framework of a tree's canopy. The main stem or bole of a tree provides structure for the arrangement of major branches, which in turn branch and rebranch into an extensive network as a platform for leaves, the “solar collectors” of a tree.



This coast live oak (*Quercus agrifolia*) was burned by high temperatures in 2018 and 2020 in Ojai, California, suggesting that climate extremes go beyond a tree's adapted temperature tolerance.



Early damage from excessive sunlight on citrus leaves. Chlorophyll is destroyed under high-heat conditions. Drought exacerbates heat injury, as there is not enough water transpired to mitigate heat buildup.

Stems are also the conduits for water and minerals, as well as for photosynthate that travels throughout the tree and to roots. Stems also contain the meristems responsible for tree growth and reproduction. Leaves conduct gas exchange and the photosynthetic reactions that capture energy from sunlight, producing sugar molecules that move throughout a tree. All these systems interact with each other and are vulnerable to environmental changes.

An obvious dichotomy is that trees have two categories of potential environmental impacts: those to above-ground tree organs (stems, leaves and branches) and those to the soil-dwelling organs (roots). Extremes of light, temperature, humidity, wind and air pollution all impact the above-ground parts. These are modified by practices such as pruning and impacts of the surrounding landscape. Roots are affected by soil moisture content, oxygen content and soil-volume issues. Since the two systems of trees are connected, impact to roots often shows symptomatically in leaves, and, over time, impacts to the canopy can lead to reduced vigor of root systems or make them more susceptible to soil-borne pathogens.

It may seem obvious that trees need light, but too much light can be harmful to some trees and too little light reduces tree or branch vigor and can predispose trees to canker and other pathogens. Deciduous trees are adapted to high levels of light penetrating their canopies during winter, when the angle of the sun is low and leaves are not present. However, some deciduous trees,

such as apple, will be damaged by high light levels if they are over pruned and leaves cannot form fast enough to cover branches. Sunburn and sunscald affect thin or green-bark trees when they are exposed to intense sunlight after pruning or damage to the tree crown. Maple, camphor, apple, avocado and crape myrtle all have relatively thin bark that is easily damaged by high light intensities.

Another impact of high light levels is to release latent buds from dormancy. This can result in an abundance of epicormic shoots populating the tree crown. Vigorous epicormic shoots are more susceptible to powdery mildew and will require thinning later to maintain structural integrity in the canopy.

High and low temperatures also can dramatically affect trees. During the last few years, dramatic, record-high temperatures have occurred in the Western United States. These episodes were so extreme that canopies of native trees were severely burned in two separate summer seasons. High-heat events are likely a part of our climate future, and the impact of sudden canopy loss is not entirely clear. While the West endures record-high temperatures, in other areas of the country, sudden and severe onset of freezing temperatures can lead to frost cracks in trees and winter kill of everything, from the tips of conifers to entire shrubs in some landscapes. Temperature extremes usually are notable, and we have some warning before they hit so measures can be taken to limit damage.



Urban soils are often compacted, and water will pond on the surface. Compaction limits root growth and, combined with excess water, will result in root death.



Scorch of avocado from high temperatures. Avocados are not adapted for extreme heat, and foliage is easily damaged.

Root systems experience many abiotic conditions that may or may not cause notable symptoms above ground. Since roots are responsible for supplying both water and minerals to the canopy, they are essential to tree health. A compromised root system will take up less water and loses the ability to selectively import minerals that are required in the canopy.

In urban settings, soil compaction decreases soil oxygen content, making it harder for roots to “respire,” that is, to take in oxygen and release carbon dioxide. Compaction results in the physical destruction of soil structure, crushing and collapsing pore spaces that roots need to thrive. One way to fix compaction is to increase mulching in the root zone, as coarse, woody, tree-chip mulches eventually help to restore soil porosity. Severely compacted soils may need to be physically broken up to allow air to diffuse into lower layers. Over time, the best way to fight compacted soils is to stop the source of the compaction and increase organic matter that supports a healthy soil food web. There is no evidence that aeration tubes benefit shade trees by increasing soil oxygen levels.

Standing water is indicative of compacted soils. It also can be the result of excessive rainfall. Increases in flooding and suffocation of roots that experience

long periods of saturation reflect the changing climate in many parts of the U.S. Trees have some genetic tolerance for flooding, but the new norm may exceed some tree-adaptation capabilities. Trees in swampy, low-lying areas or on ground that does not drain well will die back, become infested with insects or root pathogens and gradually be killed out of the landscape. Planting resilient trees is going to be a growing part of urban forestry in coming years.

In places where trees rely less on rain and more on irrigation, salinity is often an issue. Usually in these locations, the amount of evaporation exceeds precipitation, and soils are not well leached. Many Western U.S. soils tend to build up higher quantities of salt and base cations. High salt levels in the root zone require more energy for the tree to take in water, as it must allocate salts to its roots to keep the osmotic gradient favorable for water movement into the tree. When soils dry out, they may exceed the osmotic tipping point in roots and water will move into soil from the roots, exacerbating physiological wilting.

Trees growing in salty water take in a lot of ions with the bulk flow of water. The salty water moves to the canopy and water is transpired, leaving those salts behind in leaves. The result is foliage that develops edge necrosis, or “salt burn.” Salt-affected plants are predisposed to root-rot-causing organisms, because their roots become more “leaky,” attracting zoospores of root-rot pathogens. The best cure for all this is for leaching rainwater to move salts out of the root zone. In absence of rain, it is best to keep soil evenly moist so that roots are not burned by salts as the soil dries down between irrigations.

Another soil-related problem is pH. Soil reaction, or pH, is tuned for optimal nutrient uptake by roots at a pH of 6.8. This value, just below neutral, is where the most plant-required nutrients are fully soluble. Soil reaction is a measure of the ratio of hydroxyl (OH) ions to protons or hydrogen (H) ions. At pH 7.0, the concentration of OH and H ions is equal. As you move up or down the pH scale, each number represents a tenfold increase or decrease of hydrogen ions. The pH scale is a log₁₀ (logarithmic₁₀) scale, so each number in the scale is 10 times greater or less than its adjacent number. So while pH 7.8 does not seem high, it is 10 times higher (more alkaline) than the ideal pH.

As soil reaction becomes more acidic (pH 5.8), metals in soil are 10 times more likely to dissolve and leach. As reaction becomes more alkaline (as in many Western U.S. soils), minerals precipitate into insoluble compounds and are bound from absorption by roots. Nutrient deficiencies in trees



Tip or edge necrosis of leaves occurs when salts accumulate or are left behind in leaves as a result of transpiration.

may reflect the absence of a necessary mineral in soil or a pH condition that does not allow the needed mineral to be taken up sufficiently by the plant. Diagnosing deficiencies should always involve a test of soil reaction to see if absorption is likely or unlikely. Beyond pH, soil tests for macronutrients and micronutrients should be used to further refine a fertilization program. Trees mulched with fresh woodchips require less fertilization or none at all in Western soils.

Abiotic disorders are caused by extremes in the environment. This is tempered by a tree's adaptations to its environment. A tree well adapted to soils and climates suffers less from abiotic disorders than species that are marginal in a growing area. A challenge for arborists will be to select trees that match the changing environment, which in the future may be more extreme in temperature, water availability, salinity, wind and humidity.

Arthur James Downer, Ph.D., is environmental horticulture/plant-pathology advisor with the University of California Cooperative Extension in Ventura County, California.

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CTSP Training Motivates Brandy Brown to Find Creative Solutions

BY TAMSIN VENN



Blue River Forestry & Tree Care's Bailey Null, left, and James Couturier seamlessly working together, making it easy for a quick cleanup on a big removal. All photos by Richard Weit, courtesy of Brandy Brown.

“You have to really understand how people learn and how important that is when you are teaching safety material,” says Brandy Brown, co-owner with her husband, Dustin, of Blue River Forestry & Tree Care in Boulder County, Colorado.

That is why Brown, director of operations for the 25-employee company, which she says is well known in the Boulder area for its safety and efficiency, pursued TCIA's Certified Treecare Safety Professional credential. The CTSP program trains tree workers on how to develop a culture of safety at their workplace. From a business standpoint, it also is a prerequisite for earning TCIA Accreditation, which the 14-year-old, seven-year TCIA member company is currently working on.

Effective communication is especially key in the current tree industry, Brown says, pointing to all the new, diverse equipment available and the speedy evolution of gear and techniques during the past 20 years.

“How can people learn all of this?” she poses.

In the tree business, “Crews, men and

women, are working with their hands; most are tactile learners,” she says. “They learn from doing or seeing, or a combo of both. How many of them – how many people in the world – learn from just having someone talk to them?”

During a session that was part of the TCI Virtual Summit hosted by TCIA in January 2021, Brown was inspired by the description of a Jedi motivational system that Joseph Tree of Columbus, Ohio, had implemented. As a result, “We created a belt program, like you have in martial arts, where you move through the levels as you gain skills and knowledge. We took all the TCIA Tree Care Academy training material and worked it into this belt program, along with other training materials,” she says. Also, staffer Kara Cross created an appropriately named “Jeopardy” game.

“The ‘Jeopardy’ game includes material from training sessions as well as from ISA's Arborists' Certification Study Guide. People are having so much fun with it,” she says.

Brown says she feels TCIA's Tree Care Academy is doing a good job in setting industry standards. Also, she says she



Brandy Brown

wants to make sure she is getting the most out of the education she received during the CTSP training and is utilizing it to its full potential. In the first year since gaining her CTSP credential, which she did in June 2020, she is already in the midst of completing her CEUs required for recertification, which is every three years. She likes the fact that the CTSP training/workshop is now available online.

"I would love to see the program stay with an online option, not just because of COVID," Brown says. "If you are an arborist, a lot is done out in the field, and there is no need to be on a computer, but everyone has an iPhone and everyone uses it. Make the course and material available for everyone, and make it easy to get."

The tech revolution for the arborist who spends his or her days outside, who does not need to own a computer, is here, she says, and Instagram is a popular platform with tree workers.

"They are so passionate about this field



Kody Carleton works the rigging rope. "Communication is key, and being alert and responsive keeps everyone safe," says Brandy Brown.

that when they see a posting where someone isn't paying close attention, they will call it out. They don't want the younger generation to do what they were doing 20 years ago. It's important,

because it's lives we're talking about."

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A Passion for Tree Work Leads to Accreditation for Trees by Jake



Jake Emanuel piecing down a tree. All photos courtesy of Trees by Jake.

BY PATRICIA CHAUDOIN

As the home page of its website so clearly points out, Trees by Jake, LLC – a second-year TCIA member company located in Tulsa, Oklahoma – is one of only three accredited tree services in Oklahoma. And they're proud of it!

Jake Emanuel, CTSP and ISA Certified



Allison and Jake Emanuel

Arborist, and his wife, Allison, also a CTSP, are owner and operations manager of Trees by Jake respectively, and they decided to feature their Accreditation status prominently on their website. It says, "This accreditation recognizes the company as one of the top in the industry and helps consumers identify tree services that adhere to the highest standards when it comes to safety, legal compliance, ethics, quality and consumer satisfaction."

The Emanuels say that taking their company to another level of professionalism was a top priority for them as they began to grow the business. Jake officially launched Trees by Jake in 2013, having worked for years for another Tulsa tree service. Allison explains, "His former boss was an arborist with decades of experience in the Tulsa tree industry. He helped teach Jake a lot about the science of trees and great leadership. He's the smartest person we know as far as his knowledge of trees goes. We still talk to him on a regular basis."

As for Jake's climbing ability, Allison says, "There was another employee there who taught him the basics, but he's basically self-taught. He spent a lot of weekends climbing trees and trying out new equipment that he bought at his own expense. Along the way, he had a client base he had built up, and that was when he decided to go out on his own. He had an F-150, a 16-foot utility trailer and a chain saw. Honestly, I look back at some of his early jobs and wonder, 'How did he manage to get that job done?'"

The couple met in 2009 when Jake was hired to remove a tree at Allison's condo complex, and they were married three years later. Allison has a law degree and was a criminal defense lawyer for five years. "I really wasn't enjoying my job anymore, and Jake's business had exploded by 2016, so we made the decision to have me take over management full time," she notes. "Each year the business has grown, because of Jake's dedication to the field and his ability to deliver – his work ethic is unmatched. I think what sets us apart (in



Trees by Jake has seven full-time employees, and Jake and Allison, center, pride themselves on never having to lay anyone off during the winter.

the Tulsa area) is our level of customer service, our investment in new and custom-built equipment and the climbing

abilities of Jake and our crew members. They all come together to create a perfect storm."

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Jacob Cox performs a bucket removal.

Trees by Jake has seven full-time employees, and Allison and Jake pride themselves on never having to lay

anyone off during the winter. "A lot of tree services in our area do," Allison explains. She adds that they specialize in

"large and complex tree removals. Safety is our main priority on every job. Clients know that when they hire us, we'll get the job done right."

Jake notes that another thing that sets them apart is the company's pricing structure. "From early on, we were known for our fair pricing," he says. "I would look at what that job meant to me and what my profit would be, rather than what others were charging. And we still consider ourselves reasonable and competitive."

According to Jake, he was a crew leader at his previous job when that company went through the TCIA Accreditation process. "So I was already familiar with it," he says, adding, "I got the vibe that this was a really good thing to go after when I looked at other companies I wanted to model mine after and saw that they were all accredited."

Allison concurs. "I really liked what I saw (about Accreditation) online. I thought we'd established enough of a reputation that this was worth doing."

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So, shortly after they became members in the fall of 2020, Allison dove into the Accreditation process, explaining that, unfortunately, it took much longer than she had wanted due to staffing issues at the time and one major mishap.

"We had a very large setback in the spring of 2021," Jake explains. "In 2020, we invested in a custom-built grapple truck. We had only had it for about six months when one of our CDL drivers tipped the truck on the highway with a full load. Thankfully, Allison was totally on top of the insurance and we got it replaced, but that took a while, too."

"With the custom build, every piece of the grapple truck had to be insured separately," Allison adds. "The accident definitely reiterated for us the importance of being properly insured. To replace our quarter-of-a-million-dollar truck, we only paid the \$1,000 deductible. While it was devastating at the time, we think it speaks to our ability to handle the challenges of running a small business, and we actually ended

up gaining some good insight from the experience."

Allison says when she looked at the initial Accreditation checklist, "a lot of it was basic stuff that was already being done. The biggest challenge was completing the handbook. We spent a lot of time going over procedures and creating policies that our employees would think were fair and that were in full legal compliance. I also streamlined everything and made it all software based. That was another challenge – researching software and then training myself and employees on how to use it. Everything we use to manage the business is software-based, from timesheets, to HR, to safety meetings, to client proposals, etcetera.

"The Accreditation process kind of facilitated our focusing on how we could be more efficient, and we definitely see the benefits from that. We get really good feedback from both employees and clients on the software we use, so we feel good about our investment. Plus, it definitely helps keep things organized, and

it's a major plus that everything is accessible from the field.

"The safety aspect (of Accreditation) was eye opening," she continues. "We've always been very safety oriented, but now we know that everything has to be in writing. I became a CTSP (Certified Treecare Safety Professional) because I was going to be writing the safety policies and handbook. I think the safety aspect also is a big part of employee recruitment and retention, when they see that you care about them and want them to get home safely at night."

As far as their five-year plan goes, Jake says he expects to be well underway with a new PHC program they hope to launch soon. "We've even considered opening a second location in a nearby city or state," he notes. "Seeing how we've grown in the past five years, I can't even imagine how we'll grow over the next five."

Allison adds, "We've seen the benefit of hard work and dedication. We do feel the sky is the limit." ■

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I Can't Find Good Help



Providing training, such as sessions at TCI EXPO, can help create a career path for employees, giving them opportunities to grow. TCIA staff photos by Richard May.

“I can’t find good help” ... “Millennials aren’t coachable” ... “People don’t want to work hard anymore” ... “No one wants to do blue-collar work.”

You hear people say these things all the time. I don’t necessarily believe them, but recruiting good people can be challenging. Let’s not debate these clichés. Let’s look at some ideas to help. Most of the information I share with you is either borrowed or was learned the hard way. The most important thing is to take action. As Neo Anderson says at the end of the movie “The Matrix,” “I didn’t come here to tell you how this is going to end. I came here to tell you how it’s going to begin.”

Honestly, how much time do you spend on recruiting? How much money do you invest? Do you have a budget? Do you have one person in your company who has recruiting written down as one of their deliverables? If you do, great. If you don’t, you should.

You can only fix what you focus on. If you want to be great at recruiting hard-working, good-character people who want a career path and to be a meaningful part of your team, you must put in the effort.

As my former associate, George Barth, would say, the first step in recruiting is retention. Be sure to keep your existing people happy. So many people are looking to recruit someone new while they

take for granted the people they have. We all have made this mistake. Do you take care of your existing people? Does your company have a great work environment? Do your employees love coming to work every day? How do you know? Employee engagement has become a multi-million-dollar business because we all struggle with this. There is a great book called *The Employee Experience*, by Stacy Maylett and Matthew Wride. It goes into great detail about how to create a great place for your people to work in. This is a huge subject. I encourage you to read this book and do some research.

Here are a few key points on retention to consider. I want to thank my old boss and mentor, Adam Cervin, for constantly challenging me to learn and get better at these concepts.

Retention

Pay your people well. Research shows this is not the most important thing, but it’s important. And no matter what the research says, it is the ultimate measuring stick. “Jane at Utopia Tree Care is paying Paul X, and you are only paying me Y. I am going to work for Jane.”

Stay in touch. It is so easy to have people feel like a number. People can get upset over simple things. This is one that always surprises people, when someone you thought was in a good head space quits. You thought they were happy, and they gave their notice. Try to avoid the

BY DAVID M. ANDERSON, CTSP

painful “Oh no!” moment. Have a good relationship with your people so that, hopefully, they will come to you and tell you what’s bothering them before it’s too late. Put times in your calendar to have both formal and informal check-ins.

Offer a career path. Set goals and provide training as soon as you hire someone. Having great employees is the ultimate goal, so it is imperative you invest time and money into making your people better. Decide what is most important to you and set up a program to train for that: CDL, certifications, pruning, client service? Do you have someone on staff who is a good trainer? Put them in charge of goal setting and training. A good trainer can create a multiplier effect. Put it in writing so you can hold people accountable and repeat what you created.

Make it a fun place to work. Every company is different and has its own culture. What can you do to make your company better? We all spend so much time at work, so how can we make it more enjoyable? Research shows that simple things go a long way. Surprise a crew with coffee and snacks on a cold day, Halloween candy, holiday cookies or ice cream on hot days. Have parties or outings; this really helps to get everyone together socially. I realize that during COVID this is hard, but we are social animals. Use your imagination and be creative.

Make sure it’s a safe place to work. You need to have good equipment, good people and a safe environment to work in. The work we do can be dangerous. Make sure you provide PPE and uniforms and tools that are in good working order. Hire good people who will work safely and not be troublemakers. Provide training and career paths. Give them opportunities to grow, get better and make more money.

Get rid of the malcontents. This one is hard to do, especially if they are talented. When you are so desperate to find people, it seems counterintuitive, but fire the people who poison your culture. You know, the ones who constantly complain about everything. Negative people ruin morale and drag good people down. This is very easy to say, not so easy to do. I always think of the scene in the movie “Hoosiers” when Gene Hackman, the basketball coach, plays with four players instead of five because his



Research shows that simple things go a long way. Surprise a crew with coffee and snacks on a cold day, or bring them to TCI EXPO for a team experience to remember.

only sub was not listening. It’s not easy to be that strong, but you should be.

Remember the Golden Rule. Treat others how you want to be treated. If you can’t be objective about how you treat your people, or if you struggle with empathy, hire someone who gets it. Make it their responsibility to make everyone feel good about their work, or at least be heard.

Recruiting

OK, you have a great culture. All your existing people love you so much they want to work with you forever and never ask for a raise. Unfortunately, even those people move or retire or their spouses get transferred – and we all eventually die. You always need fresh blood. Create a recruiting program that works for you.

Advertise in multiple locations. Through trial and error, find out what sites work for you. Write different ads for the same job in multiple places. Monitor which works best.

Have a plan. Have a plan for an open position or to replace someone who is retiring or not performing. Get these people on the bench and vetted before you need them. If you cannot find the right person for that specific role, make a plan to hire and train. It is fine to hire entry-level people of character and train them. Most of our best employees were developed in-house, but you need a plan. It’s amazing to me how many managers at other companies tell me, “We have no bench.” Set goals right away

for your new hires. Have a plan and keep adjusting. What you learn is, you are never “all set.”

Have a referral bonus. Your super-happy, loyal employee can be your best advocate. Make the bonus significant. Do you want to put yourself out there asking a friend or family member to take a chance with their livelihood for \$100? Just like clients who love to refer your company, you need to discover this employee and make it worth their while.

Have an open house at your company. Set a date and advertise well in advance. Have your key people there. Set up demonstrations, provide refreshments and make everyone who shows up feel important.

Use social media. The possibilities are endless with all the different platforms. Choose the one you feel best about. Make sure you commit to updating your posting regularly. With the entire world at our fingertips in seconds, don’t let your information get stale.

Build relationships with professors and teachers. Donate your time and resources to help them. Visit schools and bring your experience to the students. Both the teachers and kids will love that. Be sure to bring some swag.

Post signs in areas where people you want congregate. Restaurants, stores, nurseries, etc. Make sure people know you want them to contact you. Make it easy for people to get in touch with you. Use your cell phone or email.

Share resources with other owners and hiring managers. If you have people you trust, it's a win-win. You can give them ideas or people, and vice versa. Sometimes, you may get a resume that is not a match for you but may be a match for someone else. I'm a big believer in karma; if you do right by others, it comes around.

It's a numbers game. This is just like being a good salesperson. The more recruiting you do, the more resumes you will get, the more applicants you call, the more interviews you have and the better people you will hire. As I like to say, you need to kiss a lot of frogs to find a prince or princess. Pucker up, you have a lot of kissing to do.

Have a sense of urgency. Especially when you have a really good candidate. Running a business, you are thinking about 50 things. They are thinking about getting this job. In our modern world, people are used to instant answers. If you have a good candidate, stay in touch. Woo them by making them feel important. Think of all prospects as perishable food. Get a job offer out as quickly as you can. Close the deal.

Try head hunting. This is a tough one, because I hate it when other companies steal my people. However, this is standard practice, especially at the executive level. I can't say I would never do it; I suggest you pick your spots and don't do it too often. However, people are free to change jobs if they are not happy.

Don't settle. If you think someone is not good when you interview them, they won't be good employees. No matter how desperate you are, be disciplined. It is not fair to your existing staff. This is especially true of the industry re-treads. Just like a bad client who has gone through several companies, you can't and won't fix them. Leopards don't change their spots. "He has so much talent – it will be different here." "I will keep an eye on them." Wrong! They will be a problem, it's just a matter of time.

Conclusion

OK, I realize many of you are thinking to yourselves, "I can't afford this, I don't have time for all of this, I don't have the resources of a big company." Recruiting is hard, and it takes time and resources

away from other things. However, if you want to have a superb company, you need to have plans in writing for retention and recruiting. That means having one of your people responsible for this and spending time on it weekly, if not daily. If you do not have someone with that skillset, hire someone who does. If you have a small company with limited resources, find a company or person to help you part time. You may not be able to do everything, but you need to do something. The more effort you put into this, the better your team will be.

Again, you can only fix what you focus on. Great people are the most important resource for a service business. If you have mediocre people who don't show up or who do a lousy job, having too much work will never be a problem. No successful business owner has ever said to me, "You know what my biggest problem is? I have too many great employees."

David M. Anderson, Certified Treecare Safety Professional (CTSP) and a Massachusetts certified arborist, is a manager with Mayer Tree Service, Inc., a 28-year TCIA member company based in Essex, Massachusetts.



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"Bring Me a Shrubbery ..."

Shrub Pruning – Expand Your Diversity

BY HOWARD GAFFIN



A job might at first appear overwhelming. Try to compartmentalize your goals and take one step at a time. Photos courtesy of Howard Gaffin.



*An example of rejuvenation pruning. This *Euonymus alatus* is too large a plant for the site. Done in early spring, a new crown will form in the coming season.*

"Arboriculture: The cultivation of trees and shrubs especially for ornamental purposes." – Merriam-Webster

"Bring me a shrubbery ... one that looks nice, and not too expensive!" – The Knights Who Say "Ni," "Monty Python and the Holy Grail"

If that shrubbery is to remain looking nice, it's going to need some pruning.

Seventy-five feet of driveway at my boyhood home was flanked by the house and a privet hedge bordering the neighbors. Being a hardy, fast-growing plant, the privet was in frequent need of taming. My dad was of an ilk unafraid to let his only son be furnished tools a

pre-teen could now only dream of. Misguided in the value of labor, I repeatedly contracted my services for what in retrospect was criminally minimal. Thus, I unwittingly began my pruning career.

From hand pruners to hedge shears to electric hedge shears (complete with tattered and taped electrical cord) to an exceptionally hefty chain saw, the hedge endured my pruning research. I was able to get first-hand knowledge of what happens after one of my pruning "treatments."

I went on to work with trees, but continued to have an interest in and offer services for small ornamental trees and shrubs. I have always found it extremely satisfying to transform an overgrown planting back into scale. Almost all of

my tree clientele have shrubs. All the necessary tools were already in the arsenal, and it was great for days when tree work was prohibitive.

Most of the options described for shrub pruning correlate with tree-pruning terminology. Thinning, reducing, heading and rejuvenating are familiar and defined treatments. Of course, it all starts with “right plant, right place.” Try to accord the client’s goals with the reality of the situation. Ideally, the plant should be compatible with the cultural conditions of the site and placed so it can realize its potential. Failure to observe this basic premise often results in plants that are unhealthy, flower poorly (if at all), require extensive maintenance and have no semblance of their true form. If that’s the case, it may be best to remove the plant and replace it, or just let surrounding plants fill the spot.

My privet hedge was a case of the wrong plant in the right place. It offered excellent hardiness and screening, holding onto its foliage well into the fall. It was, however, exuberant on the south-facing site and needed to be kept at a minimal width given the driveway and the



Taxus, before and after reduction pruning. Cuts are made below the perimeter at different lengths, producing a natural form.

neighboring property. The goal, as it often is with shrubs, was retaining their size with minimal maintenance.

Thinning and reduction pruning, in my opinion, are the gold standards. They provide a more natural appearance and the opportunity to constantly rejuvenate the plant by reducing or removing larger, older stems while maintaining a consistent size. Cuts are made below the remaining stems, and are hardly noticeable to the casual observer. The

downside is the labor. Cost limitations may make it untenable for many. Educating the client is the key. You cannot compete with powered hedge shears attached to a landscaper.

Shearing is an option for many plants. It creates a formal appearance, usually in some type of un-natural geometric shape. It is best done during the growing season. The later it is done in the growing season, the longer the tight form will last. For best results, foliage should be sheared to within an inch or so above the previous cuts. This, of course, results in a larger plant each year that will eventually need to be rejuvenated.

Rejuvenating a sheared plant or hedge involves cutting back well below the existing growth to form a plant approximately half the size. Be sure to create a tapered form to allow the lower parts exposure to light. Allow a season or two of growth and then resume shearing. Another option may be cutting the plant to the ground. Many species can be cut back in the early spring and will soon form a new plant.

Thinning a plant is a good option to revive older shrubs. In addition to appearance, the increased light and air flow reduce disease and insect issues. Remove dead, damaged and diseased parts and then approximately one-third of the oldest stems. Invasive species can often be found amidst the subject plants. Resist the temptation to cut these out and instead, remove them by the root. Cutting the stems will only promote new, hardier growth.



Quince: Before and after. Aggressive shoots are removed to the base. The main framework is thinned and reduced as needed.

Slow-growing shrubs (most broad-leaved



Make proper cuts, especially on plants with permanent frameworks. Try to make reduction cuts back to a sizable lateral.

evergreens) tend to develop a more permanent structure and form most of their new growth at the terminals. They will expand slowly and, if it is the right plant for the location, will require little to no pruning. Shearing is sacrilege. Only occasional pruning to reduce an overgrown branch and enhance the shape, or light thinning to open up the plant to air and sunlight, should be performed.

Fast-growing plants are a different animal. They may need to be pruned on a regular basis to keep them from becoming a disheveled mess. Begin by removing dead, diseased and broken branches, along with any stems lying on the ground. Then remove up to one-third of the remaining stems, beginning with the oldest. Remove young, vigorous shoots without laterals growing up and

through the canopy back to the base. At this point, you can shape the plant by reducing overextending branches back to a lateral, below the desired canopy. Try to make the cuts at different levels, and avoid any cuts on the perimeter.

Timing of pruning will depend on flowering and the importance thereof. Plants that flower in spring through early summer should be pruned just after flowering (i.e., *andromeda*, *forsythia*, *lilac*, *mock orange*, *rhododendron*, *spirea*, *viburnum*). Plants that flower in late summer (i.e., *butterfly bush*, *beautyberry*, various *hydrangea*, *Rose of Sharon*) are best pruned in late winter to early spring. Many plants are grown for their foliage, and their flowering is insignificant. These shrubs can be pruned in either time frame.

Additional considerations for timing include client expectations and maintenance costs. A plant pruned early in the growing season will likely look a bit unruly before long and require additional attention. Try to time pruning for later in the season, but refrain from late summer on.

For plants that become too large for the site, some species (i.e., certain cultivars of *hydrangea*, *rhododendron* and *viburnum*) can be pruned to a more tree-like form. Raising the crown, along with reduction and thinning cuts, can extend the life of a plant that can no longer be maintained laterally on the site.

Vines are also in the realm of arboriculture. As with shrubs, timing will be dependent on species and when the plants flower. In general, flower buds that develop on older wood should be pruned immediately after flowering. Those that develop on the current season's growth,

such as many *clematis* varieties, should be pruned in late winter/early spring.

Vines can grow upright in a variety of ways. Boston ivy attaches to surfaces by way of aerial roots, Virginia creeper with suction-like structures. They may be sheared close in early spring, before new growth appears.

Grape vines use tendrils, wisteria a coiling habit, to attach themselves to a support system, without which they would not climb. Pruning these types of vines requires forming a basic framework and pruning back to it to maintain size and health. The framework is formed by pinching back young vines to form several stems to train into the desired direction. The number of stems will vary by site, but three to five should be sufficient.

With vines, try to develop a system and compartmentalize your goals. You may occasionally come upon a situation that appears overwhelming. Begin by removing any dead or diseased stems back to their origins. Then remove any old parts of the framework back to a lateral or to its origin, as they become less productive. Young, vigorous stems growing beyond space limitations should be removed or, if needed, trained to the support system as a replacement for removed stems.

Vines such as wisteria will need to be pruned more than once per season for good results. Over the growing season, shoots growing from the main framework are headed back to two or three leaves. In the early spring, those cut shoots should be removed, leaving one or two buds. Growth from these basal spurs will produce the current year's flowers.

Due to a tendency to overplant or use species too large for the site, foundation plantings are especially in need of conscientious pruning. Try to keep the cuts inconspicuous. Allow at least 2 feet of space from the building to allow for airflow and access. Remove a branch to the base rather than leaving it with sparse foliage.

Shrubs with more permanent frameworks (*Taxus*, *Rhododendron*, *Chamaecyparis* species) are subject to the same considerations as trees when making



Leave plenty of room between the plants and any structures.



Wisteria arbor: Before and after. At right, wisteria arbor from below.

cuts. Heading cuts are made back to laterals no less than one-third the size of the parent branch. Refrain from leaving stubs and respect the branch collar. When making inter-nodal cuts, make them at an angle, just above a bud facing the preferred direction.

A good pair of hand pruners will be your best compadre, but tools of the trade have become more innovative

and specialized. Compact, razor-sharp handsaws with thin blades and pointed tips allow for quality cuts in tight spots. Small, battery-powered chain saws can make a smooth cut in no time. Lightweight, battery-powered hedge shears are more ergonomic and, as a bonus, relieve the user from cord entanglement and risk of electrical shock.

Shrub pruning is not for everyone. A

fusion of art and science, it requires the ability to envision the plant within the plant and make it so. It can be tedious and is far less thrilling than a crane pick, but the fruits of the labor may be quite gratifying.

Howard Gaffin, BCMA, RCA and Massachusetts Certified Arborist, is owner of Gaffin Tree & Landscaping, a 10-year TCIA member company located in Rowley, Massachusetts. ■



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Selecting Cut-Resistant Leg Protection

BY TRAVIS VICKERSON, CTSP, QCL



Figure 1: Travis Vickerson walks his audience through cut-resistant materials at the TCI Magazine Trainer's Test Kitchen. All photos by TCIA staff.

This article is based on a demonstration by Travis Vickerson at the TCI Magazine Trainer's Test Kitchen demo area during TCI EXPO '21 in Indianapolis, Indiana, in November.

Let's take a look at cut-resistant leg protection. I'll talk about the two different types of products available – a tech fiber versus a bulk fiber – and I'll also address the theory that electric saws will cut through chain-saw protection.

But first, I want to refresh everyone's memory on why we wear chain-saw protection, including cut-resistant chaps or pants, in the first place.

A big myth out there is that if you wear chain-saw protection and it gets cut, you can walk away unaffected. Hopefully you can. But wearing chain-saw protection is more like a bandage than a bulletproof shield – you might actually get cut, but you may only receive a few stitches instead of a horrific wound or worse. (Figure 1)

Everyone has femoral arteries as big as your thumb running on the inside of your legs. If you cut your femoral artery with a chain saw, you're going to bleed out in about three-and-a-half to four minutes. If you have an incident, three-and-a-half minutes is going to go by very

quickly, so wearing chain-saw protection will help prevent an incident from being much worse.

And, if you're using the biggest chain saw you have, then yes, it will very likely cut through the layers of protective material in chain-saw-protection fabric. But what will happen is, the material will clog the chain so it slows to the point where damage to your body is minimized.

One of the products used in this demonstration, the Clogger Zero pant (this is not an advertisement or promotion of this brand or pant), is a seven-layer pant. That means it has seven layers of protection between the outmost layer of fabric and your skin.

The outmost layer, or cover, is on top of the protective material. The cover is not cut resistant. All of the protection is built into the fiber weave underneath the cover.

The big message here is that chain-saw protection works just as well with battery-powered saws as with gas-powered saws.

The theory behind it is similar to what happens in the movie "Top Gun." Those jet planes are landing at high speed on the aircraft carrier. They hit the arresting cable and stop. That's what the tech fibers in the chain-saw pants are designed to do. They grab the chisel of the chain and slow and eventually stop the chain. Of course, all of this happens super fast.

If you've ever nicked your chain-saw pants or chaps with a handsaw or briars or such, you may have had one of the fibers poke through the resulting hole. That fiber runs the full length of the pant. If you cut it when you nicked it, you've just shortened that fiber. Like that aircraft carrier in "Top Gun," you need the entire length of wire to slow your plane down. If you shorten that fiber by pulling it out and clipping it off, now you don't have as much distance, and that's going to let the chain go further into the pant.

There are also batting-style chaps, which use a bulk material. The whole theory with batting is that the chain will grab a bunch of fibers at once, which will jam in the sprocket and stop it from turning. Batting-style chain-saw protection is also a seven-layer material.

In demonstrations or tests for cut-



Figure 2: A battery-powered saw being used for the cutting demonstration.

resistant protective materials, you need to replicate soft material, like tissue, muscle and blood, for the chaps to work. Testing and demonstration of chain-saw protection should only be performed

Chaps Care and Feeding

For chain-saw-protective pants to be effective, they must be washed. In particular, with chap-style pants, the inner bulk material needs to be fluffed. When you wash chaps and let them dry, the inner protective material fluffs back up. Note: Be sure to follow manufacturer instructions for washing and drying.

If you use your chaps every day and get them sweaty, oily and dirty, then fold them nice and tightly and stick them in the truck, all that material inside gets matted down and matted down and matted down. Then, instead of having a lot of fluffy material to grab the chain, there is just a matted layer that offers much less protection for stopping the chain from cutting your leg. And maybe they get so dirty and gross that you then stop wearing them, and that is completely the opposite of what needs to happen. Wear them, wash them and wear them. Rinse and repeat.

by individuals who possess the training to do so. Taping the pants to a log or other solid surface, as is done in some backyard tests, is not a true gauge of the potential protection. In my demonstrations, I tape the pants over a towel on a log to simulate actual tissue. I can push down on it, just like pushing into a fleshy leg. What happens when I push on that material and it gives or bends in? The saw can grab more fibers. You want the chain to grab as much material as possible to slow or stop the chain before it hits your skin. (Figure 2)

Also, in demonstrations or testing, I come in from a six-inch drop. That is the testing standard for chain-saw manufacturers, so when I do a demonstration, I am replicating the manufacturer's guidelines for testing. It's a six-inch-drop decelerated stop, meaning I activate the trigger to full rev, let it off and then drop the saw onto the pants.

The actual cuts

In the first test, the tech fiber did exactly what it was supposed to do. It's that cable on the aircraft carrier that catches and stops our plane. The exact same thing happened. If I open up the pants after the cut, we can see that the first layer was cut and just a little bit in the second layer inside was cut. (Figures 3a and 3b) So it



Figures 3a and 3b: The tech fibers stopped the chain on the third layer.



Figure 4: The batting-style fibers are bulky.

worked just like it's supposed to work.

Next, we did the same thing with the batting-style protection – a 6-inch drop falling into it. I did not try to plunge or bury the saw. If I keep pushing, yeah, it's going to keep cutting. But in a real cutting incident, no one will continue to cut their leg. They will instinctively release the trigger, so the demonstrations reflect that scenario.

In Figure 4, you can see the difference in the material. The batting style has wonderful horsehair-like material. It's a very different type of fabric. The batting-style material is going to clog the sprocket and stop the chain from turning. It looks like it cut into three of the seven layers.

As you can see, even battery-powered saws are shut down by chain-saw protective material. We've heard in the industry for a long time that chain-saw pants are not rated for battery-powered saws. That is correct; there is not a rating out there yet on chain-saw protection for electric saws. The tests haven't been done. But the big message here is that chain-saw protection works just as well with battery-powered saws as with gas-powered saws.

Travis Vickerson, CTSP, QCL, is assistant district manager in the Lebanon, New Hampshire, office of Chippers, Inc., now a Davey Tree Care Company, an accredited, 49-year TCIA member company based in Kent, Ohio.

To view a video of this demonstration, go to tcimag.tcia.org and, under the Resources tab, click videos. Or, under the Current Issue tab, click View Digimag, then go to this page and click here.

TCI EXPO '21 in the Books as a Record Breaker



On November 6, 2021, we broke our previous record of registered attendees, and now officially have had the largest TCI EXPO in our history. Photo by Tony Vasquez.

The highlight for each TCIA staff member at TCI EXPO is seeing the smiles and excitement on the faces of the attendees. While putting together the show floor and coordinating the educational opportunities is a lot of work, watching the tree care industry come together makes all of it worthwhile. Since we didn't hold TCI EXPO in 2020, we were on the edge of our seats, so to speak, for 2021 to come around. There were a lot of uncertainties of what the status of the world – and of the industry – would even be.

But on November 6, 2021, we broke our previous record of registered attendees and had officially held the largest TCI EXPO in our history. Check out TCI EXPO 2021 by the numbers:

- Registered attendees – 4,062
- Educational sessions – 39
- Preconference workshops – 5
- Tree demos – 10
- Trade-show exhibitors – 223
- All-Access Passes purchased – 1,963
- Student Career Days attendees – 131
- Hotel rooms booked – 2,669
- Connections made – too many to count

OK, so the last one may not be an exact measurable, but it is because of you that TCI EXPO is the largest trade show and conference in the industry!

Here is what some of the attendees said were their highlights from the show.

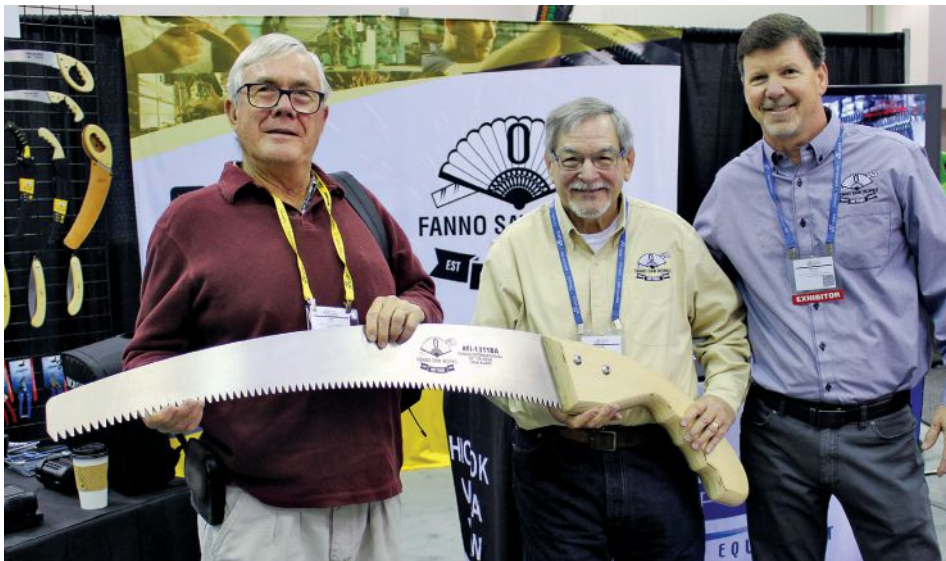
- “I had some really nice conversations with the vendors on the floor. It was nice that they spend considerable time with attendees while answering questions and just talking shop.” – Doug Muth, CTSP, DJM Tree, LLC, Media, Pennsylvania



Jared Putterman, product specialist with Pelican Rope Works/U.S. Rigging Supply, talks rope with attendees. TCIA photos by Richard May, unless otherwise noted.



Petzl's Akimbo and Chicane were in full view for eager attendees to learn about and try out in the Petzl booth.



Dan Christie, from left, founder of Metropolitan Forestry Services, Inc., an accredited, 34-year TCIA member company based in Ballwin, Missouri, with Rob Fanno, former owner of Fanno Saw Works, and Jeffrey Martin, president of Fanno Saw Works/Superior Fruit Equipment. Photo by Don Staruk.

- “The diversity of what is available. There is something for everyone there, and the networking is phenomenal.” – David Vincent, CTSP, Quality Tree Service of West Michigan, White Cloud, Mich.
- “Reconnecting with arborists and vendors to continue building relationships.” – Drew Dunavant, CTSP, QCL, Truetimber Arborists, Inc.,

Richmond, Virginia

- “I was unable to attend in person last minute, so the ability to be a part of it online was awesome.” – Alexandra Stewart, Nick’s Tree Service, Inc., Arrow, Oklahoma
- “The industry as a whole, attending and eager to learn. Having a place annually to showcase gear and equipment is excellent.” - Keith Blakeslee, NW JATC, Washington
- “Getting to see the next step in my career and how to accomplish my goals and (achieve) success around a group of people who love it as

much as I do.” – Bayley Jones, BeaverJack Tree Service, LLC, Natrona Heights, Pa.

- “A concerted effort to make our industry more inclusive as well as promote safe work habits.” – Thomas A. Beyma, Guardian Tree Experts, LLC, Ann Arbor, Mich.

If you attended, thank you for being a part of our 2021 show. Whether you made it to Indy or not, we hope you will join us for TCI EXPO 2022 in Charlotte, North Carolina, November 10-12, 2022. Save the date!



Tchukki Andersen, CTSP, BCMA and TCIA staff arborist, poses with Blake Duval, CTSP, with Aspen Tree Service in Ridgway, Colorado, in front of his TCI Magazine cover shot.



Husqvarna didn't disappoint with its huge selection of chain saws.



***Poison ivy is no laughing matter!
Reps from Zanfel answer questions
about its proven poison-ivy relief.***



***Stihl was proud to sponsor the 131 participants in Student Career Days.
Photos on these two pages by TCIA's Richard May.***

Thank You TCI EXPO 2021 Exhibitors

In a year defined by uncertainty, we want to especially thank our exhibitors for all the effort and resources they put into attending TCI EXPO '21 and making it our *best* show yet. Thank you for trusting TCIA with your business, and for helping us launch the tree care industry into a successful new year!

Also, we ask our readers, if you get a chance, please thank our exhibitors, listed here, for all they do to support the tree care industry.

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Ditch Witch answered all the questions attendees had to ask.



The Women in Tree Care are a force to be reckoned with. This group took part in the Women in Tree Care forum held during TCI EXPO '21 in Indianapolis.

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Minimum of 5 years in the arboricultural field and experience with managing and leading tree crews. Experience managing bargaining-unit employees is preferred. Certified Arborist preferred. If not certified, must commit to obtaining certification within 12 months of employment. Valid California non-commercial Class C driver's license. Class A (CDL) license preferred. Job Series: Facilities Services Manager 1. Job Code: 4361. For complete job description and to apply, www.careercenter.org.



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Charleston Tree Experts is seeking dedicated, reliable, hardworking, honest, trustworthy, intelligent individuals to join our team! Our tree climbers perform pruning and removal services on high-profile commercial and residential properties throughout the Lowcountry. We are looking for experienced team players who are safety conscious, with a strong work ethic and attention to detail. \$12,000 mission bonus is paid out equally across 12 months annually. Bonus is set on a point system whereas (you) the candidate demonstrates the desired behavior and ability the company seeks in ideal candidates. Please inquire in interview. Candidate is expected to complete a job application prior to the interview and schedule a morning appointment accordingly. Humble, hardworking individuals with a desire to be their best need only apply. marshall@charlestontreeexperts.com.



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Experienced Certified Arborist Wanted for Sales-Management Position, Chicago North Shore Territory

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Owner moving, will stay for transition. More than a decade of dedicated service to return clients; client list included in sale. Bucket truck, crane, log loader, dump truck, 2 chippers, 1 stump grinder, various other materials and access to a rented two-acre lot for storage. Staff of 10 (2 certified climbers, admin, labor) willing to stay on during transition. \$0.5 million-gross company. 970-966-7184.

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– Leo Roldan, GTC Leader

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OSHA Extends Comment Deadline on Heat-Injury Ruling

BY LARA DUNKELBERG

On December 2, 2021, the Department of Labor's (DOL) Occupational Safety and Health Administration (OSHA) announced the extension of its comment period for the Advance Notice of Proposed Rulemaking (ANPRM) on Heat Injury and Illness Prevention in Outdoor and Indoor Work Settings to January 26, 2022. This 60-day extension came after a request from the Coalition for Workplace Safety (CWS), a group of trade associations, including TCIA, which cited the length of the initial comment period as insufficient for stakeholders to conduct the "resource-intensive research and data collection" necessary to provide the agency with "comprehensive, accurate and meaningful input."

Background and context

OSHA first published the ANPRM to consider a heat-specific workplace standard on October 27, 2021, stating that a standard specific to heat-related injury and illness prevention "would more clearly set forth employer obligations and the measures necessary to more effectively protect employees from hazardous heat." OSHA further explained

that the purpose of the ANPRM is to seek information, data and examples from interested stakeholders on the following topics:

- Occupational illnesses, injuries and fatalities due to hazardous heat, including their under-reporting and magnitude across geographic regions or among various industries, occupations, job tasks or businesses of various sizes;
- Determinants of hazardous occupational heat exposure and heat-related illness in the workplace;
- Inequalities in exposures and outcomes among workers of color and low-wage earners;
- Structure of work and work arrangements affected by hazardous heat;
- Existing efforts on heat-illness prevention, including by OSHA, states, employers or other industry associations;
- Heat-illness-prevention plans and programs;
- Engineering controls, administrative controls and personal protective equipment;
- Acclimatization;
- Physiologic and exposure monitoring;
- Planning and responding to heat-illness emergencies;
- Worker training and engagement;
- Costs, economic impacts and benefits; and
- Impacts of climate change on hazardous heat exposure for outdoor and indoor work settings.

The ANPRM is one of several of the Biden-Harris administration's and DOL's recent initiatives to protect Americans from hazards associated with extreme heat exposure in both indoor and outdoor worksites. On September 1, 2021, OSHA announced plans to expand their heat-illness-enforcement initiatives through worksite inspections and investigations. Several weeks later, the agency announced its intent to establish a National Emphasis Program on outdoor heat-hazard cases, which will target all work sites under Federal OSHA jurisdiction through outreach, consultation services and training in 2022.

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These efforts will be supported by the formation of a National Advisory Committee on Occupational Safety and Health (NACOSH) Heat Injury and Illness Prevention work group, which will convene to “provide better understanding of challenges and to identify and share best practices to protect workers.”

As part of their Heat Illness Prevention Campaign, OSHA also has prioritized outreach to stakeholder groups representing employers in industries where workers are exposed to heat. In a June 22, 2021, NACOSH meeting, the agency announced plans for additional outreach to TCIA and related organizations.

Expectations for the ANPRM process

If you are interested in providing your own feedback to OSHA, please follow the instructions in the Federal e-Rulemaking Portal.

OSHA will review and analyze all material in the public rulemaking record to determine if and how it should proceed with developing a heat-illness standard following the comment period. Federal OSHA does not currently have a heat- or stress-illness-specific standard; however, the General Duty Clause (GDC) of the Occupational Safety and Health Act of 1970 requires each employer to “furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm.”

At the state level, Minnesota, Washington and California are the only states to have implemented individual OSHA-approved heat-illness standards, with Oregon having adopted an emergency rule in July 2021. Under California law, employers are required to train all employees and supervisors about heat illness as part of their mandated “effective heat-illness-

prevention plan” that also must include providing adequate fresh water, access to shade and paid rest breaks and recovery periods once temperatures reach 80 F. Although it is still unclear whether similar requirements would be adopted at the federal level, California’s standard may prove impactful in the event of the agency pursuing a permanent standard, given that Doug Parker, former head of California’s Division of OSHA (Cal/OSHA), now leads Federal OSHA.

Lara Dunkelberg is a legislative assistant with Ulman Public Policy, TCIA’s Washington, D.C.-based advocacy and lobbying partner.

TCIA will continue to keep its members aware of the latest developments on a potential heat-specific workplace standard. If you would like to have input on TCIA’s comments, or have questions about a potential OSHA standard, please reach out to Aiden O’Brien, TCIA’s advocacy & standards manager, at aobrien@tcia.org by January 7, 2022.



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ACCIDENT

SEND ACCIDENT NEWS TO EDITOR@TCIA.ORG

briefs

All items taken from published reports or reported directly to TCIA staff, as noted.



Type & number of incidents for November 2021

The first item describes an incident that was not reported in TCI Magazine's "Accident Briefs" when it occurred in 2020.

Two injured when rope feeds into chipper

Two tree workers were injured when a climbing or rigging rope was accidentally fed into a chipper during or prior to November 2020 in Easton, Maryland.

A man was in his home when he heard "a horrific grinding noise and screaming." Outside, where a tree crew was cleaning up trees damaged in storms earlier that summer, he saw a woman hunched over in the bucket of an aerial lift, a man wailing hysterically and another man on the ground near the intake chute of a chipper with a rope tangled around him.

The witness, a registered nurse with Army combat medic training, used towels to staunch the bleeding of the man on the ground, stabilized him and, with help from others, moved him away from

the chipper.

A neighbor had called 911, and an ambulance soon arrived.

The woman in the bucket had a serious gash from the rope, but no other details on the condition of the two victims were included in the November 23, 2020, globenewswire.com report.

Man dies after pinned by cut tree

A tree worker was killed November 3, 2021, after becoming pinned under a large tree in Henrico County, Virginia.

Roberto LaMotte, 45, was working for a tree care company attempting to remove a 50-foot-tall tree at a private property when he became trapped under the cut tree. He died at the scene while first responders worked to rescue him from under the tree.

A private crane company was called in to help safely remove the tree and retrieve the victim, according to a

WRIC-TV report.

Tree worker severely hurt in struck-by

A tree worker was struck by a large trunk/limb and seriously injured while cutting a tree November 21, 2021, in Alton, Illinois.

Durondo Phillips was cutting a large trunk or limb when it broke off and hit his left side, including his head, which resulted in scalping, a severe left-eye injury and neck and spinal injuries. He was flown to a St. Louis hospital after the accident, where he underwent multiple surgeries and blood transfusions.

Phillips, who is deaf, has since been released from the hospital and is now recovering at home. He has no brain injuries or paralysis, but still faces multiple surgeries, along with significant physical therapy. It is speculated it may take him a year to recover. A Gofundme page has been set up for the family, according to a riverbender.com report.

Teen injured doing tree work

A teenage boy was severely injured while cutting trees and clearing brush November 29, 2021, in Como, Texas.

Koby Crump, 17, of Como-Pickton, Texas, was taken to Parkland Hospital in Dallas, where he later underwent surgery for a spinal injury.

Crump, a junior at Como-Pickton High School and a volunteer firefighter, suffered extensive damage to his spine, according to a frontporchnewstexas.com report.

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Bartlett buys Kirchner, Buena Vista and Living Tree

Bartlett Tree Experts wound down 2021 with the purchase of three tree companies: Kirchner Tree Service of Ellicott City, Maryland; Buena Vista Arbor Care in Corvallis, Oregon; and Living Tree, LLC, of Glenmoore, Pennsylvania.

Kirchner Tree Service has operated throughout Howard and Baltimore counties for 32 years. The acquisition was completed September 24.

"Growth through acquisition continues to be a strong path forward for us," says Jim Ingram, Bartlett president and COO. "We have enjoyed a relationship with the owner of Kirchner Tree Service for more than 20 years. During that time, our people have developed a mutual respect for each other as arborists, which has helped us provide a seamless transition for all involved."

In October, Bartlett further expanded its East Coast presence through the acquisition of Living Tree, LLC, which has operated in the West Chester, Pa., area for 20 years.

"Living Tree has prided itself on providing mature tree preservation for many years," says John Smithmyer, vice president, division manager, of Bartlett's Mid-Atlantic Division. "The business was a natural fit for us because they had a similar philosophy to ours; doing great tree work with an emphasis on excellent customer service."

Finally, in December, Bartlett expanded its operations in the Pacific Northwest with the acquisition of Buena Vista Arbor Care. Buena Vista has operated in the Mid-Willamette Valley and to the Oregon Coast for 26 years under the ownership of ISA Certified Arborists Vernon and Priscilla Esplin.

"This acquisition allows us to expand our services to customers in the mid-Willamette Valley, a beautiful area with agriculture, vineyards and a rich tradition of forestry and horticulture," says Kevin Carr, district manager of Bartlett's Pacific Northwest Division.

A group of 12 arborists joined Bartlett from Buena Vista, operating out of a new Bartlett office in Corvallis.

SavATree buys three companies in November

SavATree, an accredited, 35-year TCIA member company based in Bedford Hills, New York, ended 2021 with a bang, buying three companies in November: Urban Tree Service of Rochester, New Hampshire, and

Arbor Care of Houston, Texas, both TCIA member companies, and Northwest Tree Specialists of Hillsboro, Oregon, a former TCIA member company.

The purchase of Urban Tree Service, an accredited, 28-year TCIA member

(Continued on page 69)

INDUSTRY NEWS

The CTSP program and workshops are more accessible than ever.



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“Yesterday’s virtual workshop went great! The software was very user friendly, the instructor was well prepared and the material extremely relevant to our work. The tips and techniques that I learned will change how I teach! Initially, I was worried about a virtual format, but after going through the course it was almost like a regular conference. Overall a very informative and great learning experience!”

- Nick Palladino, Lucas Tree Experts

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NEW CORPORATE MEMBERS

The following companies recently joined the Tree Care Industry Association as corporate members. Corporate members provide the equipment, products and services used by tree care companies to do business. If you get the chance, please welcome them aboard.

Independence Constructors Corp.

50 Senn Drive
Chester Springs, PA 19425-9539
Phone: 610-970-9255
Contact: Clay Rhoads
info@indconcorp.com
www.independencetreeservicepa.com
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California-Nevada Joint Apprenticeship Training Committee (JATC)

545 Santa Anita Drive
Woodland, CA 95776
Phone: 541-659-5894
Contact: Daniel Kallai
dkallai@calnevjatc.org
Training line-clearance arborists in California.



Letters & Emails

Rope Runner Pro Notice to Inspect

Regarding the follow-up article you printed in *TCI Magazine* (December 2021, page 75) and posted on the magazine website concerning the Notch Rope Runner Pro, in which you refer to a recall of the product, I would like to clarify there has never been a recall. Notch issued a notice to inspect, which is much different than a recall. I kindly ask you to update your story to reflect this and not cause any confusion in the marketplace.

Karl Wiedemann
president/owner, Brick Media

Karl, I take ownership for that mistake. Clearly the notice is labelled as both a safety notice and inspection notice and says nothing about a recall. We will see that our readers are informed of that.

Peter Gerstenberger, publisher

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TREE CARE INDUSTRY ASSOCIATION | corporate.tcia.org | 800.733.2622

The advertisement features a background of green leaves and a blue sky. On the left, the word "CON" is written vertically in large, white, sans-serif letters. The TCIA logo is centered, with the text "SPONSORSHIPS NOW AVAILABLE" above it and "Supporting the tree care industry is more important than ever!" to its right. Below the logo, a paragraph describes the sponsorship opportunities. At the bottom, the contact information for the Tree Care Industry Association is provided.

(Continued from page 67)

company serving customers in New Hampshire, Maine and Northeastern Massachusetts, broadens SavATree's market in New England.

Ed Hopkins, president of Urban Tree, founded in 1990, and his dedicated team will stay on with SavATree. "We're confident this merger will help our company grow, as well as bolster our employees' value," says Hopkins.

"We are excited to partner with a company that has been named the number-one tree care company in New England for four consecutive years," says Carmine Schiavone, SavATree CEO.

TCIA's Storm Network

The recent, devastating tornado activity across Kentucky, Missouri, Illinois and Arkansas illustrates the importance of outside assistance in helping communities get back to some sort of normalcy as quickly as possible. Local tree care companies play an important part in the restoration efforts, but often they are overwhelmed with the magnitude of the need. That is where companies in Tree Care Industry Association's "Storm Network" step in.

The Storm Network is a list of TCIA members willing to help out other TCIA members in their time of need. TCIA uses information on company personnel and equipment capabilities to compile a database of TCIA member companies available for storm work. Participating companies can search the Storm Network on tcia.org to find each other and develop working relationships to respond when the time arises. There is also an online community that participants can access with helpful resources for doing storm work.

To find out more or to join the Storm Network, go to member.tcia.org/storm-network/.

Please keep in mind, it takes 24 hours once form is completed to gain access

INDUSTRY NEWS

The merger with Arbor Care, a 31-year TCIA member company, broadens SavATree's presence in Texas. Since 1986, Arbor Care has been providing tree care to Southeast Texas. Founder John Dailey and his son, Johnny Dailey, along with the rest of their dedicated team, will stay on with SavATree.

"Merging with SavATree means growth for our employees and endless opportunities for the business," says John Dailey. "Johnny and I feel that this greater support system is something that customers will truly benefit from, directly seeing and feeling the positive effects. This is still very much a family-operated business, just with more extended family members now."

"Arbor Care is the type of family business you would hope to partner with, as they've been offering exceptional tree care services in the area for more than 35 years," says Schiavone.

The purchase of Northwest Tree Specialists broadens SavATree's market in the Greater Portland area. A former 12-year TCIA member company, Northwest has been a family-operated business providing full-service, specialized tree care to residential and commercial properties since 2005. Principals of Northwest Tree Specialists, Trevor and Jeanine March, along with their team of ISA Certified Arborists, field specialists and office personnel, will stay on with SavATree.

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Stovetop Cooking, Job-Site Style

BY SYDNEY HUDZINSKI

Being born and raised in Minnesota, I know how rough winters can get. Growing up, I never imagined I would find a career outside. I love winter, but I did not love it that much. A few years ago, I found my way into the tree care industry, and winter is now my favorite time of year. I get excited because winter in Minnesota means it is time to climb my favorite species of trees, oaks! They have such beautiful structure and are always a perfect amount of challenge.

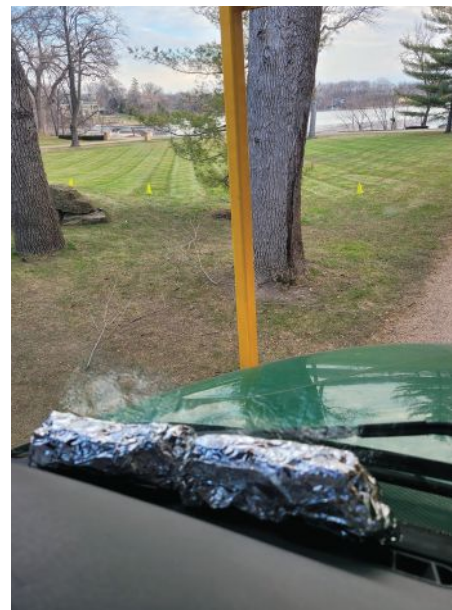
Also, I hate being hot and sweaty.

Another great reason I love winter is because it is stovetop season. No, I do not bring a kitchen set or outdoor burner with me. I utilize the truck I am driving for the day. We leave our trucks running during the winter because it provides a warm sanctuary from the cold. Also, because the trucks are diesels, they just might not start back up on the colder days.

If I put any of a variety of prepared meals on the dash, with the defrost on high, my meals will go from cold to warm by lunchtime. In the summer, it is so hot and muggy that I do not eat a filling lunch. I usually find fruits, veggies and chips to snack on. During the winter months, it is nice to take a break away from the cold for lunch.

On Sundays, I will prepare meals for the week. I have made stews, pastas, soups and even some protein meals that have all been warmed up on the job and tasted just as good as when first prepared!

Breakfast burritos are awesome, as well, if you are tired of the gas-station ones. I make mine with eggs, potatoes, peppers, onions, protein, Cajun seasoning and cheese. Make sure you toast them for a little while before wrapping them in foil or the burritos will get soggy. When it



Lunch heating up on the truck stovetop. Photo courtesy of Sydney Hudzinski.

is a sauce-based dish in a Tupperware container, I like to use the vented lids. That way the steam can get out and they don't get pressurized. I was shocked the first few times I attempted this cooking technique; meals can get seriously hot.

If you are spending the morning on the ground, put your lunch on the truck "stovetop." That way, every couple of hauls of brush you can spin the meal around to heat it up evenly. If you spend the morning in the bucket or climbing, you can ask your co-workers if they will kindly help you out. I find they are more willing if you bring a little extra for them.

It is a helpful way to utilize the tools at hand and help survive winter! I hope this helps someone else who may not find winter enjoyable. It really is the best time of the year, for me at least.

Sydney Hudzinski, ISA Certified Arborist, is a crew leader in the Eden Prairie, Minnesota, office of The Davey Tree Expert Co., an accredited, 49-year TCIA member company based in Kent, Ohio.

TCI will pay \$100 for published "From the Field" articles. Submissions become the property of TCI and are subject to editing for grammar, style and length. Entries must include the name of a company and a contact person. Send to: Tree Care Industry Magazine, 670 N. Commercial Street, Suite 201, Manchester, NH, 03101, or editor@tcia.org.



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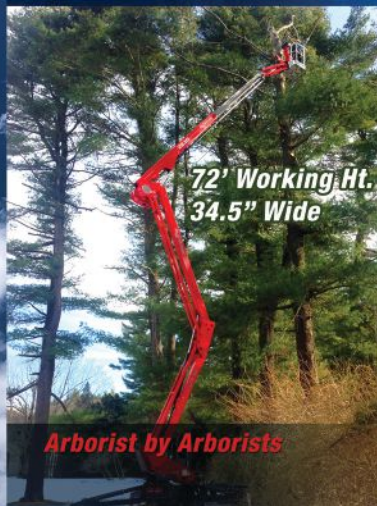
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