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As I entered the airport again and waited through the familiar security process, it suddenly struck me how much of our lives are “routinized.”

We make great pronouncements about how we do this and that in order to improve our efficiency or productivity. Speakers and consultants make lots of money telling us how to systematize this or that to better use our time or to get more out of our employees. Yet look at the faces of people when they are in the middle of experiencing the system. Their faces are expressionless. Their body language is unspired. Their eyes are dim.

I thought about how we get up, go through our routine at home, drive the same way to work, and then go through our office routines. We believe we are saving time and therefore are getting more out of our lives and doing more at work. Then, I wondered, if that’s the case, why do we have to set aside specific time with our staffs in order to come up with the new ideas that launch our businesses to the next level? We call them staff retreats or strategic planning or brainstorming sessions. It’s like, “Stop the work. We’re going to innovate now;” instead of creativity being something that is always part of work.

It occurred to me that in our rush to structure, streamline and enhance efficiency, we have segmented creativity, innovation and new ideas out of our daily lives and into specific times. We push deadlines so hard that we miss the opportunity that surfaces along the way. How often are we actually really engaged with our work? How much more often are we pushing along something that is part of the system? We all have accounting and reports and meetings to deal with, but how much of what we do is really necessary?

Asking ourselves occasionally why we are doing something or why we are asking our staffs to do something can help eliminate extraneous activity we have built into our management systems. Over the years, things accumulate in a business just like they do in our closets at home. We need to clean them out – do an internal review – of how our systems get in the way of our people doing the real work. Of course, key to that is actually asking our people. The coach we use for our management team actually had us ask each other at every meeting what we could stop doing – and then we did it.

Another way a friend of mine experienced breakthroughs of creativity in life came from an “Aha!” born out of unexpected free time. After not having her contract renewed, she had to find a new path. As she took the time to ask herself what she loved in life and had forgotten while she had lived her crazy “routinized” existence, she realized something simple but very powerful. To experience something new in life or business, you’ve got to make space for it. Let that sink in a minute.

If our lives are so full and so “now this” and “then that” and “tomorrow another thing,” there isn’t any space for something new and invigorating to enter. Without time to stop and pause to consider options, there is no space for creativity and innovation. Is that what we’ve done with our staffs?

Perhaps we should stop and think about how we can create some space for innovation and creativity…

Cynthia Mills, CAE, CMC
Publisher

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. The official publication of the non-profit Tree Care Industry Association, 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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Kiah Martin

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ISA Australia Chapter Director
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Bark blown off post oak, *Quercus stellata*. Photos courtesy of Guy Meilleur unless otherwise noted.
The customary serenity and solitude of Andersonville National Cemetery was exploded at 8 a.m. on April 28, 2007, by the sound of chain saws and chippers.

Located at the infamous Civil War prison camp site near the Carter Presidential Museum in southeast Georgia, the Andersonville National Historic Site serves as a memorial to all American prisoners of war. The park provides an understanding of the overall prisoner of war story of the Civil War, interprets the role of prisoner of war camps in history, commemorates the sacrifice of Americans who lost their lives in such camps, and preserves the monuments located within the site. Park superintendent Fred Boyles understands that many trees at Andersonville are monuments in their own right.

Much of the 520 acres is covered with row after unbroken row of gravestones, and more will be added until the cemetery is full to the fences. The scattered trees stand sentinel, shading and softening the soldiers’ final resting ground. Several are antebellum “witness trees,” also veterans of the Civil War. Coordinated by urban forester Eric Gansauer and the Georgia Arborists Association, arborists with TCIA member companies Arborguard Tree Specialists and Downey Trees joined dozens of others to care for these veteran trees that watch over the graves of fallen veterans. This article is about one tree in particular that serves to remind us of something near and dear to arborists’ hearts – the importance of tree preservation. Following is a report on that tree, No. 263:

**Background**

Lightning struck a post oak *Quercus stellata*, tree No. 263, located at the graveyard’s edge in 2002. Two other large oaks to the north, No. 219 and No. 220, were not struck. A tree inventory flagged these trees for a more thorough inspection.

**Assignment**

I agreed to inspect three veteran oaks and offer opinions on their condition and prognoses. The use and purpose of this report was to inform decisions made by park staff regarding the management of these trees.

**Observations**

I noted four separate streaks of wood down the stem of tree No. 263, at approximately right angles to each other. The widest wound ran from the base up to the first primary fork on the northwest side and back down the other side. A small crack started at that fork, and there was active decay in a pocket above the crack, just below the fork. A large, fat skink was living under the detached bark.

There is ongoing excavation for grave sites in the southern half of this tree’s root zone. The foliage was pale and yellowish. There was erosion and compacted soil to the north, and significant damage to buttress roots all around.

Tree No. 219, another post oak, had a large wound where its main stem was torn off, leaving three horizontal limbs. The trunk sounded hollow, but there was little dead wood in the crown.

Tree No. 220 is a southern red oak, *Quercus falcata*. It had a dead top, and two recently broken limbs to the west. These were removed during the aerial inspection.

**Testing & analysis**

I used a hammer to test the trunk of tree No. 263 for resonance at 4½ feet above the ground. Fifty-two inches of bark circumference sounded hollow. The bark came off easily because it was dead. One hundred and five inches of the circumference sounded alive. Unidentified wood-boring insects were active underneath the loose bark — but not in the exposed areas where the wood was dry. The wound above the primary fork was more than 20 inches wide. A probe went 6 inches through mushy tissue at the fork.

The trunks of trees No. 219 and No. 220 were solid on the outside, and had significant woundwood around their old wounds.

**Discussion**

With one-third of the bark blown off the trunk, and a 20-inch-wide wound above the first fork, this lightning damage seemed terminal. This fork seemed at risk to fail in a moderate summer storm, but it could be cabled to buy some years. However, it is only a matter of time before cracking and decay render the lower trunk unstable. Poor root health and more excavation for graves mean this time will come fairly soon, despite the wood’s resistance to...
decay. The skink’s plump belly is evidence of insect activity in the damaged areas.

Tree No. 219 and No. 220 were structurally intact and removed from areas the public is likely to visit.

Conclusions
Tree No. 263 posed a high risk in the near to medium term. The long-term risk can only be abated by removal. Trees No. 219 and No. 220 posed a low risk until their roots are excavated.

Superintendent Boyles made the tough decision to remove tree No. 263. He also made a much easier decision – to apply for funding to protect the remaining landmark trees from future lightning strikes.

Lightning protection systems
According to government data, the region receives on average more than 10 lightning strikes per square mile. A lightning protection system will effectively and affordably protect a tree 98 percent of the time. The average time for installation is two hours for a two-person crew.

The climber ascends the tree to its highest point while the other worker excavates a trench at least 8 inches deep and 10 feet from the trunk. An air tool can save time and spare roots during this process. Once the climber ties in, the fasteners and one end of the copper cable (conductor) are tied on and hoisted. The conductor is fastened to a terminal at the top of the tree, then pulled taut, not tight as the climber descends and clamps it to standoffs to prevent contact with the tree. These standoffs can be up to 6 feet apart, depending on the tree’s form. A straight line is preferred for maximum effectiveness, leaving the stem between buttress roots toward the path chosen for the ground terminal.

The ground rod is copper-coated and typically 8 feet long. It must be driven a foot below the surface to protect people and animals above it. Tree roots are not so lucky – observations indicate a 15 inch “kill zone” near the ground. Driving the...
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rod into the ground can be done with a hammer in sandy soil, but a post driver or air hammer is needed for harder subsoils. To test the system’s effectiveness, use a ground resistance tester and a continuity meter. A reading of under 50 ohms is preferred. Additional ground rods can be installed 10 feet apart to provide adequate grounding. One way to be sure that your system works is to attach strike monitoring fuses and check them after storms.

Aftercare
As noted in the ANSI A-300 Part 4, the client must be notified that the system should be checked regularly. Fast-growing trees present a special challenge, because the system must be attached to new standoffs to avoid contact between the conductor and the tree. When it gets close, the old standoffs must be cut off and replaced, and the conductor clamped to the new standoff. This presents two problems. First, the bits of metal left in the tree can potentially cause arcing, as they draw the electricity from the lightning strike to the tree. It is unclear how much potential there is for this to happen. Second, installing new fasteners means making new wounds, which is never a good thing.

To address these problems, an extendable fastener known as the Arborbolt was developed by Ben Fuest in England. Ninety percent of the trees there with lightning protection installed are redwoods, *Sequoiadendron giganteum*. This species’ relatively fast growth and large mature size mean the fasteners would need replacing several times over the trees’ life spans. Its thick bark calls for a long shank like the Arborbolt’s on the standoff to reach the wood, as called for in the standard. Pre-drilling is required, which decreases the risk of cracking the wood but increases the time needed. On many trees these advantages may not be worth the added cost, but for redwoods and some other species the Arborbolt was designed with their needs in mind. There is no U.S. distributor at present.
Selling points

No matter how it’s fastened, a lightning protection system adds a lot of value to a specimen tree. Selling is as easy as comparing its cost to the value of the tree and the expense of removal and replacement. The target rating for the risk of a lightning strike to most residential trees is very high, considering that roots contact wires that contact all the electronic equipment in the modern home. Signature golf course trees are leading candidates. Not only do they define the fairways and create doglegs, golfers seeking to finish one more hole before the rain hits may seek shelter under a tree, only to be killed by a lightning strike that is drawn to that same tree.

Tall trees that are in the open and on high ground are most susceptible. Trees in other recreational areas are prime candidate sales, as well as those near commercial buildings and parking lots. Some lists have been made ranking species susceptibility, based on water content and oil content and other characteristics, but these lists have not been proven reliable.

More land is being developed around...
large trees, and more trees near targets everywhere are growing taller, and our climate is heating up, so the lightning protection market is growing rapidly. Adding a system can fit in well with the tree care services a company offers, and put off the day that a veteran tree must be laid to rest.

Guy Meilleur is the owner of Better Tree Care Associates in Apex, N.C.

Lightning-Struck Tree Assessment and Mitigation

When lightning strikes a tree, the owner will often assign an arborist to help determine the appropriate response. Depending on the tree and the arborist, what they hear will range from, “It’s going to die, so we should remove it,” to “It looks okay for now, let’s wait and see.” Neither of these answers adequately addresses the owner’s or the tree’s needs. Both neglect useful tree care techniques for assessing and mitigating lightning damage:

- Bark inspection. Tap the bark with a mallet to determine whether it is detached from the wood. Measure the detached areas. Probe any cracks in the xylem with a thin instrument to determine the depth. If the damage to the lower trunk is not extensive, inspect the crown.
- Consider the species’ relative tolerance to lightning strikes, based on its compartmentalization qualities, grain pattern, and genetic vigor.
- Consider the individual specimen’s vitality, and its location relative to people and property. Assess the risk.
- Present treatment options to the owner, providing a prognosis of recovery if the treatments move forward. If the client is an insurance company, the arborist is often asked to make a recommendation because the tree work is part of a claim. If the owner decides the risk is acceptable, these steps can be taken:
  - Reattach the bark if it is still moist inside. Thin bark may move enough if it is wrapped tightly for a few weeks. Thicker bark may be reattached with fasteners such as staples.
  - If the bark cannot be reattached, it should be trimmed – “traced” – back to the point where it is attached to the xylem, so there will be no hollow area as callus tissue grows over the wound. This applies to all the bark, from the top of the tree down to the buttress roots.
  - The exposed wood should be treated to repel insects. Reapply as needed.
  - The soil around the roots, especially those that carried the current, should be aerated as needed and inoculated with beneficial microorganisms such as mycorrhizal fungi. Any mineral element that is lacking should also be applied.
  - Mulch the root system 2- to 4 inches deep with organic material, and irrigate as needed.
Events & Seminars

June 5-7, 2007
National Oak Wilt Symposium - Texas Chapter ISA
Austin Hilton,
Austin, Texas
Contact: Mike Walterscheidt, (512) 587-7515, mbwalter@totalaccess.net; www.trees-isa.org/events; www.isatexas.com

June 9, 2007
NJISA State Tree Climbing Championships,
Thompson Park, Lincroft, Monmouth County, NJ
Contact: www.NJArboristsISA.com

June 9-12, 2007
Trees Florida 2007
Innisbrook Resort, Palm Harbor, FL
Contact: floridaisa.org

July 11, 2007
New Jersey Certified Tree Expert Examination
Contact: NJ Board of Certified Tree Experts, 370 East Veterans Highway, Jackson, NJ 08527

July 15-17, 2007
Green Industry Legislative Conference
Sponsored by TCIA and PLANET
Washington, D.C.
Contact: TCIA (603) 314-5380; www.tcia.org

June 20, 2007
ISA Certified Arborist Examination
South Plainfield, NJ
Contact: www.NJArboristsISA.com, (609) 625-6021.

July 21-24, 2007
BOMA North American Real Estate Congress & The Office Bldg Show (Bldg Owners & Mgrs Assn)
New York, NY
Contact: www.boma.org

July 28-August 1, 2007
Certified Treecare Safety Professional (CTSP) workshop & certification exam
San Jose, CA
Contact 1-888-isatree; www.isa-arbor.com/conference

September 19-20, 2007
Certified Treecare Safety Professional (CTSP) workshop and certification exam
Baltimore, MD
Contact 1-800-733-2622, or www.TCIA.org

October 10-12, 2007
Texas Tree Conference
Waco Convention Center,
Waco Texas
Contact: www.isatexas.com

October 16-17, 2007
Landscape Ontario Garden Expo
Toronto Congress Centre,
Toronto, Canada
www.gardenexpo.ca

October 26-28, 2007
The NJ Shade Tree Federation 82nd Annual Meeting
Crowne Plaza,
Cherry Hill, NJ
Contact: Bill Porter (732) 246-3210; njshadetreefederation@worldnet.att.net

November 6-7, 2007
Certified Treecare Safety Professional (CTSP) workshop and certification exam
Hartford, CT
Contact 1-800-733-2622, or www.TCIA.org

November 8-10, 2007
TCI EXPO 2007
Connecticut Convention Center,
Hartford, CT
Contact: Deb Cyr 1-800-733-2622; cyr@treecareindustry.org; www.tcia.org

January 8-10, 2008
Landscape Ontario Congress 2008
Toronto Congress Centre, Toronto, Canada
www.locongress.com

February 8-12, 2008
U.S. Composting Council Annual Conf. & Trade Show
Oakland Marriott City Center,
Oakland, CA
Contact: www.compostingcouncil.org; (631) 737-4931

February 10-14, 2008
Winter Management Conference
Tree Care Industry Association
Westin Aruba Resort, Aruba
Contact: Deb Cyr 1-800-733-2622; cyr@tcia.org; www.tcia.org

Send your event information to:
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Celebrating 50 years at Morbark

Year-long events are planned as Morbark, Inc. celebrates 50 years of manufacturing industrial equipment systems.

From a humble beginning in 1957 in a small blacksmith shop, Morbark has grown to become the respected company it is in 2007. Norval Morey’s life in manufacturing began in 1957, when the veteran logger, sawmill owner and entrepreneur perfected and introduced the first portable pulpwod debarker.

Over the next five decades, the company grew, and the industry leading innovations flowed. With strong footing in the sawmill industry, Morbark expanded by introducing the first portable whole tree chipper, in the early ‘70s. This was followed shortly by the introduction of the first disc-style brush chippers in the ‘80s.

The ’90s proved to be even more groundbreaking for the company. Founder Norval Morey personally invented and patented a drum-style chipper that has revolutionized the industry, and with the creation of the combination Flail Chiparvestor in 1991, and the development of the first industrial tub grinders and horizontal grinders, there was no doubt that Morbark would continue to grow. Today the innovations and improvements continue with the recent introduction of a line of stump grinders.

The manufacturing facility has expanded from a small shop where it all began 50 years ago to a 1.5 million square foot plant. To all its many customers, Morbark says “thanks for being a part of the family and for 50 years of loyalty.”

John Deere EPA Ready

John Deere Power Systems recently announced that many of its engines under 75 kW (100 hp) are now U.S. Environmental Protection Agency (EPA) Tier 3, Interim Tier 4 and European Union (EU) Stage III A ready. Four ratings of the PowerTech M 2.4L engine are planned for EPA Interim Tier 4. These engines will also meet current EU Stage III A standards, which took effect January 2007. The PowerTech M 2.4L engines are either naturally aspirated or turbocharged.

“We have narrowed down the technologies we are exploring for Tier 4, but have not yet settled on the solution that will be right for our customers and us,” said Gita Rao. “For Tier 4, we are planning to continue with the multiple-platform option. We’re trying to include many potential solutions for Tier 4. The goal is to determine which concepts work best together in order to provide a solution that meets the needs of each given application.”

Fecon personnel changes

Fecon announced this spring that Ted Christian will serve as national sales manager for the company. Christian comes to Fecon with 17 years of management experience from an equipment dealership where he held positions of sales manager and general manager.

Fecon also announced that Mark Ferguson will serve as their Southwest regional sales manager and market specialist in mulcher applications for wildfire prevention and management. His experience in sales, management and heavy equipment is complemented with certification as a compost facility manager by the U.S. Composting Council.

Fecon, Inc. manufactures Bull Hog mulching attachments, FTX track carriers, tree shears, grapples and stump grinders.
Introducing PureSpray GREEN, from Petro-Canada — the world’s largest producer of Pharmaceutical grade mineral oil. It’s an effective spray oil that’s the purest and safest pesticide around. Designed to make everyone happy. Except pests. And so safe it’s listed for use in organic food production. It’s a pesticide formulated with the same high quality, ultra pure oil that you find in food products and even baby oil. So it’s less toxic than many household cleaners like powdered laundry detergent and window cleaner. But not less effective. Because of its higher temperature range, you can use PureSpray GREEN throughout the entire growing season (up to 95°F). This means you can kill pests right through the summer and fall, minimizing risk of leaf burn (phytotoxicity). And best of all, PureSpray GREEN is proven to kill pests as well as, or better than, many leading synthetic chemical shrub and lawn pesticides. So make the switch, your customers will thank you. The pests won’t. See the proof for yourself. Call for test data and the name of your local distributor. 1-800-299-4996. (Distributor opportunities available.)

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Rhizofuel Now With Additional Species

Rhizofuel from Rootgrow is now available with additional species of mycorrhizae – Glomus fasciculatum. Rhizofuel is a reasonably priced, all-in-one bio-stimulant, beneficial bacteria, fungi and mycorrhizal package used to amend poor soils with beneficial organisms found on the forest. The living ingredients have been tested for millions of years and include 19 species of rhizo bacteria, two species of trichoderma fungi, and 11 species of both endo- and ecto-mycorrhizae. The fuel component contains soluble humic acid and sea kelp, vitamin C, Vitamin B1 and glycine. For more info, call, 1-866-ROOT-GRO (766-8476) or visit www.rootgrow.com.

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New John Bean spray tank

Spraying is an integral part of tree and landscape care. Unfortunately, these spraying procedures often come with a high price for pesticides and equipment. With that in mind, John Bean Sprayers has targeted one piece of the equipment cost puzzle by developing a new polyethylene sprayer series tank that combines both value and quality. The company’s new polyethylene sprayer tank offers a value-oriented option that still provides dependability and quality. It allows John Bean to compete at different price point levels – but without compromising the product lifespan or reliability. The polyethylene tank is compatible with any of John Bean’s DM model hydraulic sprayers. It works with a Bertolini diaphragm pump or an FMC/Bean pump. It’s available in yellow or black. Contact John Bean Sprayers at 1-800-241-2308 or www.johnbeansprayers.com.

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Cyber-Rain Smart Sprinkler Controller

According to a study conducted by the American Water Works Association Research Foundation, 58 percent of water usage is used outdoors, and the Environmental Protection Agency states that more than 40 U.S. states now have some type of water conservation program. Every day millions of gallons of precious fresh water are wasted because outdated sprinkler timers run the same schedule, summer or winter, rain or shine. Designed to conserve water and provide year-round savings, the Cyber-Rain XCI is the most effective solution for cities and communities with severe water shortages. It combines the power of the PC, the Internet and the latest wireless technology to automatically manage a watering schedule based on weather conditions to save water and money. Some of the benefits of the system include: PC-based software; daily weather checks; cycle and soak feature; watering index; sod and seed and fertilizing features; water usage tracking; wireless compatibility; and unlimited zone additions. Contact Cyber-Rain, a division of Showcase Innovations Inc., via www.cyber-rain.com.

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New Eye Protection

SoundVision safety glasses by FullPro offer a clear advantage over ordinary safety glasses that break earmuffs seals, causing pressure points against the skull and reducing protection. SoundVision eliminates the pinching and improves protection by 3 to 7 decibels by attaching to the outer surface of earmuffs with flexible Velcro-like straps. The result is full and comfortable protection of both eyes and ears, and increased use and compliance. It meets or exceeds ANSI’s Z87.1+ high-impact safety rating and is compatible with most popular brands of earmuffs and headsets. It is available in clear, amber and smoke tints. Visit FullPro via at www.fullpro.com for a list of retail stores where they can be found.

EAB Help From Mauget

According to university and USDA testing, Mauget’s Imicide and Inject-a-cide B, two micro-infusion insecticide applications developed by the J.J. Mauget Co., have been found to be highly effective in the control and eradication of emerald ash borer. Recent Michigan State University tests, conducted by university staff and associates from the USDA, confirmed that Mauget’s Imicide and Inject-a-cide B were effective for the control of emerald ash borer on trees in south-central Michigan. Success points to Mauget’s micro-infusion application of imidacloprid and Bidrin, the products’ active ingredients. Specific results of the test showed that Inject-a-cide B was highly effective for adult emerald ash borer control for more than four weeks after the initial infusion, killing 100 percent of the beetles that consumed foliage from the treated trees. Both Mauget products were found to provide greater larvae control, and were shown to be the most persistent in controlling emerald ash borer adults and larvae over the two-year test period. Contact Mauget at 1-800-TREES RX (873-3779), or via www.mauget.com.

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Running your tree care business requires working in a very dangerous environment. No, not the physical danger that you’re well aware of – a different, more subtle kind of danger: The hidden stress in the life of every business owner, stress that can accumulate to the point of serious damage in both your business and personal life.

How common are stress-related problems? “Up to 80 percent of visits to primary care physicians are for symptoms directly or indirectly related to the stress response,” says Vicki Rackner, MD, co-author of Chicken Soup for the Soul. “While it’s true that we live in a stress-filled world, you can control your response to stressful stimuli. Manage your response to stress more effectively and you will have a happy, healthy heart. You will also have a healthier bottom line.”

How do you know if the pressure cooker is having a harmful effect on you? “Some of the danger signals for stressed out entrepreneurs are weight gain, mental confusion, depression, suppressed immune function, and constant fatigue and insomnia,” says nutritional biochemist Shawn M. Talbott, Ph.D. Getting stress under control can help in each of these areas.

Here are seven tips that will help you to avoid the severe and often permanent harm to you and those around you that can result from uncontrolled business stress:

Analyze and organize those competing demands on your time

Among the major causes of entrepreneurial stress are incompatible demands on the owner’s time and resources, according to management consultant and author Jim Stroup. “If you don’t have the time or expertise to do a given task, you outsource it. However, if you don’t have the resources for outsourcing, you wind up doing it yourself. That often means doing it poorly, further straining your resources.”

What to do about this? “First, organize and prioritize the bewildering flurry of competing demands on your time,” says Stroup. Be sure to include key functions such as cash flow, marketing and employee productivity.

“Next, analyze these tasks on the basis of their impact on your time and resources. Which ones have the biggest impact on the success of your business, and which ones can be successfully delegated?”

This simple procedure often helps an owner to a better understanding of the business, according to Stroup. In turn, that reduces the stress resulting from a failure to understand how to assess and organize competing demands.

Know when it’s time to go home

“Learn how to turn off work and boot up life,” says consultant Jennifer Kalita, The Kalita Group. “Entrepreneurs often start businesses to get out from under an unreasonable boss, but now the only unreasonable bosses they’re working for are themselves. Make a commitment to business hours and stick to it. If you don’t, the line between your business and your personal life will become blurred. When that happens, it isn’t the business that will suffer; it’s you, your family and friends – all the things you need to keep your life in balance.”

Dr. Rackner agrees on the importance of turning off work. “The stress-induced fight-or-flight response served our species well when we faced saber-toothed tigers,” she says. “In business it often feels like a pack of tigers are right outside the door. Adrenalin and other stress hormones help...
you run away from danger or face challenges square on.”

According to Dr. Rackner, stress-induced adrenalin becomes problematic when we use it as fuel for day-to-day activities. “Our bodies are designed for surges of adrenalin, not the day-in, day-out, sustained-release stress program followed by so many of today’s entrepreneurs. That impairs not only the body’s ability to function; it also impairs business productivity and profitability.”

You know that you need a vacation, but ...

You know how important it is to take some time for yourself and your family. You’ve been working hard and now you need to refresh and renew. However, if you’re like most business owners, the idea of walking away from your business for even a day or two causes so much anxiety that it’s hardly worth it.

“Take heart.” says Liz Bywater, Ph.D., president of Bywater Consulting Group, LLC. “Vacation need not be an all-or-nothing approach to relaxation. There’s no need to divorce yourself entirely from your business in order to recharge your batteries.”

Dr. Bywater suggests dedicating a small portion of each vacation day – even a few minutes – to checking. "You can call your assistant, partner or second-in-command to see whether there are any fires to be put out,” she says. “If there are, you can decide who will deal with the problem and how. In most circumstances, you can delegate the work and continue to enjoy your day with confidence. If you absolutely must speak briefly to an employee or customer, so be it. Hey, one phone call could pay for your whole vacation.

“Once your daily check-in is finished, you can put away your cell phone, laptop, and PDA for the day and have some fun.”

Lean on your friends

“Business owners, working in a constantly-changing and often uncertain environment, must deal with a host of stresses,” says Jeanne Hurlbert, Ph.D, professor of sociology at Louisiana State University. “Although many fail to realize it, one of their most valuable resources in coping with that stress is their social networks.”

Manage your response to stress more effectively and you will have a happy, healthy heart. You will also have a healthier bottom line.

According to Dr. Hurlbert, entrepreneurs generally think of “networking” as building the business contacts that help them build the business, improve productivity, or locate competent employees. “While it’s important that entrepreneurs’ social networks provide those resources, it’s at least as important that their networks provide the social support that can help them reduce stress and cope with stress that they cannot eliminate.”

Hurlbert feels that business owners should recognize that the contacts who provide that kind of support generally aren’t the same individuals who provide referrals and sales leads. “Our close friends and family provide the support that helps us cope with a business downturn or other negative event,” she says.

One of the most effective things entrepreneurs can do to combat stress is to build a balanced network that supports not only their business but also their personal lives, according to Hurlbert. “They also need to remember that even close ties dwindle if they’re not maintained. That’s why they need to devote time and energy to the personal side of their networks, just as they do for the business side.”

Enlist outside help

“It’s not unusual for small business owners to feel they have to do everything themselves,” says Dr. Bywater. “Sometimes it’s about keeping as much money as possible in the business and minimizing expenses. Sometimes it’s about quality control. Small business owners may think that if you want the job done right, you have to do it yourself, but that’s not so. True, there are many aspects of a small business that are best handled by the owner, but there’s also plenty of room in most businesses for effective outsourcing.”

In order to focus on what you do best, you have to take some things off your plate, according to Dr. Bywater. “That may mean hiring a marketing or PR firm, or a reliable Web designer, or a top-notch bookkeeper. The key is to farm out the kinds of work that take up lots of your time but don’t fall
within your areas of expertise. Do what you do best. Have others do the rest.”

Make sure that you and your significant other are on the same page

“If your home life isn’t running smoothly, you’re headed for stressville,” says Steve Kaplan, author of, Be the Elephant: Build a Bigger, Better Business. “Do everything you can to help your spouse understand your business life. He or she can be a big help or a serious barrier to keeping a lid on your stress level.”

Kaplan feels that finding ways to involve your family is an important weapon in the fight to control business stress. “The last thing most of us want to do after a hard day is go home and rehash everything,” he says. “Still, you need to remember that the person who hasn’t been with you during your workday needs to feel connected.”

Involving family members in your life lets them know that you value their thoughts and it helps them to be more understanding during those missed dinners and birthday parties. That, in turn, will help you to keep stress under control, says Kaplan.

Reduce your own importance in the business

“You’ve heard it said many times — if you want something done right, do it yourself. It’s a classic philosophy with an undeniable grain of poetic truth. However, when it comes to running a small business, too many owners suffer from a dangerous overdose of do-it-yourself-itis.

“Every small business owner has three basic responsibilities,” says Andy Birol, founder Birol Growth Consultants. “They are owner, president and chief sales person. No owner can do everything effectively in all three of these areas.”

According to Birol, small business owners tend to be “control freaks.”

“It’s difficult for many entrepreneurs to trust business responsibilities to others,” he says. “However, it’s critically important to develop the ability to delegate some of your work to those around you. The penalty for a failure to do that is an almost certain buildup of the kind of business stress that will eventually impose a harsh penalty on both the business and the business owner.”

Every expert interviewed for this article ranked the failure to delegate as a major cause of harmful stress. While it may seem difficult, reducing your own importance is a major step toward easing the pressure of running your business.

Of course, these seven suggestions aren’t the only techniques for minimizing the constant strains in your business life, but together they can go a long way toward reducing your exposure to the damage of uncontrolled stress.

William J. Lynott is a freelance writer living in Abington, Pennsylvania. His latest book, Money: How to Make the Most of What You’ve Got, is available in bookstores and online.
### Vermeer

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### Brush Bandit

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<td>Double Edge 7-1/4&quot; x 4-1/2&quot; x 1/2&quot;</td>
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### Asplundh

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<td>Single Edge 16&quot; x 3&quot; x 3/8&quot;</td>
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Expounding on tree liability

Thank you, and the authors, Peter S. Beering and Judson R. Scott, for the excellent article “Premises Liability and Your Trees” in your May 2007 issue. It is very well done and hits the important aspects of proper tree management and liabilities that management firms as well professional tree people need to know about.

There are two aspects that I would like to expand upon.

The article mentioned that healthy-looking trees may be hazardous. It is very important to recognize that tree health and the structural stability of a tree are two separate issues. We all know that a healthy-looking tree, one that is full of healthy-looking foliage, can be an accident waiting to happen if the root system or the trunk is compromised structurally, but we need to communicate that to our clients, whether they be property managers or homeowners. It would not suprise me if some of the hazardous trees in the photos in the article had lots of foliage on them. We also need to let them know that healthy trees do fail in severe weather events.

The second aspect is that the article pointed out that tree inspections varied depending on the jurisdiction. The article did not discuss “drive-by” or “windshield” inspections that are common for municipalities and road commissions and are the subject in numerous lawsuits.

There is a case (Holts v City of Omaha, 2002) that will be in the new edition of my book, Tree Law Cases in the USA, out later this year, in which the court ruled that drive-by inspections are an acceptable method for viewing non-hazardous trees if the inspectors make a more detailed investigation upon finding symptoms of decay.

Again, thanks to TCI magazine for keeping us informed.

Lew Bloch
Registered Consulting Arborist
Potomac, MD.

On public misconceptions

David Shwartz, in his “Battle of the Beech” article, in the April 2007 TCI magazine, has discovered what many of us already know. The MSM (main stream media) carries its flavor-of-the-month club, politically corrupt mindset to the realm of arboriculture, imposing on innocent people their bony fingered unjust judgments, calculated to tickle the ears of the greeners, enviro wackos and general yahoos of their readership. Matters not that they are ignorant and/or misinformed, or if they communicate inaccurate info, as long as the end – to sell their product – is met.

I have dealt with people in a very abrupt and even rude manner who have attempted to impose their judgments on me for removing structurally unsound trees that pose an extreme hazard to life and property. To these rebels without a cause, who refuse to be confused with the facts, any tree is a salvageable tree – even a dead one. If you detect anger in my words, you have ascertained my true feelings, and my last word on this subject is that such persons deserve what they get, specifically from a tree that, in it’s unsound structural state, they would defend as long as there was breath in their bodies. Nuff said.

Edward Kennedy
Owner/operator Meadow Green Tree Experts,
Ontario, Canada
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Bandit began manufacturing tracked chippers after a good customer asked for a self-propelled, hand-fed unit for a specialty application—maintaining downhill ski runs. The idea caught on and is now a growing market for the company.

By Rick Howland

Just as the role of the tree care professional is being re-defined by market changes, so too is the role of the chipper. Not so long ago, the chipper’s job was to reduce waste, which could be then composted or dumped.

Now, as the demand for more vertically integrated land care affects the arborist (everything from clearing to maintenance to improvement), we’re finding chipper uses have grown and changed along with our needs.

There are chipper models that can navigate on their own through very tough and sloppy terrain, models that are or will soon feature the ability to create special purpose chips for fuel or for decorative landscape mulch, and, of course, units that are safer to handle as crew members turn over.

Jerry Morey, president of Bandit Industries, explains that the need for specialized functions led his company to develop a track-type unit.

“Several years ago, a good customer asked us to self-propel a hand-fed chipper for a specialty application—maintaining downhill ski runs. He was having a difficult time hauling equipment uphill, so we self-propelled one of our chippers to drive up and down the slope. A few other people saw it and wanted one for lot clearing, since it is so tough to drag brush out or to drag a chipper into a densely grown area. A local dealer started stocking and selling a few.”

Morey says Bandit hasn’t had to do much to promote the concept, but his “trackers” are definitely catching on among tree service companies with specialty applications, for example maintaining a right-of-way, favoring the track type brush chipper over a big mower or large chipper.

Bandit, Morey says, uses a rubber track undercarriage, typically Caterpillar 304 and 305 technology. Smaller 6- to 9-inch self-propelled Bandit chippers are around, with many finding their way to Europe, he explains, but the 12- to 18-inch capacity chippers remain popular in the U.S. “They [track machines] provide great flotation and can get into wet areas a standard chipper could not get to,” he adds.

If a company adds a track-mounted stump grinder together with a track-mounted chipper, a two-man crew can do a lot of light land clearing fast, because they can drive right to the site. Of course, if the site isn’t difficult to access, crews can leave the self-propelled on a trailer, haul debris to the chipper and blow chips into the chip truck.

The most popular Bandit self-propelled is the Model 254, a 14-inch unit, followed by the 1590 17-inch and 1890 18-inch.

Chris Nichols, environmental sales manager with Vermeer Manufacturing Company, also sees more and more self-propelled units starting to appear on job sites. Vermeer manufactures a self-propelled unit—the BC1400TX.
“If you have a right-of-way or utility-line clearing project along a 15-mile stretch of road, you can unload the chipper from the trailer, put it in the right-of-way and, as the material falls to the ground, you can move the chipper to the material,” says Nichols. “This eliminates the additional handling or transporting of material to a towed chipper, saving the contractor time.”

At J. P. Carlton, “Business is good,” says John Bird, president, “and a lot of that has to do with the popularity of track-mounted chippers in the 9-, 12- and 18-inch capacities. Over the past two years, we’ve seen the popularity grow because of productivity increases in certain specific circumstances. It’s a matter of being able to take the chipper to the area being worked instead of having to carry or drag trees out.”

Bird sees opportunity ahead for manufacturers and end users as new chipper technology evolves, for a variety of reasons.

“First, the public is more aware of the value of trees and the need to care for them. The next thing our industry is coming to recognize is that what once was trash – woods chips – has a lot of value as more people use chips for more purposes.”

Another thing to consider, he says, is the introduction of low-emissions engines. Not only are modern chippers putting out fewer emissions, which is good for the environment, it turns out that the move has had a secondary and positive effect on the bottom line. Bird gladly points out that all his chipper engines are diesel, which have become more fuel efficient. Less fuel use is good for the environment and impacts the bottom line.

The debate over disk versus drum style chippers will likely last as long as the industry itself, and Charles Ritz, president of Karl Kuehnerling Inc., says his company intends to continue to focus on the drum style.

Kuemmerling, too, is moving toward more diesels, though not by choice. Ritz laments the fact that the company can no longer get the 6-cylinder, gas-powered Ford which had been the company’s workhorse, but with government restrictions and the cost of “clean-tech,” such as catalytic converters, the cost to continue could not be justified. Most units are now mainly Deere or Cummins-powered diesel jobs, Ritz says.

According to Rob Faber, commercial sales specialist at Morbark, his company is looking into going tracked for its brush chipper line. New for 2007, is the Typhoon 20, now going into production, a 20-inch maximum diameter machine offering 250 to 325 horsepower diesel (Caterpillar or John Deere engines). They can come with a winch or loader arm or radio remote control. Sticker prices range from $80,000 to $120,000 he reports, depending on the setup.

Faber is seeing that, with the price of fuel rising, people are now resuming the practice of selling chips for fuel, especially among large tree operations and loggers wanting to turn “tops” into profit paid at co-generation power plants. All Morbark

All J. P. Carlton chipper engines are diesel, which have become more fuel efficient. Less fuel use is good for the environment and impacts the bottom line.
machines are set to produce a 5/8-inch chip (depending on material passing through the cutting heads), which is small enough to burn well and large enough for efficient material handling.

“What we’re really seeing is a lot more complete-service tree companies,” says Faber. “It used to be that a small company might have a chainsaw and chipper and bring in a stumper from a separate company or sub out any other part of the operation as needed. Now, services are showing up complete – tree take-down, chipping, grinding, filling the hole, seeding and landscaping.” Versatile equipment makes a major difference in one’s business, he argues.

Nichols with Vermeer agrees that chipper customers are growing more concerned about end-product quality and how the chips can be used. This is a major driver affecting what type and style of chipper they purchase. When the goal was simply to reduce volume in order to dump the waste somewhere, the type of chip created by the chipper didn’t matter much.

“Chippers have always been used for green waste reduction,” says Nichols. “Today, end-product use is changing and having a chipper that produces a chip that meets the needs of the end market is becoming more important.”

From Rayco, Kevin Covert, sales and marketing manager, offers his view of the evolution of the chipper. “Originally virtually all chippers were high-speed drum-type. They were called chuck-and-duck – chuck the wood in and duck – later improved to be self-feeding and thus safer. Next came the disk-type, popularized in the late 1980s and ’90s, with self-feeders and feed control bars. They were said to be easier on the chipper given the angle of the disk attacking the brush. Along came more features, like auto feed controls, allowing the machine to regulate RPMs and recover (under heavy load).

“The evolution has come full circle, back to the drum again. I think with disk type chippers you tend to get stringier, less uniform chips, and they usually don’t like stringy material like vines. A drum is more universal and can handle pretty much every brush material, now that they are built in different diameters to strike the wood at the same angle as a disk,” he explained. “The result is a uniform chip and the ability to accept pine and stringy raw material.”

New from Rayco and expected to hit the market mid-May is a 17-inch capacity Rayco RC16.5 chipper. Covert explains that the machine actually will accept materials up to 17-1/2 inches but the name was selected to reflect the fact that the chipper “will take 16-1/2-inch material constantly, non-stop,” he says, noting the importance of that, as the new machine runs on a 140 horse Caterpillar diesel fed from a 53-gallon fuel reservoir and thus can run all day without refueling.

Darren Modin at Echo Bear Cat says the company (formerly Crary Bear Cat) makes
some 40-plus models, from 2½ to 12-inch capacity. In the professional arena, there is a re-design of the popular 6-inch chipper that includes easier access to the engine and other maintenance areas. The 8-inch features a turntable and programmable auto feed system as a standard feature. Powered by a 24-horsepower Honda or 35 hp Briggs (both gas), these run just over $13,000.

Redesigns also include the 6-inch line of chippers in three models – a 24 hp Honda, 35 hp Briggs & Stratton (both gas) or 28-hp Kubota diesel. In the 9-inch look for a 28-hp and 50-hp Kubota diesel engine, or step up to the 12-inch with a beefy 86-hp Kubota.

The end use of the chip is also driving production for Dennis Beam, former president of Wood/Chuck and now heading up Altec’s Environmental Products (sales and product development) Division, since Altec absorbed Wood/Chuck.

“Altec will continue with current product lines, the still growing and successful traditional hand-fed disk chipper and self-feeding and control-feed drum types,” explains Beam. “We are looking ahead to develop new products that have improved chip quality for aftermarket reasons, such as landscape mulch and fuel. We are entering into non-hand-fed chippers in smaller lines by the end of the year to minimize operator exposure,” he says.

“If you take out the variable horsepower, we build four disk models, two self-feed drums and three control-feed drum types in the 6- to 18-inch size. We already are into the self-propelled and wheeled technology but not as a dedicated chipper, rather as a carrier tool mount.”

The biggest thrust carried over from Wood/Chuck and now at Altec is safety, Beam says, specifically pointing to the company’s patented panic bar. “Through Altec, we intend to continue to push safety and encourage every operator to use our DVD. In this environment that’s important considering the high level of operator turnover,” he says. “It’s more than product – it’s a focus on safety and training.”

We caught up with Tom Gross, president of Dynamic Manufacturing, maker of the Conehead chippers, as he was about to introduce a new and larger version of his company’s chipper with a feed bed and conveyor chains that are “ideal for the purpose of handling slash tops and waste wood, chipping brush into biomass for fuel.”

The new family addition is the Model 580, which employs the Conehead drum design, beefed up with a 365 hp Cummins diesel. Rated at a 22-inch capacity, the input measures 34 by 22 inches, and the machine features what Gross describes as a unique four-wheel cutting setup – two vertical and two horizontal.

At $175,000, most units are fully standardized. Gross explains that the machine is remote controlled, entirely, and despite its throughput and brute strength can be pulled with a small truck.

At Salsco, president Sal Rizzo says the company focuses on the smaller devices for rental outfits, landscapers and small tree care operations. The objective is to...
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chip and shred and vac next to a home. Just introduced in early May is the 616CSV, a 16-hp Briggs gas-powered number with some interesting and profit-making attributes for equipment rental outfits that retails for $5,500. The machine is a combination chipper, shredder and vac.

The company’s big seller in the commercial tree care market is the 13-inch chipper, Model 813XT with a 127-horse Caterpillar engine capable of processing about 100 feet of material per minute. Salsco makes chippers from 3½- to 18-inches by 24 inches at prices running from $1,700 to $70,000.

James Cornelius, president, US Praxis, Inc. headquartered in Illinois, remains a private label manufacturer of stump grinders, however it intends to expand into the small towable end of the chipper business, typically defined as the rental, homeowner, small landscape and tree care market. Cornelius predicts new product announcements will be made this fall. The units will be in the 2- to 3-inch capacities.

As the demands have changed for chips in the U.S., the market is even further ahead in other parts of the world, reports Bob Engler, president of Woodsman. His company has made a continuous effort to produce a consistently sized chip without long, stringy pieces.

“We will hear a lot more about biomass (fuel-to-energy) in the future, and it will become a strong part of our country’s energy policy for the first time in decades,” Engler predicts. “Overseas, Europe is way ahead of us on this, but we are starting to see it in use – especially in the Northeast – in schools, hospitals and small facilities. In fact the University of South Carolina has gone online with a biomass boiler. This is certainly a big thing for the arborist. At the end of the day, if they don’t have a good outlet now for their chips, they will begin to see good value in their waste products.”

He explains that biomass facilities right now don’t spend a lot of money on support equipment. Landscape chips don’t augur feed well, often jamming or simply not feeding.

“We will begin to see a push for small, more uniform chips that can run through the feed system,” he says. “That will be a big plus for the arborist, even if it means putting more chips (volume) on a truck. There will be less dumping and higher productivity. Arborists win both ways.”

Along with the brute 400-800 horsepower chippers (ideal for biomass) production, Engler said the company is working to streamline its hand-fed line of chippers and introduce a 730 (above), 748 and 780 into the popular 700 series. These will offer units in the 80- to 200-hp class, depending on the model.

“We went back to the drawing board to make a consistent chip and to simplify the chipper by removing moving parts as much as possible, cleaning up the hydraulics with fewer hoses and fittings and generally making the footprint smaller without sacrificing capacity.”

From tracked vehicles that make it easier to reach trees to new markets for the end result, the choices facing arborists and the markets available to them are changing. The old days of drag, chip and dump didn’t maximize productivity or make the most of this most valuable resource. Innovative equipment should lead in innovations in thinking about wood waste.
Carlton's line of chippers is designed for the most demanding commercial users. Each chipper features heavy-duty construction like form-welded frames, extra heavy-duty infeed tables, superior Torflex axle strength including heavy ply tires rated to carry the load. These chippers are built for performance with the most infeed pulling power in the industry, high-speed dynamically balanced cutter disks, channeled chip throwers to maximize discharge rate and eliminate plugging.

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By Joshua T. McClenahan

“Man suffers gruesome death when pulled into brush chipper”
“Tree worker killed after 40 foot fall”
“Tree traps and kills man”
“Man dies when tree limb suddenly snaps”

These are the headlines of tree care industry fathers, sons, nephews and close friends lost in fatal accidents in 2006. Falls ... electrocutions ... blunt force trauma. These are just a few of the accidents that are too frequently associated with tree care and always make the headlines.

Ergonomics, on the other hand, does not capture anyone’s attention. When it comes to “sexy” injuries, tendonitis and trigger finger are not at the top the list. Ergonomic disorders are not bloody, they don’t make for good stories, and are never fatal. So why should anyone be worried?

Unlike traumatic injuries, such as lacerations, which are easily identifiable, there is tremendous ambiguity associated with the cumulative trauma aspects of ergonomics.

Whether you specialize in removals or drag brush, succeed at ornamental pruning or make decisions as the CEO, ergonomics should be at the forefront of your mind. Many people in the industry see the word “ergonomics” and look the other way with little or no concern of the potential dangers it could have to themselves, their organizations, and even their families.

While the term ergonomics has only been around for about 50 years, the theories and practices have been researched for centuries. However, it wasn’t until the dawn of mechanization that the financial impacts of ergonomics were recognized in the form of productivity. Whether it’s widget assembly or tree removals, optimal performance is crucial to the overall success of the business.

Thousands of businesses across the globe have paid the price for ignoring ergonomics in their workplace. It is a concern that is growing rapidly in physically demanding occupations. This article will define ergonomics by examining its principles and risk factors and how to utilize that knowledge to effectively implement ergonomic control measures in the tree care industry.

Price of ergonomics

Ergonomics is crucial to optimum efficiency within all business operations. By some estimates, within the United States nearly $1 billion per week is lost due to poor productivity relating to ergonomics.

The widespread acceptance of ergonomic disorders in California could help explain the significant frequency and severity of related workers’ compensation claims that have become highly publicized in the Golden State. The sore muscles and mild strains that nag most arborists after a number of years in the field are accepted as compensable workers’ compensation claims.

The challenge for small business owners is that soft tissue injuries (injuries involving muscles, tendons, ligaments, and nerves) can linger for months, even years. This translates into reduced production and the continuing trend of rising workers’ compensation costs. In California, the average cost of a cumulative trauma injury is more than $40,000 and includes three weeks of lost work days. According to the Bureau of Labor Statistics, musculoskeletal disorders accounted for more than one-third of all lost workday cases in the United States.

Ergonomics defined

Ergonomics can be defined as the study of an individual and the surrounding environment. It is a science that examines human performance and well-being in relation to the job or task being performed. For office personnel this includes an individual’s interface with their desk, computer and peripheral equipment in stable environmental conditions.

However, in tree care there are substantially more factors involved. For example, the removal of a 125-foot redwood has an abundance of risk factors associated with the job. Picture the tree location within...
gathering and analysis, manufacturers can
body measurements. Through this data
injuries such as tendonitis, strains/sprains,
parts and their functions. A firm under-
components.
resilient machine comprised of several
trolling ergonomic exposures. Think of the
components is critical in effectively con-
an arborist, a general knowledge of the
industrial engineering. Because each plays
chanics, anthropometry, psychology and
Injuries such as tendonitis, strains/sprains,
root of most ergonomic disorders.

Principles of ergonomics
Ergonomic disorders are synonymous
with a variety of terms relating to soft tis-
including: Cumulative Trauma Disorder (CTD), Repetitive M
motion Injury (RSI), and Musculoskeletal Disorder (MSD).

There are several fields of study that
have contributed to the understanding of the work-related stressors of ergonomics,
including: anatomy, physiology, biome-
anthropometry, psychology and
industrial engineering. Because each plays
a critical role in the overall well-being of
an arborist, a general knowledge of the
components is critical in effectively con-
trolling ergonomic exposures. Think of the
human body as a complex, fragile, but
resilient machine comprised of several
components.

Anatomy and physiology describe body
parts and their functions. A firm under-
standing of these sciences aids in the
identification of common soft tissue
injuries such as tendonitis, strains/sprains,
and tennis elbow.

Anthropometry is the study of human
body measurements. Through this data
gathering and analysis, manufacturers can
have a clear design strategy for equipment.
The height of a chipper feed chute, distance
between handles on a chain saw, location
of the throttle and diameter of handles are
designed based on anthropometric data to
ensure optimal comfort and safety for the
user.

Biomechanics is the study of the princi-
pies of mechanics and anatomy in relation
to human movement. Physical therapists
utilize biomechanic principles because of
the strong relationship of the quality of
movement and overall human health.

Psychology is the science behind mental
processes and human behavior involving
thought processes, impressions, motivation,
feelings and emotions. Many people
question why and how psychology is
included as an element of ergonomics,
especially when the other disciplines relate
to human health and soft tissue. This is the
critical element because it is the link
between motivation and human well-
being.

Ergonomic risk factors
Remember, ergonomic disorders are
cumulative. You don’t typically see blood
or bruises from repetitive motion injuries.
It is not something that can be treated at the
clinic with a bandage. These disorders take
time to develop into noticeable symptoms.
Similar to trees, the human body can only
tolerate localized stress for a limited time
before failure becomes imminent. Also like
trees, there are preventative measures we
can take to reduce our risk and increase
health and vitality.

Optimal circulation is absolutely essen-
tial with regards to prevention and
treatment of ergonomic disorders. The pur-
pose of the circulatory system is to supply
tissues with oxygen and nutrients, to assure
proper function of nerves, muscles, bones,
and tendons, and heal injured tissues.
When the system is finely tuned, it
removes waste products that can build up
from muscle activity, which is crucial in
preventing discomfort.

To test this theory, simply extend your
strongest arm straight out from your body
and keep the other at rest and stay in that
position for 10 seconds. This introduces the
first two and perhaps most vital risk fac-
tors: Static posture and awkward posture.

Now, add a chain saw of your choice and
maintain that same position for one minute.
After the minute has expired, move both
arms to the resting position for five seconds
and repeat for two minutes. Repeat each
step for eight hours. For those in Phoenix,
be sure to complete the exercise in the sun
on a nice July day. For those in the North,
try early February under the shade of a
snow-covered tree. For the tough tree guys,
keep two hands on the saw, extend your
arms, and run it all day long.

In this exercise, the framework has been
established to enable the development of a
fine new ergonomic disorder. Parts of the
exercise may seem extreme, but in fact
describes a typical day for an arborist.

Anytime the body varies from an at rest
position or neutral posture, the potential for
an awkward posture exists. Extending the
arm straight out is an example of an awk-
ward posture. Maintaining that position
with no movement is a static posture.
Maintaining a static posture forces the
muscles to contract continually, increasing
the build-up of waste products; meanwhile
the awkward posture results in a decrease
in circulation, which results in the body’s
inability to adequately remove waste prod-
ucts and deliver oxygen and nutrients to the
deprived muscles and surrounding tissue.
This combination of static and awkward
posture is not only uncomfortable but is the
root of most ergonomic disorders.

There were several additional elements

![Upper extremities begin to fatigue after hours of overhead work and constant reaching.](image-url)
mentioned in the example. Adding weight or force increases the muscle contractions and the need for additional blood that is not available during static muscular loads. Increasing the duration from seconds to minutes, limiting recovery time, and increasing the repetition, reduces the circulatory system’s effectiveness to remove the buildup of waste products. Adding temperature extremes, vibration from a saw, even noise can act as risk factor multipliers to the activity.

What does this all mean? Tree work is an ergonomic nightmare. Every major risk factor is present, few education and training programs are in place, and without appropriate intervention the nagging shoulder, elbow, neck and back pains will continue to propagate into very difficult-to-treat ergonomic disorders.

Ergonomic interventions and control measures for management

Nobody wants to go home uncomfortable at night and not be able to enjoy their families. It is demoralizing, and bad morale spreads like a disease in the work environment. When people come to work both uncomfortable and unhappy it is a recipe for a downward spiral in any organization’s safety program. This problem can be controlled with appropriate ergonomic program implementation. However, this is also incredibly challenging because it takes tremendous commitment from everyone in the organization.

Most people can identify exposures in the industry without even looking at a job site, but few can implement control measures that will remain effective. In order to be successful, the corporate culture must be able to adapt to change and must embrace and nurture a commitment to safety.

Because of the dynamic nature of ergonomics, focus on both the prevention of occurrences and mitigation of existing problems is essential. Consider the following front- and back-end objectives when implementing an ergonomic strategy in an organization:

Prevention objectives

- **Establish a Written Program with Clearly Defined Goals and Objectives:** The key is to prioritize the areas of greatest risk and systematically address the problem through control measures. The program should outline the strategies necessary to accomplish each objective. It must be a dynamic system capable of frequent review and updates. There are numerous resources available to assist with this process. Insurance carrier loss control consultants are often available, at no cost, and bring a wealth of experience and knowledge. Various government Web sites have volumes of literature and training aids, including: OSHA, NIOSH, Cal/OSHA, OR-OSHA, and the Washington State Department of Labor and Industries.

- **Task Variety:** This is the best prevention measure and the most critical administrative control measure. Cross-training employees enables rotation through all business phases such as: removals, pruning, plant health care, stump removal, planting, etc. Job rotation limits the constant punishment to one area of the body and enables increased recovery time while mitigating ergonomic risk factors.

- **Low-Impact Exercise Breaks:** The general recommendation for two- to three-minute exercise breaks is once every hour. As the risk factors are increased, increase the frequency of exercise breaks to every 30-45 minutes. Whether you are in a tree or on the ground, take the time to do simple, low-impact upper and lower extremity exercises. Consider bringing in a physical therapist to provide training in exercises specific to the operation. This has been a proven measure to increase comfort and productivity, while reducing exposure to ergonomic disorders.

- **Employee Selection and Placement:** Evaluate the physical demands of each job position and include that with the job...
Freedom of movement

FAE’s FORESTRY equipment is a clear leader in its field. It offers a perfect combination of power, technology and safety in a range designed for land reclamation and maintenance, as well as the reclamation of dirt roads, forestry trails and firebreaks.
Integrate optimal posture with equipment operation, climbing techniques, ground operations and even driving. The goal is to empower each individual for self-reliance and a level of responsibility for their own safety. Cross-training is an invaluable method to ensure peak productivity and reduce ergonomic exposures.

Investment in Equipment and Technology: The last 20 years have seen significant advancements with the mechanization processes in tree care, dramatically reducing ergonomic risk factors in the field. But use caution, just about every equipment manufacturer out there has put “ergonomic” in the specifications. Remember the risk factors and do not depend on the “ergonomic” tool for prevention.

Communicate with the Workforce: Use a standardized discomfort survey to ask employees how they feel from head to toe. This is a great method of opening lines of communication between management and field staff and can really strengthen the effectiveness of a safety program. Many managers are worried about going this route for the fear of repercussions, but are surprised to discover employees respond very well. The simple communication and acknowledgment of their well-being can actually be a morale booster. Talk one-on-one and keep questions easy and consistent the time investment will be worthwhile.

Examine the Job Tasks: Review job responsibilities throughout the organization to look for risk factors. Pay special attention to jobs that have repetitiveness of tasks, sustained exertions, irregular work hours, six or seven day work weeks, high job stress and invariability, and extended workdays. All of these factors will increase the exposure.

Always Evaluate: Just like tree work, safety is dynamic. Exposures change daily. Evaluate written programs, training, loss history, employee complaints, equipment maintenance, and production indicators to find errors in the organization.

Always Communicate: Once effective communication stops, all safety programs fail. Constantly preach the basics: keep work close to your body, maintain task variety, make low-impact exercises a routine, and acknowledge discomfort before it becomes a pain.

Mitigation objectives:
Early Intervention: Remember ergonomic disorders are cumulative. By encouraging open communication channels, discomfort can be identified before manifesting into a more serious disorder.

Remain at Work: This is critical toward workers’ compensation claim prevention and can only be accomplished with cross training. This step occurs when symptoms are first identified and is very effective in curbing claim frequency and severity.

Return to Work: This step originates after the symptoms have manifested into a medically diagnosed ergonomic disorder. This is a critical stage in workers’ compensation cost containment and many carriers will not only assist with program implementation, but will actually reward companies with premium credits for having an effective return-to-work program in place.

Occupational Therapy: These types of soft tissue injuries must receive continual treatment focusing on strength training, circulation and flexibility in order to improve. Ergonomic injuries can lead to permanent disabilities requiring intense therapy even surgery.

Communicate, Communicate, Communicate: A safe workplace is only possible if communication remains strong. The thought of ergonomics has not even entered the minds of most tree care companies – not on purpose, but because of a lack of understanding of its rewards. Soft tissue injuries are in every tree care organization. They are impossible to avoid in our industry. The true extent of the issue may be hidden at the present time, but the existence of ergonomic problems in the tree care industry is a certainty.

It has been almost 40 years since the passage of the Occupational Safety and Health Act of 1970 that made it mandatory for employers to provide a safe workplace. We have come a long way in recent years, but the tree care industry still lags behind the curve in implementing effective safety programs. Fatalities remain too prevalent and soft tissue injuries have become an epidemic.

Joshua T. McClenahan is the director of risk management for the S.P. McClenahan Company, Inc. This article was excerpted from his presentation on the same subject at TCI EXPO 2006 in Baltimore.
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Business Leadership
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Trees were always important in the life of Francis A. Bartlett, the founder of Bartlett Tree Expert Company.

As a boy growing up on a farm, he was interested in trees, says his grandson, Robert Bartlett Jr, the current owner and chairman of the company. He studied them under the renowned botanist and arborist Dr. George Stone at the Massachusetts Agricultural College (now the University of Massachusetts), graduating in 1903.

After graduating, he traveled to Virginia, where he taught horticulture at Virginia’s Hampton Normal and Agricultural Institute (now Hampton University). On its grounds stands the Emancipation Oak, where President Lincoln’s Emancipation Proclamation was first read in the South, one of the National Geographic Society’s “10 Great Trees of the World,” according to the university’s Web site. The institute was founded during Reconstruction as one of the first colleges for black - and later also Native American - students.

Francis made his way to New Mexico, says Robert, where he planted an orchard, then moved back north, where he thought he had a job on an estate.

“The job wasn’t there,” says Robert, “so he knocked on doors. His first customer was in Westchester County (in New York State).”

This was 1907, when ornamental and shade trees, including the American elm, were just beginning to die in droves throughout the eastern United States. Francis, who was working on estates on Long Island, realized he’d discovered a
niches the company to provide preventative care for his clients' trees. His slogan was, "America's Trees Are Worth Saving." While he worked, he continued to learn everything he could about them. From that original office the company has expanded to almost 100 locations.

**Research lab**

"Somewhere along the line, Francis decided there was a real science that explained why a tree died," Robert says. In 1927, Francis set up the Bartlett Tree Research Laboratories in Stamford, Conn. In 1965, the lab was moved to North Carolina.

Today the lab has a staff that includes five researchers with Ph.D.s in areas such as plant pathology, entomology, physiology and soil science. The technicians at the lab have degrees in fields including horticulture, botany, arboriculture and forestry. The lab analyzes more than 10,000 plant and soil samples every year for insect pests, diseases and cultural and environmental problems, as well as soil nutrient and pH levels. It networks with universities, government agencies and other groups.

It advises Bartlett's arborists on all aspects of tree care, including pest management, plant health care and standard practices for pruning and soil management. It also does field testing of new products for suppliers, says Gregory Daniels, president and chief operating officer, and a former chairman of the board of the Tree Care Industry Association.

The lab is crucial for diagnosing tree problems, explains Peter Becker, who is a vice-president and division manager. "The strong collaboration of science, scientific method, implementation and evaluation means we can look at innovations rather than just throw things at the wall that might work."

While research done at the lab benefits the Bartlett company, it benefits the tree care industry as a whole as well, insists Daniels.

"Scientists at our research facility gave presentations at more than 90 industry functions last year, and a lot of it was from research and experiments we conducted at our lab. We share a lot of our research to help promote good tree care and to foster good relationships with competitors."

Ultimately, Daniels says, the aim of the industry is to improve the care of trees, and for that, competitors need to cooperate and share information. "You can't advance the industry without having cooperation. Good competition brings out the best in everybody. The good companies are all striving to attain higher levels of professionalism."
People at Bartlett

When Francis opened his first office, the tree care industry was in its infancy in many ways. Most of the companies were small operations, Robert says, and all you needed to go into business was a truck and a saw.

“He was sort of a pioneer to take a concept like this. He had the foresight to open more offices and hire good people. He built a very strong organization.”

Probably the company’s greatest strengths, says Becker, are its vision and leadership, which began with Francis.

Francis ran the business mainly from the home office. Robert, who spent most of his childhood living less than a mile from his grandfather, recalls that, “He was a wonderful person. He was hard-working and exceptionally smart. He’d listen, but he knew when to make his point. He also kept a pretty strong hand in the business.”

It’s still a family business, with Robert the third generation to lead the company, and Bartlett family members working for the company from California to England.

And, Robert says, “I have pretty much the same attitude as my grandfather: You hire good people, give them the ability and the help to do a good job, and then let them go out and do it. When you deal with people fairly, you attract good people.”

The company recruits and trains strong people and provides them with opportunities of promotion from within, says Becker. “We look for people who are creative and interested in working with people and enjoy challenges.”

This policy adds great value to the company. In 1972, Becker was a college student with a summer job with Bartlett in field operations. Daniels has worked for the company since 1975. “Our employees are part of the Bartlett family,” Daniels says. “It’s a rarity today, the investment the company makes in its employees, including things like training programs, pay and benefits.”
Ultimately, he adds, “our employees are our most important asset. We’re in the people business as much as we are in the tree business.”

The company nurtures prospective arborists while they’re still in school. The Bartlett Tree Foundation gives scholarships to students at 29 colleges and universities across the country. A good many of the fund recipients come back to the company when they graduate, notes Daniels. The company also has internship programs for students as far away as England.

The company is a sponsor of the TREE (Tree Research and Education Endowment) Fund, a nonprofit organization begun as a joint mission between TCIA and ISA. It also offers scholarships to students in horticulture and forestry.

When new arborist-representatives, IPM technicians and production foremen join Bartlett, they attend a week-long school. There are also workshops and meetings throughout the year.

In fact, the company’s training is so good, Robert says, that some former employees who go out on their own advertise that they’ve been trained by Bartlett.
On June 6, Bartlett will begin a year of celebrating its centennial with a tree planting project – planting 100 trees in 100 days.

Expansion

The company has expanded tremendously since Francis’s death in 1963. Today, the company operates in 29 states across the country. Fifteen percent of their operations are outside the U.S., in Canada, England and Ireland. They consult in Europe, Bermuda, Hong Kong, Argentina and Mexico.

Altogether, they have 97 offices, says Daniels. “Hopefully we’ll have 100 by our 100th anniversary.”

The company has become more decentralized as it has grown, Becker says, which is in keeping with Francis’s philosophy of being a community-based business. Its employees are members of the communities they work in. This way, long-term relationships can develop between arborist-representatives and their clients.

Since Bartlett became an international company, Becker says, management meetings, lab support and training all have provided opportunities for the exchange of ideas.

Arboriculture is a little different in Europe than in the U.S., says Daniels. “We’ve learned a fair amount from them. For example, a lot of the ANSI 300 standards were taken from British standards.”

The equipment is also somewhat different, he says. The biggest difference though is in insect and disease management. “Quite often in Europe they rely on cultural practices.”

Bartlett and the tree care industry

A lot has changed in the tree care business in the last 50 years, and in particular, in the last 10 years, says Robert. He credits much of it to the progress the company has made, both in its research and training. Regulations are tougher and the industry is much more professional, he says. Organizations like the Tree Care Industry Association “strive hard to bring up the standards of our industry.”

It’s important to the company to be part of community groups, local associations and trade associations, Becker says. The sense of volunteerism is important, and the company provides and encourages leadership and responsibility in professional organizations, but the company benefits, as well.

“These people will be growing within,” Becker says. “They give and they learn. We try to make sure we’re sponsoring the next group of leaders, too.”

Centennial Celebrations

On June 6, its anniversary date, the company will begin a year of celebrating its centennial.

There will be a tree planting project where every office will plant a tree: 100 trees in 100 days. The final planting will culminate with a company meeting in October. They’ll take on four large volunteer projects in the mid-Atlantic area. One is to care for a 100-year-old deodar cedar tree at Tyler Arboretum in Pennsylvania.

“In our company, one of the visions we have is making being an arborist fun,” Becker says. “If we could all be here for long enough, we have the capability of taking Bartlett from 100 years to 200 years.”

Robert adds, “My grandfather would be proud.”

Janet Aird is a freelance writer living in Altadena, California.
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In a memorandum dated April 17 to OSHA Regional Administrators, Assistant Secretary of Labor Ed Foulke reiterated that employee training required by OSHA standards must be presented in a manner that employees can understand, and that failure to do so is a citable offense.

Many OSHA standards require that employees receive training so that work will be performed in a safe and healthful manner. It is the Agency’s position that, regardless of the precise regulatory language, the terms “train” or “instruct” mean to present information in a manner that employees receiving it are capable of understanding.

OSHA asserts that the courts and the Occupational Safety & Health Review Commission that adjudicate such matters have agreed with OSHA: an employer may not take advantage of “an adequately communicated work rule” when it did not communicate that rule to a non-English speaking employee in a language that employee could understand.

In practical terms, this means that an employer must instruct its employees using both a language and vocabulary that the employees can understand. For example, if an employee does not speak or comprehend English, instruction must be provided in a language the employee can understand. Similarly, if the employee’s vocabulary is limited, the training must account for that limitation. By the same token, if employees are not literate, telling them to read training materials will not satisfy the employer’s training obligation.

Additionally, OSHA’s training provisions contain a variety of specific requirements related to employee comprehension. For example, §1910.147(c)(7)(i) (Lockout/Tagout) requires the employer to verify that the employees have “acquired” the knowledge and skills for which they have been trained. Many other standards have analogous requirements. Tree care and landscape employers need to be aware of the OSHA standards applicable to their workplaces to be familiar with these specific requirements.

A good way for the tree care employer to see what federal OSHA standards apply to him or her is to visit OSHA’s Tree Care Safety & Health Topics page: www.osha.gov/SLTC/treecare/index.html.

In order to assist employers in meeting their training obligations, OSHA has created a Web-based assistance tool. The tool is intended to help employers with a Spanish-speaking workforce identify the Spanish-language outreach resources on OSHA’s Web site. While the site includes links to Spanish-language resources, it is intended primarily for English-speaking and bilingual users. The site is located on OSHA’s public Web site at the following address: www.osha.gov/dcsp/compliance_assistance/quickstarts/hispanic/index_hispanic.html.

OSHA compliance officers are responsible for determining whether employees have been training effectively. If they determine that a deficiency exists in the employer’s training program, they must document any evidence that would demonstrate that employees were unable to understand the training and apply it to their specific workplace conditions. If a reasonable person would conclude that the employer had not conveyed the training to its employees in a manner they were capable of understanding, the violation may be cited as serious.

Peter Gerstenberger is Senior Advisor for Safety, Compliance & Standards for the Tree Care Industry Association.
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**AD Size:** Prices based on 250 characters (including spaces and punctuation)

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Quantifying accidents in the tree care profession is something that I became interested in around 1999, because, unfortunately, it was too common for arborists to know somebody personally who was seriously injured or died while performing tree work.

There are not too many professions that you can say that about. The tree care profession has a fatality rate that is at least 10 times the national all-industry average, an unenviable ranking that is only exceeded by a few other high-risk professionals, such as logging and commercial fisheries. The fatalities are not highly visible, since tree workers tend to be seriously injured or die as individuals on a job site, not in a group, which tends to attract the news.

We also try to explain the accidents we hear about by saying “that’s the other guy.” The typical tree care accident does not occur to workers because they were stupid, clumsy or any other excuse. For the most part they are just workers who made some serious mistakes, ones we are all capable of doing. Calling the victims names is a way to separate “them” from us, but that also keeps us from investing the time to figure out why the accident occurred in the first place.

When does an accident occur? I shake my head every time I hear a company owner or manager say to me “We don’t need any safety talks and we don’t need a safety person because we are not planning on having an accident.”

Must be nice, but an accident by definition is an unplanned event. Unplanned does not mean random, however. A frequent response by a worker who had a close call is, “I have done it this way thousands of times without a problem.”

Not exactly. An accident occurs when a series of mistakes are made in a proper sequence. This is an important point. When we start looking at accidents to determine why they occurred, usually it is not one mistake or even two but several mistakes all made in a critical sequence. Accidents are like dominos; everything has to be set up just right (or perhaps wrong is a better word) to happen.

A common accident in this industry is being struck by a falling tree – either the feller or another worker who walked into the path of the falling tree. Accidents to fellers tend to have at least two mistakes in common. They cut through their hinge, so now the tree can move off the butt. And since they are still cutting while the tree is falling, the feller is not standing back along the safety route. The unfortunate outcome is too often the feller lying beneath 10 tons of tree – a fatal outcome. The other typical accident occurs to a ground worker who walks into the work zone and the path intersects that of the falling tree. Why?

Most likely these series of mistakes were made; no work zone was established, no command and reply system used or in place, the feller focused on the cut and did not have a second to look out into the work zone (probably because the feller was still running the saw while the tree was falling); and the ground worker was concentrating on where he or she was heading, not what might occur along the way.
Since accidents are unplanned but not random, this means we can take steps to reduce them. They do not have to be accepted as part of the job. These steps start at the top of the company, not at the bottom. When I have company managers come up to me and say the problem is they cannot get their crews to start wearing PPE or stop standing on chipper chutes to clear jams, the problem is not entirely with the crew. The problem is the lack of leadership. Everyone who has worked on a tree crew knows when the boss is giving lip service to safety, whereas production (at almost any cost) is the only thing that is truly important.

A culture of safety begins with company owners and their safety manager understanding the behavior of adult learners and effective on-the-job training. These are not skills that come naturally to most of us. Owners and safety managers can benefit greatly from education in these critical subjects. After all, the tree care industry does not lack safe practices and equipment; we have made great strides in these areas during the past 50 years. The root cause of many of our accidents is related to unsafe behavior – not tools or techniques – and this is the area that needs to be addressed more in our efforts to improve safety in the industry.

A good example of the need to change behavior is the number of chipper accidents that have occurred in the past couple of years. Chippers are a common piece of equipment. They are a big improvement over the old method of shrinking brush that I was taught – stand in the back of the dump box and use a chain saw to cut everything into smaller sizes. This was definitely a risky task but one many of us accepted as a matter-of-fact back in the ’60s and ’70s.

The modern chipper is a very safe and efficient piece of equipment, but accidents still occur. It frustrates the manufacturers because they can put all the safety labels and features on that are possible and practical, but if someone wants to figure out a way around them, they can. The most serious chipper accidents, those that result in amputations or death, usually involve the worker either being pulled in hands-first or feet-first. Recently a tree worker, with more than 20 years of experience was killed when the brush caught him on the gloved hand and he was pulled through hands-first.

Even more common are workers pulled in feet-first. Typically, a tree worker jumps up on the chute to clear a jam and his foot is pulled in. Crew members hit the reverse bar but it does not work and the worker is pulled all the way into the chipper.

Two lessons from this type accident are:

- never to stand on the chute
- never depend on the reverse bar as an escape if your foot is caught.

I would guess that everyone reading this article knows these warnings already. The question becomes, does everyone on your crews know this? If not, what are you going to do to change this behavior?

The simple solution is to fire anyone caught trying to kick brush through a chipper (before the chipper catches them) and, no question, it may come down to this. But the company needs to understand why this behavior is occurring in the first place. Is it a lack of training, improper training, or is training given lip service while the crew believes production is the priority, not safety?

Firing workers is not the solution. Understanding and correcting the underlying problem is the key, though obviously the need to fire workers who cannot follow safety rules is necessary for the welfare of the company and even the worker.

Fostering a culture of safety means the company is dedicating the time and resources to ensure that the workers have the equipment and training to operate safely and efficiently in this high-risk industry.
environment we call arboriculture.

Tailgate sessions and safety briefings are certainly a critical part of this training, but having a safety manager who understands how to train adults is essential to having the needed behavioral changes on the crew. Another critical need is to have outside trainers in addition to all the safety training conducted in-house. The advantages of bringing someone in are several fold. First, even if this outside trainer covers the same material, the message will be heard differently. We, as learners, often become used to an instructor’s style and voice cadence.

A trainer from outside the company forces us to adapt and consequently we often hear something said in a new light. Outside trainers often have specialized skills in a particular area of tree care – aerial rescue, rigging, felling or other topic. This knowledge conveyed to the crew can enhance safety.

Outside training is of no value and can even be a detriment if the trainer is not knowledgeable or does not understand how adults learn. In recent years our industry has seen an increase in the number of individuals and companies that provide outside training. This is a welcome change to the industry where safety training was often ignored or not given much emphasis. Unfortunately, not everyone who is a trainer should be training. Our industry has seen serious injuries and fatalities during training, not to mention the number of accidents that may be occurring following bad training sessions.

While utilizing outside trainers should be a key part of any company’s training program, it is essential for the manager to investigate the qualifications of the individuals or company as to their expertise in the particular training topic and their ability to train adults. At this point, this is a difficult task as standards for trainers is in its infancy.

TCIA’s Certified Treecare Safety Professional (CTSP) program is an important step in that direction. In addition, company managers may want to investigate the success of the training programs the trainers have conducted in the past. How many programs have they done during the past year? Is there any documentation as to the success of their programs? Are companies that have participated in the training seeing fewer and less serious accidents as a result of the training? These are all good questions to ask.

At times, training should extend for days, not hours. One day or even one hour training has its value. Short seminars and workshops are an excellent means to alert workers to the risks entailed in this work and the basic steps to reduce accidents. But short sessions provide familiarity, not competency. If the topic is some aspect of climbing, rigging or other detailed subject, it can take several days for the topic to be covered in sufficient detail. Participants must be allowed to practice what they have learned.

We are all working toward the same goal – a safer work environment – and the path begins at the top with the company providing the leadership and direction.

John Ball is a professor of forestry at South Dakota State University where he teaches courses in forestry and arboriculture as well as serving as the campus arborist. He also currently serves as the academic advisor to the CTSP Council.
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TCIA and PLANET partner to advance safety

In a new cooperative venture to advance safety in the green industry, the Tree Care Industry Association (TCIA) and the Professional Landcare Network (PLANET) have joined together to offer safety-related products to each other’s members at discounted member rates. Now, green industry professionals from either organization can take advantage of special member pricing on a larger, more comprehensive assortment of safety products.

As member-supported organizations, TCIA and PLANET are continually working to develop value-added programs for their memberships. This latest joint effort reflects two important objectives of both organizations: to continue to offer new and better benefits to their members, and to foster a culture of safety across the industries.

“Advancing safety is a key issue for both organizations,” says Tanya Tolpegin, PLANET CEO. “We represent different segments of a larger green industry that is in great need of quality safety information and training for its workers. Both organizations have committed to improving safety for all by offering programs dedicated to teaching and encouraging safe practices within industry companies.”

“Many of TCIA’s tree care members also perform lawn and landscaping services, and many of PLANET’s members are moving toward the tree care field, so it is only natural that our two organizations would collaborate to advance the safety movement,” says Cynthia Mills, TCIA president and CEO. “Giving green industry professionals discounted access to even more safety products is another way we can raise the profile of this critical issue.”

PLANET offers several safety-related resources that would benefit workers in the tree care industry, including:

- Safety Program for Green Industry Companies CD. This CD contains a comprehensive company safety policy on topics such as motor vehicle safety, prevention of back injuries, return-to-work/modified-duty programs, reporting and investigating accidents, and complying with OSHA. More than 50 ready-to-use forms, sample policies, payroll stuffers and other safety ideas are included.

- Driving Techniques DVD. Instructions on parking, backing up, and driving in wet conditions increase your drivers’ confidence, skill levels, and safety records. Hands-on tips and a retention test are included.

- Safe Truck and Trailer Operation DVD. This training resource is designed to provide instruction on how to extend green industry employees’ safe practices beyond driving the truck to the safe hook-up, loading and operation of the truck and trailer. It covers pre-trip inspections, proper hook-up procedures, loading and securing equipment onto the trailer, loading materials and loose items, final inspections, driving and safe backing procedures. It is available in English and Spanish versions and includes an employee test.

- Safety Overview: Everyone’s Concern DVD. Available in both English and Spanish versions, the information on this DVD covers safety on the road, familiarity with equipment use, clothing and safety, site awareness, and self-awareness. Helpful tips on how to prevent common unsafe practices such as burns, lifting injuries and fire are also included. Testing material is provided.

- Pesticide Handling for the Turf Care Industry DVD. By viewing this DVD, your crews will learn the ins and outs of pesticide use, including the basics of handling, mixing, and storing pesticides.

- Federal OSHA Compliance Manual. This definitive manual cracks the federal OSHA code and enables you to be current in compliance. Learn which regulations apply to your industry and how to conform effectively. The manual is available in book format or on CD.

These safety products can be purchased from PLANET by calling 1-800-395-2522. Use reference code “TCIA” to get the member discount.
Helping to build a stronger marketplace can have significant benefits for your company. To learn about the many branding and marketing opportunities available, contact Deborah Johnson, Director of Development; johnson@tcia.org or call 1-800-733-2622.
The TV program 60 Minutes recently aired a segment on how laws are made in Washington. Specifically, they looked at how the pharmaceutical industry managed to take care of its interests in the sections of the Medicare law that extended prescription drug coverage to millions of Americans.

Because of its influence on Capitol Hill, industry representatives literally wrote the language that prohibits Medicare from negotiating discounts on prescription drugs. The Veteran’s Administration negotiates discounts on the drugs it buys for veterans, and insurance companies such as Blue Cross use their buying power to negotiate steep reductions in drug prices. But Medicare, which probably has the greatest buying power of any organization, is forbidden by law from negotiating because of the enormous political power of the pharmaceutical industry. The point of the show was to demonstrate how power and influence corrupts Washington.

TCIA, in conjunction with other green industry partners such as PLANET, also tries to influence the laws and regulations that come out of Congress. We do so, however, without millions of dollars in campaign contributions. We can’t hire dozens of former congressmen and staffers to go back and lobby their old colleagues still in power. Instead, we have to tell our stories ourselves.

You, a small business owner and voter, have a story to tell that can be as powerful as any lobbyist whose pockets are stuffed with cash. You protect the environment, provide jobs, pay taxes, support your communities in any number of ways – and vote.

Your industry needs you in Washington, July 15-17, to tell your story. Join TCIA in making your voice heard by the elected officials who write the laws and regulations that affect your business. There is no one who knows tree care as well as you do. And there is no one a Senator or Representative wants to talk to more than a voter who cares.

Make plans today to attend. For more information or to register, go to tcia.org, or call Mark Garvin at 1-800-733-2622.
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By Vic Foerster

Early one spring, I received a call from a summer youth camp to investigate why an anchor tree for a high ropes course toppled over. When I discussed the anchor tree with the counselor over the phone, he told me that when the staff returned in the spring, they found one of the main support trees had fallen over during the winter. He was now concerned about the rest of the trees and wanted me to see if they were safe.

A high ropes course is an obstacle course of elevated tightropes, suspended rope ladders, balance beams and Tarzan swings. They are often set within the canopies of mature trees, which give them an Ewok Village feel. This one was set 25 feet off the ground.

The idea behind this jungle gym in the sky is to teach kids courage. A person climbs to a small platform built in a tree. The participant wears a safety harness that is connected by a rope to cables that run above the course. The line is then belayed to a ground-person who can safely lower them in case they slip and fall or if they panic and freeze.

Children had been coming to this Lake Michigan camp each summer for two weeks of outdoor activities. The high ropes course was a big attraction for the youth. They looked forward to it with some nervousness. Successful completion of it had become a rite of passage for the campers.

It was a nice April day, cool but sunny when I arrived at the camp. The trees hadn’t leafed out yet, but the buds on the undergrowth were starting to swell. Sarah, a 20-something counselor gave me a ride out to the site. We were driving through a stand of hardwoods and a green blush tinted the hillside. An occasional hemlock or pine grew amongst the mostly oak, maple and beech. The trees looked to be about 80 years old, maybe more.

As we walked down the slope toward the clearing, Sarah said, “You’ll see the tree. It’s pretty obvious. It’s lying on its side. Some of the cables and ropes are still hooked to it - at least the ones that didn’t break. It’s gonna be a real chore to get this fixed by next month.” She continued, “I suppose we’ll have to redo the whole thing. Brad and Tom and Joe – they’ll be up for that. They’re rock climbers. They like this sort of work.”

I didn’t reply. But I was thinking that this didn’t sound like a job for an amateur.

We emerged from the woods into the cleared ring and I stopped short. I felt a cold shiver wash over me and tried to reply to Sarah’s questioning look, but no words came out. Before me, about 100 feet away, a very elaborate high ropes course was spread through several trees. One corner anchor tree lay on its side, uprooted. But it was the rest of the trees that stopped me. All of the trees had been topped.

They weren’t just topped. All of the limbs had been removed as well. The trees had been turned into posts. They were sawed off just above where the highest lines were set. To compound the indignity to the trees, all of the bark was peeled off as well. Every single tree in the course, from top to bottom was a naked, de-barked, de-limbed, 25-foot-tall tree trunk.

Standing there staring, I could clearly envision the hundreds, maybe thousands, of kids, who had navigated the suspended ropes the previous summers. I could see all of the young people and their counselors milling around beneath them, cheering them on. I could feel the intensity of a young girl trying to gather her courage on a beautiful summer day and step out over the void on wobbly legs, sliding her foot out on the now trembling tight rope.

I could also see the whole course snapping, one tree after another in domino fashion, a strategic tree finally stressed to its breaking point by the weight of a single young girl.

I shuddered and managed to say, “We need to talk to Dave.”

Sarah risked asking me half way back to the office, “Why did it fall over?”

After a pause I said, “Sarah, the roots are dead and rotted away. Those - trees - are no more than big sticks stuck in the sand. Why on earth did they cut off all of the limbs and peel the bark off?” I asked.

Sarah said, “I don’t know. It’s been like that since I started working here.”

“When was that?”

“A bout six years ago. I started working here while I was in high school.”

I slowly shook my head, feeling goose bumps wash over me again.

Back at the office, Sarah found Dave, the head counselor. I couldn’t think of a more tactful way to begin, so I walked up and said, “Dave, you have to shut down the high ropes course.”

“What? Why? What’s wrong?”

“The trees are all dead and the roots have rotted away. You have been incredibly fortunate. If I may ask, why did you have all of the limbs removed and the bark peeled off?”

Dave thought for a second and said, “We have an old caretaker here who tends the grounds. He said he used to work for a logging company back in New England. Said if we removed the limbs, then there would be no risk of them falling on anyone. So we did.”

“The bark?” I asked.

“Well, the bark started to slough off after a couple of years, so he suggested we remove that as well. That was a long time ago ...” His voice trailed off.

We went inside and sat down. We discussed his trees for almost an hour. I talked about the biology of trees, explaining to him the importance of live tree roots and how they anchor a tree. We talked about how live wood heals, and proper pruning. He allowed me to come back a couple of weeks later with a tree crew and help them to set up a new course; one set amongst living trees with healthy roots. We pruned out only the dead branches overhead.

Driving back to my office after we were finished discussing specs for their new high ropes course, I thought about Dave and Sarah. Very nice people - managing all of those kids would be a challenge. I had coached some little league, but their jobs were on a whole other level. People like that always impress me. Nurses, teachers, counselors - it is a lot of responsibility.

Kids demand attention. Maybe that explains how the course had eroded into the mess I saw. It was not the first time I had heard of another ‘tree-guy’ giving bad advice. The two-hour drive back to town allowed me some time to reflect on their case.

While driving along in this pleasant spring haze, it struck me. Ignorance is not bliss. Every once in a great while I get to make a difference, and today was one of those days. I smiled to myself. It felt like a privilege.

Vic Foerster is a Certified Arborist, TCIA and ASCA member with West Michigan Tree Services, and chairperson for the Michigan Urban and Community Forestry Advisory Council. This is an excerpt from an upcoming book by Foerster entitled Only God Can.

A ropes course similar to the one in this story.

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Xytect™
imidacloprid technology

Xytect™ is a systemic insecticide that protects the vascular system of trees. It is highly effective against a broad range of ornamental pests, and can be applied as a spray, soil injection or infused directly into the tree.

INSECTS CONTROLLED: Adelgids, Aphids, Borer (including: Bronze Birch Borer, Emerald Ash Borer, Asian Longhorn, Eucalyptus Longhorn), Elm leaf beetles, Japanese beetles, Lace bugs, Leaffoppers, Leafminers (including: Birch, Elm, Citrus, Boxwood), Mealybugs, Pine tip moth, Psyllids, Royal palm bug, Sawfly larvae, Scale insects (soft scales), Thrips, Whiteflies, White grubs

<table>
<thead>
<tr>
<th>FOLIAR SPRAY / SOIL INJECTION</th>
<th>FOLIAR SPRAY / SOIL INJECTION</th>
<th>TREE INJECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xytect® 2F</td>
<td>Xytect® 75 WSP</td>
<td>Xytect® Infusible</td>
</tr>
<tr>
<td>- Contains 21.4% imidacloprid</td>
<td>- Contains 75% imidacloprid</td>
<td>- Contains 5% imidacloprid</td>
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<tr>
<td>- Labeled for foliar and soil applied systemic insect control for trees and shrubs</td>
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<td>- Labeled for all tree injection methods including M3 Infuser</td>
</tr>
</tbody>
</table>

www.xytect.com 1-877-ARBORIST

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Please circle 35 on Reader Service Card
Introducing the ALL New Generation 2

Body Designed with Relocated Rotor
Two-stage Cutting Chamber
Counter Teeth in Cutting Chamber
Built-in Recutter Bar at Discharge
Optional Bolt-in 2nd Shear Bar
Machined Bearing Anti-wrap

Low Profile Skid Shoes
Adjustable Tree-pusher Bar
Welded Claw Hooks on Pusher Bar
Redesigned Spiral Tooth Pattern
Optional Carbide Planer Teeth
Optional Cylinders on Pusher Bar

Plus: Timber Ax
Flail Mowers

Hydraulic Oil Cooler

Please circle 27 on Reader Service Card