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TCI's Version of "Back to the Future"

In my hands, I am holding the first TCI magazine ever printed. It contains the dreams of an industry—a board/staff vision to expand communication, share successes and failures, and take NAA to the next level of member service.

A lot of familiar names are throughout this edition. Walt Money provides insights into “Success in Commercial Arboriculture.” Reading through the text, there are some familiar themes—insurance, estimates, the lawn care influx, government regulation, good employees, training, profits. A page over, John Hendricksen and Bob Felix emerge from yet another conversation with OSHA. Another article expounds upon professionalism and what that means from the client perspective. Mark Tobin shares his knowledge with a colleague in a related photo. Attorney Steve Semler contributes an article on employers and strikes. Al Shigo’s new book is reviewed. Within the pages, there are also a lot of familiar names, ads and pictures of Associate Members, without whose support this dream would not have been possible. Our deepest thanks to them for a decade of contributions to the advancement of the industry!

Ten years later, this anniversary issue is our timepiece. It serves as a benchmark for how far arboriculture has come, how much things have changed and improved—in business practices, safety procedures, the use of technology and our understanding of employee work environments—and the ongoing value of working together to better the industry. TCI magazine has become the flagship publication dedicated to the commercial tree care industry. Through the generous contributions of articles, advertising and reader feedback, we have achieved this status in many countries throughout the world. TCI not only serves as a source of knowledge, it has become our marketing piece, expanding to reach tree care companies all over the world.

And yet, this issue also shows how much has stayed the same. Though our equipment improves and our clothes are different, the people with a passion for this industry are what tree care is all about. The questions we ask are still very similar to the ones we sought answers to ten years ago. Even in good economic times, the going is tougher, because the business world in which we are operating is more complicated. Our industry still has a long way to go. We need to embrace sound business practices more fully and challenge ourselves to give business management as much time and effort as we do tree care.

So, TCI leads the industry into another decade of tree care, armed with the pledge to bring you the best of business management articles, tree care information, and our love of sharing the best of all of you with each other world-wide.

Cynthia Mills, CAE
Publisher

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8 Lightning Protection: A Profitable Sideline
State-of-the-art lightning protection systems offer protection to thousands of valuable trees. This sideline business offers low barriers to entry and easy-to-learn installation methods.

Cover Photo

Photo courtesy of Independent Protection
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By John Gunnell
Tree care trucks went high-tech in the '60s.

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By George R. Pogue, Jr.
Some words of advice from an experienced buyer of used tree equipment.

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Learn to distinguish sawflies from caterpillars in pines.

NAA Forum
A new video is in the works for groundworker training.

Book Reviews

Tree News Digest
By Keith A. Regan
News, stories, clips and information on trees from around the world.

From the Field
By Doug Tucker
Words of advice from an arborist who was jolted into respecting electricity.

32 Profits in the Slow Season
The slow-down of tree work during the winter can put a crunch on revenue. As the holiday season gears up, many commercial tree care companies unhitch the chippers and take up strands of lights, supplementing regular work with holiday decorating services.

44 Tree Education & Philosophy
Dr. Alex Shigo focuses on tree education: what it is, what it can do for you and what it can do for trees.

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 National Arborist 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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Protecting Nature's Prized Possessions: Lightning Protection for Trees

By Marian Perkowski

Arborists install air terminals (points) and secondary conductors in a tree's broad canopy.
What takes nature decades, if not centuries, to create, lightning can destroy in mere seconds. Packing incredible amounts of energy (up to 100 million volts of electricity), lightning can fell a 200-year-old oak or cause irreparable damage to a young birch or stately magnolia tree.

There are few things in nature mightier than lightning. In fact, this natural force is considered by some scientists to be the catalyst that sparked the chemical evolution of life on earth. Conversely, the power of lightning can also destroy life. Hundreds of rare, historic and prized trees are destroyed or damaged by lightning strikes every year in the United States. It is possible, however, to provide protection for trees in both residential and commercial landscapes. State-of-the-art lightning protection systems offer protection to thousands of standing trees and insure their enjoyment by future generations. Lightning protection systems for trees are designed to reduce the threat of fire and explosions caused by lightning. By intercepting and directing the lightning strike onto a specified path along the tree, and guiding the current harmlessly to ground, the destructive effects of the strike are eliminated or drastically minimized.

By virtue of their height, all trees are susceptible to a lightning strike. The severity of damage to a tree struck by lightning is dependent on several variables, including the power and duration of the lightning bolt, the tree’s height, depth of the root system, type of soil, location and composition. In addition, the moisture content of the tree can affect the degree of damage. When a tree is wet, lightning tends to follow the outside line of the tree; when dry, the bolt tends to travel through the inside, creating great amounts of steam and splintering or blasting the tree apart.

According to Dr. Kim Coder of the University of Georgia’s College of Agriculture and Environmental Sciences, there are six main types of storm damage to trees. Each type is the result of a complex and interactive mix of tree problems and climate. These include:

1. blow-over
2. stem failure
3. crown twist
4. root failure
5. branch failure
6. lightning

Inherently, trees are designed to withstand the elements of nature. Lightning damage, however, is a life-threatening situation for a tree. Whatever the species, preferred lightning targets among trees are a lone-standing specimen, the tallest surrounding tree or a tall tree at the end of a row or edge of a grove facing an approaching thunderstorm.
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A lesson on lightning

Lightning is created as varying charges of positive and negative polarity build up in the atmosphere during a storm. The result is a negative discharge, or current, sent rushing toward the earth. As this downward force nears the ground, positive charges rise up to meet it. As the tip of the negative charge (stepped leader) thrusts toward the ground readying to discharge its energy, its path is erratic. Nearing the earth, positive charges are attracted by it and strain up from roof edges, trees, fencing, etc. As the path to the ground is completed, a closed circuit or lightning flash is created. The tremendous amount of heat within the bolt, along with sudden air expansion and contraction, can instantaneously splinter a tree upon impact. Once the connection is made, lightning either moves in a narrow line down the branches, stems and roots of the tree, or along a wide pathway encompassing the entire tree cylinder. Lightning destroys tissue by electrical disruption and heat. Massive root damage may occur and often goes undetected. Lightning damage can also lead to excessive water loss, leaving the tree vulnerable to destruction by pests.

When a tree is equipped with a lightning protection system, the system intercepts the bolt of lightning, channeling its energy on a controlled, isolated path. The lightning current is directed harmlessly to ground. Damage to the tree is thus drastically reduced, if not eliminated.

There are several reasons to consider lightning protection for trees. First, a tree struck by lightning can cause enormous damage to a residence or nearby structure, harming individuals within. Another consideration is the aesthetic value of the tree. It is impossible to replace the magnificence of a 200-year-old tree. In addition to aesthetic value, repair or removal costs—and replacement of a lightning-damaged tree—can be expensive ventures. As cited in the Ninth Edition of the Guide for Plant Appraisal, published by the International Society of Arboriculture, “The aesthetic values (of trees) are very difficult to determine and are very subjective. Research indicates that the value trees add to a particular property ranges from 15 to 25 percent of the total land value.”

According to the Lightning Protection Institute, a not-for-profit organization which endorses certification of lightning protection systems and installations, it is recommended that trees which have a trunk located within 10 feet of a lightning-protected building, and branches extending to a height above the building, be equipped with lightning protection. This not only protects the tree, but also helps eliminate or reduce the possibility of lightning striking the tree and sideflashing, or jumping to the nearby structure. It should be noted, lightning-protection systems on trees within close proximity to buildings or residences do not provide protection to nearby structures.

Lightning protection is commonly considered by arborists for residences, golf courses and public areas where large trees are protected in order to minimize liability risks. While a protected tree does not provide the same degree of personal safety as a protected building, it does decrease the occurrence of sideflashing and potential bodily harm. However, it is never recommended to use a tree equipped with a lightning protection system as a personal safety shelter during a storm.

Lightning protection system design

Lightning protection systems for trees contain four main components:

1. air terminals
2. conductor cables
3. connectors or fasteners
4. grounding devices

Only copper elements are recommended, as substitutes may corrode and deteriorate, compromising the system and damaging the tree.
1988 Peterbilt 377 Cat 3406B, 400hp, 9sp w/11-ton Hiab Model 260AW. 39’ side reach. $44,500

1988 Mack. DM686S. 285 hp, 6sp, 13T38 rear with 20’ bed and 7-ton TECO knuckleboom. 40’ side reach. $36,900

1987 Ford. Under CDL. 6.6 dsl, 5/2sp. 12’ flat w/4.5-ton National Knuckleboom crane. 25’ side reach. $24,500

1985 Ford F700 V/8 auto. 64,000 miles. 16-foot stake liftgate and 3.5-ton Pitman Knuckleboom. 24-foot side reach. $15,500

1992 GMC Topkick. 3116 Cat 6 speed, VST 45 Versalift. $36,900

1995 Ford F8000 Cummins diesel. 5/2 sp, 33 GVW 16’ steel flat. $24,500

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1991 Ford F700 crew cab. V8, 5sp/2sp, under CDL. 16’ wood flatbed, liftgate. $19,500

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Air terminals (rods) are designed to intercept lightning strikes and conduct the electricity to ground. Commonly referred to as lightning rods, terminals are solid and made of copper. Air terminals are commonly mounted at the uppermost extension of the main trunk of the tree and outer peripheral branches, in an umbrella-like fashion. The height and type of the tree determine the number of terminals used within the system.

Primary and secondary conductors are made of multi-strand copper cable and connect air terminals to grounds. The conductor system forms a network of conductors connecting the possible points of lightning contact, and leads the current downward on multiple paths to ground. The conductors are loosely coursed, following the contour of the tree, allowing for wind movement. In order to avoid possible injury to the root system, conductors extend out and away from the base of the tree.

Connectors are made of copper or bronze and come in a variety of configurations. The purpose of these components is to connect the grounding system to the primary conductor cable.

Grounding systems consist of metal rods, which are attached to the primary conductors, and are set at least 10 feet deep into the earth. Properly made ground connections are essential to the effective functioning of the lightning protection system.

**Installation**

Proper installation is paramount to the integrity of the system. There are currently three recognized national codes or standards to follow when installing lightning protection for trees. These standards are set forth by the Lightning Protection Institute (LPI), the National Fire Protection Association (NFPA), and the National Arborist Association (NAA). For a copy of the standards write to: LPI at 3335 N. Arlington Hts. Rd., Suite E, Arlington Hts., IL 60004 (Standard of Practice LPI-175); the NFPA at 60 Batterymarch Park, Quincy, MA 02269 (NFPA Standard 780); and the NAA at 3 Perimeter Road, Unit 1, Manchester, NH 03103. (NAA Lightning Protection Installation System Standard.)

Standing for ages, trees are a living testimony to man's past and future. These longstanding monuments to time can be destroyed in seconds. For arborists, landscapers, groundskeepers, or homeowners, the foresight of installing lightning protection systems is certainly a tangible and cost-effective way of protecting and preserving nature's most priceless treasures.

**Selling the Service**

"We do 100 to 150 installations a year," reports Joel Johnson, president of Nels J. Johnson Tree Experts in Evanston, Ill. That number has grown significantly in recent years. Some of the work is for homeowners or commercial properties, but about 85 percent are at golf courses, according to Johnson.

"We work for about 130 golf courses in the Chicago area. We have developed a good niche market," he says, Johnson's
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company services the tree needs of courses during winter months, pruning limbs and removing trees after golfers have stashed their clubs for the season. Standard tree work has served as an entry into specialized lightning protection installation for the courses. “We prune during the winter,” says Johnson. “They will call year-round for lightning protection.”

Often, the greens committee or the superintendent will decide that special trees need added protection. “A single tree can make a hole,” stresses Johnson. “They realize that mature trees are irreplaceable on the course.”

Nels J. Johnson Tree Experts doesn’t have any in-house training for installers, though Johnson insists it isn’t necessary. “It’s easy to understand. There are plenty of pamphlets and standards available,” he says. “We have several people who know how to do it and have been installing lightning protection for years.”

In fact, they have become so well known in the area, courses will place an order without competitive bidding. “We dominate the golf course maintenance field in our area,” says Johnson. “We have proven ourselves over time to be efficient, economical and professional. Courses know that.”

The process is labor intensive though. Johnson estimates it takes a three-person crew an average of two hours from start to finish, depending on the tree’s size. “Big spreading oaks may require three different attachment points,” he notes, so it’s difficult to generalize about the time involved.

Some residential property owners will use the service, though Johnson doesn’t actively market to homeowners. “We may bring it up as part of our overall property appraisals, but we don’t send out flyers or anything. We work for a lot of property appraisals, but we don’t send any in-house training for installers, though Johnson insists it isn’t necessary. According to Murphy, a commercial company’s success at selling this service will depend on its client base. “People who don’t do much for their trees in terms of maintenance won’t install protection systems. Upscale customers are more conscious of the aesthetic and monetary value of their trees. When homeowners develop the same mindset for the trees on their properties as golf courses do, they will spend to protect.”

While Preservation Tree Care doesn’t have any special marketing campaigns or brochures, they make it a regular part of property assessments. “We’ll look over the whole property and rank trees in order of importance—either on the risk factor of a particular tree or on its importance to the landscape,” relates Murphy. “Usually, there’s one significant tree on the property the owner wants to protect.”

And, Murphy points out, there’s nothing like a devastating lightning strike to alert the entire neighborhood to the danger. When that happens, “we don’t have to do much selling.”

Murphy estimates that lightning protection work is more profitable than general tree work. “Lightning protection is a cleaner operation that takes more thinking than brawn,” he says. “There’s no wood debris or chips to dispose of.”

Jim Cortese, president of Cortese Tree Specialists in Knoxville, Tenn., installs “only a dozen or so a year.” But some of them are truly impressive undertakings. For one recent job, it took almost nine months for Cortese to convince a client to install lightning protection. “What eventually sold her was that we determined it was largest red oak in Tennessee,” he says. “That tree must be 20 feet in circumference. It took three people most of the day to do the installation. We probably ended with a bill of $2500 to 3000. That’s why it took her nine months to decide,” he notes.
Even though this sideline is profitable, Cortese doesn’t push the service. “It’s another tool we have available when we are looking at a property,” he explains. “We have never been hot salesmen with lightning protection. We try to educate the public. They may not think they need it now, but they will call later.

“When you are in the business of tree preservation, and you are serious about maintaining a client’s property, you look for opportunities where lightning protection should be considered. Generally, that means a historic tree, a county or state champion, or a tree in a heavily trafficked area, such as a school,” says Cortese.

What keeps Cortese busiest isn’t selling new systems but maintaining the ones he has installed over the past 20 years. “We keep a record of all our installations and follow up with old clients for repeat visits,” he explains.

“I’ve been putting systems in since ’85. We have several hundred out that need regular maintenance. They really should be checked every five years to ensure they are still functioning. For example, we had a client whose landscapers tried to see how close they could cut to the tree. They cut through two cables that were within six inches of tree.”

Most of the problems with installation and maintenance happen on the ground, not in the tree. Cortese insists that putting the hardware into the tree isn’t difficult. He has a regular crew for lightning protection installation, some of whom have been with the company for more than 10 years.

“They learned from Robert Cripe with Independent Protection back in the early ’80s,” says Cortese. “He came in when we won a bid on a large job for a commercial development. We trained ourselves after that.”

The hard part is navigating the lines outward. Sometimes you run into gas or water lines, which you have to ground too. In Cortese’s area, limestone outcroppings pose another difficult navigational obstacle. And you don’t want to protect the tree from lightning only to kill it slowly because you cut the roots.

Most of Cortese’s business comes in after a lightning storm, but “you just never know. When the opportunity presents itself, explain the benefits to your client,” he stresses. “I suppose somebody could make a full-time living at it, we don’t. Keep quoting prices and keep looking for opportunities. Like anything, you learn the phraseology you need to sell the service to your clients. Lead them along.”

Marian Perkowski is communications director for the Lightning Protection Institute. For additional information regarding lightning protection, contact the Lightning Protection Institute at 3335 N. Arlington Hts. Rd., Suite E, Arlington Hts., IL 60004 or visit the LPI Web site at: www.lightning.org TCI

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By Ronald C. Reece, Ph.D.

Take me back, take me back, back to Bermuda. If you were there at the Winter Management Conference, close your eyes for a few seconds and remember the beauty. I now truly understand the quote from Mark Twain, “When I die, don’t bother with heaven. Send me to Bermuda.” If you weren’t there, make yourself a promise to go to the next one at Sanibel Harbour Resort & Spa! The conference provided beauty of place, friendships kindled and renewed, business ideas and important information sessions aimed at strengthening the way you do business.

The following is a reminder of the session I presented on Succession and Continuity Planning. The importance of such a process is noted by simply asking the central questions: Will my business survive transitions? How well will it survive? Human lives are fragile. Do I want my business to be just as fragile? Businesses are living organisms that grow and change. They are impacted by external and internal factors that affect their well-being. Whether publicly or closely held, all businesses need a mindful approach to succession and continuity planning (SCP).

Succession reflects the sequential aspect of transition as one thing needs to end and be succeeded by something or someone new. Continuity refers to the parts of the present world that need to be preserved in the new era. Such planning is part of working on the business not in the business. However, my experience has taught me that succession often happens by default and then there can be chaos. It may also happen by assumption or implication. The better choice is to have deliberate conversations and design of a succession approach. Also, it is really never too early to start. A prominent businessman in my hometown told me the day he was placed in his crib, his father taped a business card to the crib naming him president of the family business. Now that’s early … and talk about assumption!

There are many elements to a succession plan, but one of the most critical first steps is the survival kit (page 19). These are the critical instructions to follow in case the owner unexpectedly dies or becomes incapacitated. In that kit should be critical documents such as wills, insurance policies, financial statements, key contacts, a statement of hope and challenge, etc. Once the survival kit is in place, tell someone about it. The succession and continuity planning tree on page 16 gives a visual of the other many elements that need attention. It’s all about the transfer of knowledge, power and ownership over time. The younger generations must demonstrate the desire and develop the abilities necessary to become the keeper of the dream. The older generations must recognize that teaching is the art of assisting discovery and that it requires letting go rather than controlling. So there you have it, “the ritual dance of succession.”
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The roots of the tree represent the foundation of the business:
- Strategic Thinking
- Business Mission/Vision
- Business Values
- Profitability (Tap Root)
- Communication
- Performance Reviews
- Business Documents/Insurance
- Executive Development

We probably should add Employee Selection. With these elements in place, the business has a greater chance of surviving and thriving to a point of needing succession and continuity planning. Next we turn attention to the branches of the tree.

The various elements of planning exhibited on the branches may be the responsibility of different individuals or groups. Management succession and ownership succession have different issues to ponder and require different approaches.

Management succession focuses on critical positions in the company, strategic personnel needs and identifying high-potential future management members. Also, development and education of identified management successors is important. The SCP team needs to meet at least once a year to review management succession issues.

Ownership succession in a closely held company begins with the challenging decision to keep or sell the business. Issues of who will own it and in what proportions; when to begin transfer of stock; how the plan will be communicated and who will deliver the message are primary. Family-owned businesses add different dimensions. Sibling rivalry and parental desire to treat everyone equally are just two such dimensions. Family business is never just business. When it works, it is powerful. When it doesn’t, it is destructive not only to the business but also to the family. As a consultant to some 30 family businesses, I have worked to help the family exercise its own best judgement and capitalize on the loyalty, trust and love available to them as they make critical economic and business decisions.

In all of these efforts communication is paramount!

By now you’re saying, “Too much! Too much!” Not really!
- Use your advisors as facilitators.
- Pick your team(s).
- Use the Planning Tree as your guide.

Right now, color green the elements you have accomplished; yellow those that are in progress and mark in red those which have received no attention but need it.
- Develop a timetable.
- Remember SCP is a process, not an event.

The choice is yours—succession and continuity by default or by design. Best of luck to you on your exciting journey.

Ronald Reece is a consulting psychologist and president of Reece & Associates, in Greenville, S.C. He can be reached at 864-233-6648; E-mail: reeceassc@aol.com.

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A redesign of Bandit’s Model 1890 Drum Bandit chipper increases the throwing velocity while eliminating all blow-back from the infeed spout, common problem with many hydraulic feed, drum-style chippers. These improvements are due to a revamping of the discharge transition and the addition of Bandit’s power slot chipper housing. They provide enhanced airflow while virtually eliminating the possibility of plugging. The easy climb spring tension system, standard on the 12-inch and 18-inch units, climbs material easier while adding greater crush capacity and twice the pulling power. The 1890 is now equipped with thicker 5/8-inch knives that are 5 1/3-inches wide. They wear better and can be sharpened more often before being replaced. The 1890 is now offered with the Cummins 6CTA 250 hp diesel and the John Deere Model 6081A diesel. For more information, call 800-952-0178 or visit their web site at www.banditchippers.com.

The Ames Kodiak post hold digger Model 1709300 (right) has cushioned dual durometer grips to reduce hand stress and a pivot bolt engineered for greatest capacity and more leverage for fast, easy jobs. It comes with a lifetime warranty and features heavy-duty 12-gauge steel blades and 48-inch contractor grade fiberglass handles. Ames Model 1709400 (center) is for digging deeper holes with its tough Iwan Pattern auger and 33-inch long steel shaft. The six-inch wide auger operates as a drill and can be formidable in cutting deep down. The True Temper Level Best post hole digger, Model LBPHD, (left) has an encapsulated level and ruler measurements on one handle to improve digging accuracy. For more information write to Ames-True Temper, PO Box 1774, Parkersburg, WV 26101 or visit their web site at www.ames-truetemper.com.

Wood-Mizer Products has “raised the bar” again with the introduction of an aggressive, new industrial blade that has a conventional 1.25-inch width, but an unconventional .055-inch thickness and a .110-inch kerf. It can be used on most sawmills with 19-inch or larger blade wheels and 25 hp or larger engines. The .055 was designed for the most difficult, extreme sawing in the portable sawmill industry. Field reports from sawyers cutting large knotty softwoods show this blade has performance not matched by any blade we’ve tested. Pines and spruce from all areas of the country, as well as yellow pine down South, are much easier to cut when the .055 blades is used. For more information call 800-553-0182 or visit their web site at www.woodmizer.com.
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Vermeer Announces New Vice Presidents

Kevin Alf (L) was named vice president of the Advanced Control Systems (ACS) Product Group and corporate Engineering. In his new capacity, he identifies which electronic-based technologies to pursue, assists in building the corporate engineering group and rapid prototype capabilities and is responsible for the corporate test department.

Randy Gard (R) was named vice president of Global Planning, with a variety of responsibilities in regard to business strategies, mergers, acquisitions, joint ventures and divestitures, as well as responsible for Vermint and European operations.

Lambert’s Establishes Memorial Fund

Lambert Landscape Company recently announced a gift of $50,000 to establish the Lambert-Masterson Memorial Fund to benefit horticulture students at Richland Community College. Thomas B. Masterson (Tommy) worked with Lambert’s for 45 years until his death in 1999. The memorial fund announcement was made at a special tree planting ceremony on the Richland College campus. Masterson’s favorite red oak tree, which measures 14 caliper inches, stands 40 feet tall and weighs 15 tons, was transplanted to the campus. Contributions can be made by contacting Lynn Clare at 214-350-8350.

Davey Awards

More than 250 managers from The Davey Tree Expert Company recently gathered at the 2000 National Manager’s Meeting in Orlando, Fla., to review the firm’s long-term plan and to learn how to help the company reach its goals. Davey employees were also honored for outstanding service during the meeting. The John Davey Award of Excellence was awarded to managers who exemplify the company founder’s ideals.

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### Status of Significant OSHA-Related Legislation

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<td><strong>SBREFA AMENDMENTS</strong></td>
<td><strong>(S. 1156)</strong> Amends the Small Business Regulatory Enforcement Fairness Act of 1996; gives small business representatives more information and input into reviewing rulemakings underway at OSHA and other regulatory agencies.</td>
<td><strong>HOUSE:</strong> H.R. 1882, by Rep. James Talent (R-Mo.), Approved May 1999 by the full committee. <strong>SENATE:</strong> S. 1156, by Sen. Christopher &quot;Kit&quot; Bond (R-Mo.) and Sen. John Kerry (D-Mass.). Approved by Small Business Committee July 1999; by the Senate Sept. 28. <strong>ADMINISTRATION:</strong> Argued provisions would benefit large trade associations.</td>
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<td><strong>FAIR ACT</strong></td>
<td><strong>(H.R. 1987)</strong> The Fair Access to Indemnity and Reimbursement Act would allow small employers and labor unions—those with no more than 100 employees and a net worth of up to $7 million—to recoup legal fees if they prevail against OSHA or the National Labor Relations Board.</td>
<td><strong>HOUSE:</strong> H.R. 1987, by Rep. William Goodling (R-Pa.), chairman of the House Education and the Workforce Committee. Bill slated for vote by full House Feb. 15 but pulled at the last minute when leadership realized it lacked the votes. <strong>SENATE:</strong> S. 1158, by Sen. Tim Hutchinson (R-Ark.). Hearing held before the Health, Education, Labor and Pensions Subcommittee on Employment, Safety, and Training in July 1999. <strong>ADMINISTRATION:</strong> Opposes bill, arguing that it would render OSHA and NLRB vulnerable to lawsuits.</td>
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### DOT: Proposed Changes in “Hours of Service”

On April 25, the Department of Transportation announced proposed revisions to its hours-of-service regulations that would give truck and bus drivers more opportunity to sleep in order to prevent fatigue-induced vehicle accidents. Although the proposal focuses on the relatively high fatigue-induced accident rates among long-haul and regional truck drivers, it will impact tree care and other industries where driving is incidental to the main occupation.

In announcing the revision to the maximum number of hours commercial drivers are allowed to work during a shift, Transportation Secretary Rodney E. Slater said the change is intended to “increase safety on our nation’s highways.” The Federal Motor Carrier Safety Administration estimates that 755 highway fatalities and nearly 20,000 injuries occur each year because of drowsy or fatigued commercial drivers. The FMCSA said it believes the rule change will “reduce the acute and cumulative fatigue which appears to beset many drivers and will thus prevent a significant number of crashes and fatalities while limiting major compliance costs on those segments with the fewest fatigue-related crashes.”

Slater said the revised hours-of-service rules are a key element of the FMCSA safety action plan, which has as a goal a 50 percent reduction in motor carrier fatalities over the next decade.

FMCSA Acting Deputy Administrator Julie Anna Cirillo said the current minimum does not give drivers adequate time to eat, bathe, and conduct other personal activities and still have time for sufficient sleep.

The proposed rules would put all commercial vehicle drivers on a 24-hour daily cycle, which FMCSA said is shown in scientific research to coincide with the
My crew is the best, but even the best can get tired on tough days. "Ever since I bought my new trailer-mounted EAGLE E-47 access lift, my crews are working more jobs - and working more productively. The E-47's special EAGLE Eye monitor also saves them time by making set-up quick and easy. "My EAGLE doesn't leave the deep ruts in customers' lawns that heavier truck lifts would. And EAGLE gives me the power and option choices to configure my EAGLE lift to my type of work. "My acquisition and ownership costs are a lot less than a truck lift too. Compared to climbing, EAGLE makes the work easier on my crew."

PPE Proposal Headed to OMB

The Occupational Safety and Health Administration's proposed personal protective equipment standard is expected to be delivered to the Office of Management and Budget sometime this month. Once delivered, it would set off a 90-day review period that could lead to its publication as early as the end of summer.

The proposed PPE standard was created to establish the types of personal protective equipment that must be purchased by employers rather than by employees. The agency deadline for comments was March 31.

Many commentaries supported the basic concepts described in the proposal and praised the equipment exemptions—safety toe protective footwear and prescription eyewear. In hearings last August, representatives of the National Arborist Association testified that its members wouldn't object to paying for PPE so long as it is used and stays on the company's property. Its main concern was requiring the employer to buy personal protective equipment, such as work boots and eyewear, which the employee would use outside of the job.

Peter Gerstenberger is vice president of business management, safety & education for the National Arborist Association.
Businesses, much like people, experience various transitions during their lives. One of the most important transition points occurs when companies outgrow their one-person management styles. Since transition comes about because of gradual change—usually growth—it can be remarkably easy to overlook.

Growth can be a stressful time for a business. The day-to-day strains fostered by growth tend to obscure the longer view, including the need to convert from a one-person show to a team management style. How can a growing company recognize when it has reached this point?

No single event heralds the time for change and no helpful sign appears. The indicator tends to be a particular type of chaos, accompanied by one or more of the following characteristics:

- Employees and/or clients have to wait too long for decisions, even on minor matters.
- Decisions are made too quickly, without allowing adequate time to gather and analyze information.
- There is little follow-through, and details frequently slip through the cracks.
- Client's questions go unanswered, employee's suggestions aren't acted upon and many good intentions never get past the talking stages.
- Long-term planning is minimal.
- Short-term planning takes on aspects of crisis management.
- Overall, the company lacks a feeling of direction or momentum.

All companies suffer from some of these symptoms from time to time. But when they become part of the normal way of doing business and aren't just a matter of "having an off day," change is needed.
The one-person show

The most obvious drawback of a one-person management style is surprisingly easy to overlook—the company is limited to the experience, knowledge and skills of one person. No matter how effective a manager and how skillful an arborist, there is still just one person.

In addition, a heavy dependence on one person to make all decisions is unhealthy. Typically, only one point-of-view is involved in weighing choices. Other perspectives and expertise aren't considered for various reasons, including lack of time, opportunity or interest. There also isn't room for the business to grow.

In many tree care companies, considerations of growth aren't a factor. With a shortage of skilled employees, the challenge becomes optimizing the profits of the existing business. The owner may be interested in focusing more on particular geographic areas or types of clients or may want to develop more off-season work. Like growth, all these considerations are limited by a one-person management structure. And though the owner may not intend for the business to grow, companies often get into a growth mode by themselves. This unplanned growth usually translates into a crisis.

With one-person management, that person is usually heavily involved in day-to-day operations of the business. Micro-management becomes the management style. Although a strong case can be made for managers staying in touch with the everyday activities, there's a big difference between being knowledgeable about business operations and spending inordinate amounts of time in the trenches getting the information firsthand. It's good to pitch in when there's a problem. It's good to have that first-hand knowledge of everyone's duties and activities. But when a business reaches a certain size, day-to-day details are no longer the primary job of the owner, who should be spending time on marketing, financial management and long-range planning.
The “happy family” style of management

Small companies tend to have relatively stable core groups of employees, and these workers are often encouraged to feel that they are part of a “family.” Small businesses, especially tree businesses, do tend to have a different culture and atmosphere than larger companies. Employees are less isolated since they work in crews together. Job descriptions and territories tend to be less rigid, and employees can have a range of responsibilities that might involve several people in a larger business. At least in theory, there is more collegiality among employees.

However, the “family” structure in a business can be very patriarchal, with authority and decision-making centered on one person. And, just as families can become stifling if parents are reluctant to give children any autonomy or responsibility, the family atmosphere within some small companies can be equally suffocating.

Taking the first step

The most significant step you can take as an owner toward team management is to decentralize decision-making as much as possible and create another level of responsibility. In larger companies this level is referred to as middle management. In smaller companies, it might mean investing more power in crew leaders or foremen.

Of course, stepping back and letting others make decisions doesn’t come naturally to many small-business owners, who have been running their own shows for years. Owners often fear that relinquishing their authority is the first step on the road to “management bloat.”

The fact that many business owners started their own companies to get away from the more rigid corporate structure of larger landscape or tree care businesses makes them understandably apprehensive of creating similar problems within their own businesses. This may be less true in the tree care industry than others; even so, for many people expanding the management structure (and even the term “middle management”) has negative overtones.

Increasing the management component won’t necessarily create management bloat if the managers are productive. But what constitutes productive use of middle management? The same elements that facilitate a transition from a one-man show to team management work here. These include:

1. Middle managers should have well-defined authority and responsibility. If not, all that’s happened is that management has specified a crew of helpers. This helper syndrome can be demoralizing and detrimental to everyone, especially the helpers. With these supposed managers essentially at someone else’s beck and call, turnover is usually high. Furthermore, their lack of any real authority soon clogs the company’s operations. Little has changed. One person is still making decisions, but bureaucracy has increased.

2. As much authority as possible should be delegated to middle managers and employees lower in the company hierarchy. If this cannot be done, a mechanism for employee input is essential. Not only does this change the pattern of all information being “owned” by the person in charge, but employees often pick up valuable information and can contribute worthwhile suggestions.

3. The authority to make decisions that affect clients should rest as closely as possible with those who actually deal with them. If the business has grown too large for the owner to be involved with clients, some sharing of management responsibilities is absolutely essential.

4. Decision-making authority must be real and significant. In a company with a $250,000 budget, a manager who has decision-making authority on matters involving $200 or less doesn’t have any authority at all. The tendency to keep a tight grip on the purse strings is common among company owners, and it’s probably the biggest stumbling block in the transition to team management. Many entrepreneurs are fairly comfortable with decentralized decision-making, as long as the decisions don’t involve money. But that eliminates about 95 percent of decisions!
Other steps

Decentralizing decision-making may be the most significant step in making the transition to team management, but other actions are also needed. The business needs to address the limitations that stem from having only one person’s ability, expertise, training and skill to call upon.

Consider utilizing outside professional help. Seek the advice of accountants, financial managers, insurance consultants, computer experts, marketing managers, and whomever else it takes to give your company the expertise it needs. Keep in mind, though, that if decisions remain centralized, an “information log jam” is inevitable. Owners often split management duties by keeping tree care aspects under their control and hiring someone else to handle the business side. It bears repeating, however, that the effectiveness of such an arrangement depends on whether the business manager has a considerable degree of autonomy and authority or is just another employee carrying out orders.

Making the commitment

The transition from a one-person show to team management doesn’t happen overnight. It requires patience and perseverance, because changing the way people think and their work habits takes time. Finding qualified managers can be a time-consuming and lengthy process. Employees may need retraining or additional education to enable them to make certain decisions. And of course, there’s still a business to run while all this is taking place. But the results are worth the effort. When you expand the range of management time and skill in your company, you multiply your firm’s potential, as well as the potential of everyone in that business.

Mary McVicker was a tax attorney before leaving to teach and write. She has been a small-business consultant and freelance writer in Brookfield, Ill., for more than 16 years.

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Reawakening Professional Integrity

The start of the new year has come and gone, and our industry has passed a chronological milestone in its development. Arboriculture has been a recognized profession for nearly 100 years now. A few weeks ago, however, a situation occurred in a local county park that I found particularly disturbing for our profession.

How many other arborists have encountered similar situations, which so distinctly underscore just how far we still need to go as professional arborists?

As an ISA certified arborist for a county in southeastern Pennsylvania, I am responsible for the health and maintenance of all trees on more than 2,000 acres of public parkland. Recently, a major utility line-clearance company was contracted by the local utility provider to clear vegetation beneath and around major transmission lines running through one of our county parks.

I met with the line clearance foreman one morning to review all of the clearing work. I had no problems with the foreman’s pruning and removal plans; I only requested that the climbers not use spikes on trees to prune, in accordance with ANSI A300 standards. The foreman informed me that his crew did not use throwbags or footlocking, nor did they have a bucket truck. Therefore, they had to use spikes. The foreman assured me, however, that his crew would use ladders so that the lowest 20 to 30 feet of the trees would not be gaffed.

You don’t need to be Sherlock Holmes to figure out what happened next. When I inspected a handful of pruned American sycamores after the clearance crew had left, each tree had been spiked from the base to the top. Irate did not begin to describe my reaction. I immediately phoned the utility company, as well as the national and the regional headquarters of the company, to express my dismay.

We all know from ANSI standards and from Dr. Alex Shigo’s *A New Tree Biology* that “Spikes hurt trees, there is no doubt about it ...” Good arborists don’t spike trees to prune. Good arborists don’t top trees, either. We’ve known since 1907 that topping is “the work of ignorant tree men,” as stated in John Davey’s *The Tree Doctor*. And we’ve known since we were old enough to reason that we shouldn’t make promises that we can’t keep. Good arborists, and good people, don’t lie.

In this new year we need to reawaken a somewhat old-fashioned concept—professional integrity. We, as arborists, need to uphold our standards—both professional and moral—for the betterment of our industry and our communities.

Perhaps 100 years from now, both arborists and the public will consider the practices of spiking (to prune) and topping to be as detrimental as the spraying of DDT.

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Profits in the Slow Season

By Colleen Heraty

Americans spend millions of dollars on Christmas decorations each year, and tree care companies across the country are looking at the holiday season in a whole different light. A growing number of businesses are implementing new services to increase their profits, keep employees year-round, create new customers and provide existing ones with a new service. And, the future of light installation is looking bright.

T'is the Season

Holiday decorating can turn a company completely around. The window for Christmas light installation is longer than people think, spanning from mid-October to the end of January, although the busiest stretch may not begin quite that wide for every business. Since Christmas comes every year—unlike an ice storm or insect infestation—the holiday season allows for a predictable, repeat service to provide customers. It also guarantees a cash flow for seasonal businesses that traditionally worry about running out of work in winter months. Also, setting up work for holiday lighting can provide exposure and a chance to gain new customers for future tree work.

John Wright, assistant manager with The Davey Tree Expert Company in Washington, works on the lights at the Mormon Temple.

How to set up and profit from installing Christmas lights during the off-season.
A New Market

Customers for Christmas lighting are often so satisfied with lighting work that they become approachable for tree care work in the coming spring months. Even smaller residential jobs can get a tree care company's name into a neighborhood it could not break into before.

As the holiday season gears up, many residential crews with The Davey Tree Expert Company park the mowers and chippers and take up strands of lights. The slow-down of tree and lawn work during the winter can put a crunch on revenue. Several residential offices ease the burden by supplementing regular work with holiday decorating services.

For example, the Washington residential office is one of several that extends the work season by decorating the grounds of the Mormon Temple. The annual tree display, as well as a live nativity scene that is in place from Thanksgiving to the end of December, brings thousands of visitors to the property.

District manager Chris Klimas has a two-person crew and a bucket truck at the site for most of October for set-up. All of the trees at the Visitor's Center on the temple grounds are decorated in October so that they can be tested during November and ready for display by Thanksgiving.

"The truck, which is parked on-site for a month, is a great billboard," says Klimas. "It's better than the yellow pages for getting our name out there. There's nothing like a clean truck and uniformed crews to project a professional image. Winter decorating is an opportunity to bring Davey's capabilities to the attention of the public and it helps us at a normally slow time of the year."

In addition to showcasing the Davey name, removing the lights in January extends the number of hours during a slow time. The take-down requires 250 hours of work.

For the last five years, Davey's Akron office has been involved with a special tree-lighting project at the Children's Hospital Medical Center of Akron. District Manager Gordon Matthews reports crewmembers spend one day decorating a tree at the hospital.

"We don't actively approach people for holiday work," Matthews notes. "But this is something that the hospital approached us about several years ago. We return year after year because it's a nice thing to do for the community and the kids."

In the Cincinnati suburb of Terrace Park, the Davey residential office installs lights on a large spruce in the village center. The office helps with the holiday-tree lighting as a public service because the community is one in which Davey works frequently.

"We work for many of the homeowners in Terrace Park," says District Manager Bob Vuotto. "So we like to help them out at the holidays. It promotes the Davey name and eventually leads to more work for us."

Mike Schwartzkopf, sales manager for Oil Capital Tree Service in Casper, Wy., says that people interested in holiday
lighting almost always need tree care. This helps the business pick up new clients, especially in newer neighborhoods. "People with new homes and new trees don't realize that they need anything at all. We can tell them about tree care while we're there," he says. "Not only does this service help us pick up new contacts, it keeps us in touch with regular clientele as well. So, if we see a problem with someone's trees while we're out there, we can talk about it then."

The ability to keep a workforce year-round is the leading factor that led Schwartzkopf to involve his business with a holiday decorating service. Employees help out with equipment maintenance during this time also. Once employees have been trained, they love it because it's fun and easy, he says. The success enjoyed by tree care companies in this field is based on a company's ability to retain loyal personnel, expand a customer base for tree care services and generate cash flow in the slow season.

When Schwartzkopf decided to enter this sideline business, he opted to purchase a franchise from Christmas Decor Inc., in Lubbock, Texas. Founded more than 14 years ago as an add-on business for a Texas-based landscape company—Quality Lawn Care Corporation—Christmas Decor's franchises have spread across the country.

Rather than simply put lights in the top of the tree, Schwartzkopf installs entire displays. He also wanted to be able to draw on the experience of an established company, taking some of the guesswork out of what to him was a new endeavor. Being a franchisee makes selling, installing and time management much easier, he says. Schwartzkopf adds that whenever he has a question about a new product or marketing technique, the company's Intranet service for franchisees comes in very handy.

"You can see your results up there that evening," says Schwartzkopf. "Everything is custom fit to the home, cut perfect. It's beautiful."

Employee Morale and Teamwork

Business owners are not the only ones to reap the benefits from holiday decorating. Employees can benefit from more hours, increased paychecks and instant job satisfaction from the work they create. "Some employees really do enjoy the break and change of tasks," relates Tom Tolkacz, president of Swingle Tree Care Company in Denver, Co. "Cross-training brings value to the individual and the company, so we encourage it. And the system is relatively easy to train most field level employees."

Tolkacz admits that some employees prefer not to do it. "They are arborists,
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Swingle Tree became involved with Christmas Decor four years ago. The key to holiday decorating, according to Tolkacz, is that it can be a "plug-in profit" system for a very competitive cost. For the past three years, holiday decorating has been a key in Swingle Tree's profitability, allowing it to keep people employed full-time and recruit new employees during November through March, which it could not afford to do in the past. The decorating business fits into what is traditionally their slow cycle for tree work.

"I believe the service can grow to whatever limits a company wants," insists Tolkacz. "The need is greater than the suppliers at this time."

The return on investment—if you have infrastructure in place—is very strong, says Tolkacz. "Customers generally love this service far more than many other non-visible landscape services offered. You gain customers for your core businesses."

Tolkacz offers a cautionary note to company owners looking to jump into this business. He stresses there is a difference between work done right and minor mistakes that will hurt your reputation and your bottom line. He warns business owners to be careful before they rush into such a venture.

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child,” he says. “Honestly, it’s great from a revenue stream standpoint but our employees go hard for seven to nine months. He advises:

- training;
- organization;
- inventory control.

Tolkacz explains that if a company moves beyond installation of lights, it becomes a “parts and pieces” business. That makes training and organization vital. If you don’t watch stock, you will not make money. If you do it wrong, it shows immediately. Future issues in this business may include grasping and managing replacement costs and systems for products as they get older, offers Tolkacz.

Chuck Irish, president of Chas. F. Irish Company in Armada, Mich., says that the current business economy for Christmas decorating is unbelievable. “People may spend $100 to $20,000 on a residential job for holiday lighting,” he notes. “People spend freely.”

Irish, who purchased a franchise two years ago, says the addition has provided his business with quality products that are not available to the general public. Irish, too, warns company owners to be sure of what they’re doing. “This is a full-time business. If one were to get in it half-heartedly, it could ruin your reputation. Do not oversell or make promises you cannot deliver. Quality work will get you future sales in tree work.” And clearly, a less-than-professional job will damage sales of future tree work.

Many business owners claim that this is the most enjoyable service they have ever provided in the off-season. Being able to see the results of your work instantly can be very rewarding. And, people are able to tell the difference between a professionally decorated landscape and one installed by a homeowner.

“Christmas lighting is contagious,” says Christmas Decor President, Blake Smith. “It’s a big business. The more people light, the more people light.”

Colleen Heraty is a freelance writer for the green industry. She may be contacted at: colleenheraty@yahoo.com.

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Be Specific!

By: Jeffrey Lee, Branch Management, Riverside, CA (909) 319-7003
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The Widow Carter peeked innocently from behind her lacy curtains to see the crew of Big Al Fontaine and his number one man, Max Bunyan, working at a feverish pace to remove (in pieces) the colossal tree in her front yard. Suddenly, high above, an unidentified object was hurling itself to the ground with what looked like a rope flailing behind it like a contrail. Max and Al scattered like roaches in a lighted room to escape the comet-like object. It was too late for NASA and the armed forces to help this befuddled pair. The problem was closing distance, fast!

Funny as it may seem, accidents like these occur long before the actual incident. Hardware designed for climbing or rigging have many similarities. With so much to choose from it may be difficult to determine the difference and make the right purchase.

There are 4 basic components for a successful rigging system.

1. **Rope**-Based on the ANSI standards, there is no specific minimum tensile strength for lowering line. However, there is one for climbing (5,400 pounds). Use your experience and job knowledge to determine what style and diameter of rope works best for you.

2. **Pulley**-This one can be mind-boggling! Again we have tons of styles and applications for this little marvel. Discover the limitations of each type and use them accordingly. Try not to get fooled by the trendiness of a certain model if its specific application is for climbing. The most common application is to anchor a pulley as high as possible in the tree with a sling or other false crotch method, then install a lowering rope.

3. **Carabiner**-This gadget has come a long way baby! Formerly and currently used in the mountaineering and rock or ice climbing world, tree trimmers have found many outstanding uses for this connecting device. Once again, be careful! The standards for lowering and climbing are very different, check the limitations before including this hardware into your game plan.

4. **Friction device**-Now, we are replacing the ol’ “how many wraps do ya want me to take” concept of slowing the descent of a bone-crushing “biscuit.” Again, many forms and concepts have come alive and all work well as long as used within the intended application. Friction devices are not only for lowering.

It could get a little scary if you are standing there holding a rope watching your lowering system come apart while a gigantic hunk of wood makes its way to the earth’s surface. Here’s an easy one to remember: climbing equipment is for climbing; rigging equipment is for rigging.
An educated homeowner would probably recognize the potential high risk of failure of such a tree, and have something done about it. It is the responsibility of tree care professionals to help educate customers about the care of their trees.

Tree Education and Philosophy

By Alex L. Shigo

Humpty Dumpty said a word means only what he wants it to mean. Socrates, a great philosopher, said, just tell us what you want your word to mean. And Voltaire, another great thinker, said, when we know what you mean by your words, arguments and misunderstandings will seldom happen. So be it.

Just the facts

Philosophy is a delightful trip around a circle. Philosophy is about thinking.

Thinking is a mental process where experiences, old thoughts and ideas, facts and other stored information are connected in ways that result in some new thought or idea.

Trees are superior survival organisms. They live longer, grow taller and become more massive than any organism ever to inhabit earth. Trees do demand some respect. This means trees have dignity.

Education is a learning process. Learning leads to increased knowledge. Knowledge is the amount of information gained. Intelligence is the capacity to gain information. Wisdom is the use of information in ways that ensure continued high-quality survival.

My objective in this brief essay is to focus on tree education: what it is, what it can do for you and what it can do for trees.
Training and Educating

Trees are beginning to receive some respect worldwide. Not much, but some, and that is better than the way it was in the past. Now, I believe, it is the responsibility of people who care for trees, and about trees, to keep this movement going. The more you learn about any subject, the better the chances are for regulating the direction of the subject or if that is not possible, then for predicting with high probabilities the way it will go.

Training to deal with trees has far exceeded education about trees. Training is wonderful. However, training without educating leads to robots. At the same time, education alone leads to waste. Training and educating are twins; both are needed. Now!

Some people are using the words “education about trees,” but I don’t know what they mean.

Teachers teach. They try to get the mental “engines” started. They stimulate you.

To keep the “engines” going, students must be disciplined enough to keep adding more information to the mind. The adding process is motivation. Think of your car. The key connects the battery and starter. Once the engine turns over, it begins to run on gasoline. Teachers are batteries. Gasoline, or self-discipline, keeps the system going—motivation.

Why do you need to know this stuff? Because decision making in the field is the “name of the game.” People who can make more correct decisions faster have a better chance for higher quality survival. To lecture from the stage about trees and treatments is easy. When you are outside with the trees, it is not so easy. There are always some complicating constraints such as time, schedules, weather, personal health, breakdowns, regulations, complaining customers and the list goes on and on. You never know what you will face until you are out there. Still, you must make some decisions and do the job, or you will soon be out of a job.

An Example: Stress

Trees are living systems. Every living system will do something when its survival is threatened. Trees are systems that came from genetic codes. The systems do have limits. When any agent causes the system to operate near its limits, then the system becomes stressed. When the potential survival-threatening agent continues to exert a force, then the tree system could go from stress to strain. Any system is threatened when it is forced to operate near its limits. When the threatening force is continued, the likelihood of the system stopping increases.

In nature, there are two major types of stress. The most life-threatening type deals with the second law of energy flow. The law states that every system must have a continuous supply of energy to remain in an orderly state—healthy. As energy input decreases, the likelihood of operating near the limits increases. Call it primary stress. Because trees are living systems, they must maintain a continuous flow of energy. Trees burn glucose to release energy to power the forces of life. This is the same for humans and other life forms. When energy begins to become limiting, the system

The grass is very green. The tree is dying! If trees are wanted on such a site, they should be species that can tolerate lots of water.
begins to operate near its genetically designed limits.

There is no known way to feed a tree in the sense of adding an energy source. Food is a substance made up of elements essential for life and an energy source. Animals can be fed. Trees get their energy by a process that traps the energy of the sun in a molecule called glucose. Glucose is made as chlorophyll and stimulated to form ATPs that later power the formation of glucose.

The process of trapping the sun's energy is called photosynthesis. When the process does produce glucose, some is used for metabolism, some for structural parts and some for storage.

The stored energy is in a form not soluble in water; either as starch, oils or fats. The stored energy is used to start new growth when the next growth cycle starts and for defense. When stored energy reserves are low, defense is low.

So, what can be done when a tree is energy stressed? You cannot feed it. If you add fertilizer (which is not food), the nitrogen will cause the already low supply of energy reserves to be lowered all the more as the nitrogen combines with the stored carbon to form amino acids that, in turn, lead to increased growth. The new growth will be defenseless. And the insects and microorganisms apparently can detect this. They attack.

The story goes on. There is much more, but my point here is to show how one of the major problems facing trees—stress—depends on education. The simple answers today deal with adding all kinds of stuff that may give the illusion of short-term benefits. In the end, I believe, many of these treatments may add to the problem.

Before I leave the subject of stress, I should say that secondary stress is caused when substances and conditions essential for life are at extremes; too little, too much. These secondary stress problems can usually be treated by adjustments of substances and conditions.

**Education is the key**

Stress is used here only as an example of why education about tree biology is so important. Of course, much more needs to be given about the subject of tree stress. But, for now, here are some brief comments about what should be done. First aid for stress means keeping the tree safe and stopping the stress agents. Keeping it safe could mean removing the target, bracing the tree, or removing parts or the entire tree. Before you can reduce or stop the agents or conditions causing the stress, you must know what they are. Tree biology again.

After first aid, start a long-range program of correct tree care that includes mulching, pruning, watering, fertilizing and probably much more. Decisions for all treatments, especially for dose, should be based on a sound understanding of tree biology.

Trees do have dignity. They should get more respect. Respect starts with an attempt to understand. Understanding is about education. So, maybe we are back to the beginning ... A trip around a circle. Is that philosophy?

Dr. Alex L. Shigo is owner of Shigo and Trees, Associates in Durham, N.H.
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Use of chain saws in trees should only be done by professionals with specific training.
I have been active in the green industry for almost 50 years, and I have made more sales calls than I care to remember. Yet I was nervous about going back to school, if only for an hour, to talk with a high school guidance counselor. In my mind it was a sales call, and a cold call at that. I wanted to find out what to do to encourage graduating seniors to buy into a fantastic career choice—the field of arboriculture. I had no idea what to expect.

I've written articles and given speeches stressing that our industry needs to concentrate on bringing new people into the profession of arboriculture and stop hiring from each other. We need to start thinking about aggressively recruiting at the high school level. I realized just talking or writing about this was not going to make it happen. I had to find out how to reach this potential source of employees in the high schools.

Armed with my convictions, I called a local high school, asked to speak with a guidance counselor and was connected to Donald Spieker. I explained I was on a fact-finding mission to enable me to write an article that would encourage companies in the green industry, arborists in particular, to start recruiting at the high school level. I wanted to shed some light on what companies could expect. He was most enthusiastic and we established a time to meet. I should have known from his enthusiasm on the
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telephone that I was going to be pleased with the meeting. I was.

I gave him copies of the new recruiting brochure, "Arboriculture Careers," developed by the National Arborist Association (NAA) and the video, "Careers in Arboriculture," developed jointly by the NAA and the International Society of Arboriculture.

I briefly outlined the career advantages the industry had to offer:

✦ a variety of career paths open to individuals who apply themselves to education and on-the-job training;
✦ a person could pursue production, supervision, sales, general management, even ownership. Nothing is a dead-end in the field of arboriculture;
✦ the opportunity to change career paths yet stay in the same industry—even with the same company;
✦ always something new to learn regardless of what specific career path an individual takes.

In addition, I explained that I wanted to find out what typical high schools did in the way of career guidance. What are schools doing to assist graduating students exploring career possibilities?

Spieker proceeded to make my day! He outlined the demographics of the area and its impact on the students. St. Michaels Senior High School in Maryland is a regional high school serving a large geographic area. The county is one of the wealthiest in the United States and some of the residents live in waterfront estates or commute to Washington, Baltimore or Philadelphia. Many of these families send their children to boarding schools or private day schools.

The public high school's student body comes from families who make their living off the Chesapeake Bay by fishing, crabbing and clamming. Diminishing natural resources in the bay make following the career choices of their fathers and grandfathers an unlikely option. Since there is little industry in the county, the school is faced with the challenge of preparing students to make a living on land, perhaps in a different location.

I was immediately impressed. Here was an educational institution concerned with turning out marketable graduates who are willing and able to make their way in a changing environment. What a refreshing concept after all the negative articles and debates at state and federal levels about our failing educational systems.

Spieker said the school organized field trips to local businesses, allow-
ing students to familiarize themselves with specific trades and professions. One field trip to a five-star inn had resulted in two students attending culinary schools. Because of student interest, the high school had altered its curriculum to enable students to prepare for entry to culinary schools if that was their chosen career.

The school administration encourages businesses to become involved in Job Fairs and to set up internships for interested students. Some unpaid internships last a few days, others might last weeks with the students earning wages. Spieker assured me that this was happening all over the country.

His statement reminded me of a telephone conversation I had a few years ago with a counselor at a small regional high school in northern New York. She’d said some trade organizations put on dinners, brought in speakers, even showed films demonstrating the career possibilities of their professions. Although she didn’t have statistics for the number of students who entered the trades represented at these meetings, she did say one thing that stuck in my mind. “Whether interested in a career or not, the students come away with a better understanding of what is involved in the particular trade or profession.” I have to think that exposure to career possibilities in arboriculture may pay unknown dividends for years.

Everything Spieker told me until this point had been positive, but he then noted the downside. Of the high school population, 60 percent go to a four-year college or university, 20 percent to a two-year community college and 8 to 10 percent go into the military—leaving only 10 to 12 percent available for immediate employment consideration. But I still am optimistic. If I hire only one student from each graduating class, even one every sec-
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ond or third year, I can continue to grow my business.

I asked if sending TCI magazine to the school library would be a good idea. He thought a magazine subscription combined with the brochures and VCR tapes would establish communication and serve as an ongoing marketing and public relations effort that should increase students' awareness of the benefits of a career in arboriculture.

As an industry, we don't wait for clients to come to us to buy our services. Why then should we expect the next generation to seek us out? The broad field of arboriculture has tremendous career opportunities. We need to communicate with potential arborists and sell them.

Before we concluded the interview, Spieker suggested that we give an overview presentation about the field of arboriculture, followed by more specific information about the step-by-step information students in an apprenticeship program would need to master. There are always a few who go on to college with no clear idea of what they want to do. He suggested providing information about the availability of advanced educational opportunities, two- or four-year colleges that specialize in the field. This would widen the number of students available for ultimate employment.

Driving back to my office, I wondered how many companies in our industry have a step-by-step absorption and apprenticeship plan. Think about it! As a newcomer to the working world, would you feel more inclined to consider starting a career—a profession—if the firm or the industry had a step-by-step program describing what you would need to learn and the skills you would need to master? More importantly, would you feel more comfortable about making a choice if you had an outline of the various career paths that were ultimately available to you?

I spent just 35 minutes with the high school guidance counselor and I think I learned more than he did. Surely every company in the industry can spend an hour dropping off Careers in Arboriculture brochures and videotapes to the counselors at their local high school and arranging to have TCI magazine sent to the school library. Let's start marketing the opportunities of our career to the next generation.

Howard L. Eckel is an Associate Member of NAA, and a member of ISA. He is the principal of a management consulting and business coaching group to the green industry. He draws on over 45 years experience and was formerly executive vice president and operations manager of Davey Tree Expert Company. His E-mail address is hleckel@expresshost.com

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A love of trees and a desire to know more about tree work attracted a dozen to Ohio last April. The reason for their springtime journey? ACRT's Basic Arborist course.

ACRT's Senior Instructor, Peter Dubish, led the students through work skills training, beginning with basic pruning techniques and culminating with the take down of a 75-foot green ash. The 26-inch DBH tree, located in a public park in Cuyahoga Falls, had a hollow core, making it a definite hazard.

The 12 students attending this class represented a real cross-section of "tree people." Brian Aden, for example, is the arborist for the Denver Zoo, a 95-acre facility with about 800 trees. Aden said he hadn't been able to reach some trees with a bucket truck, so he was unable to care for them. With the skills he learned in this class, he can now climb those once inaccessible trees.

Don Crouch is a maintenance worker at Sleeping Bear Dunes National Park in Michigan. He, too, had used a bucket, but

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TREE CARE INDUSTRY - JUNE 2000
had never climbed before. Though he is still not as fast as he would like, the basic skills are there now, which is what he and the park want. He is confident that speed will come with practice.

"I really appreciate the fact that Peter emphasized safety so much in the class," Crouch said.

Chris Brown owns his own firm, Agape Tree, in Detroit, Mich. A member of the National Arborist Association, he heard about the class from the NAA. In addition to learning in class, Brown discovered ACRT’s free Job Bank program. He hopes a trained urban forestry or Job Corps graduate or two will be interested in working in Detroit.

Mac Grimes of Tupelo, Miss., is pleased to be able to climb now. He has been using a bucket to trim street trees and do most takedowns. However, his crew also takes care of the cemeteries in Tupelo, some of which contain hazardous trees that have been inaccessible with a bucket truck. Now Grimes can give these areas the attention they need.

Tracy Wyman and Mike Denis are partners of Denis-Wyman, Inc. in Vermont. Wyman does most of the ground work and Denis’ main job is climbing. Wyman feels very strongly that he needs to be able to keep the climber safe, and being able to climb is part of that safety plan.

Gary Lindley of Big Beaver Tree Service in Hobart, Ind., also attended this class. He is eager to get more climbing experience and put this knowledge and skills into practice. Other attendees included Lary Kuntz from the University of Missouri at Columbia, Ryan Maffitt of John’s Landscaping and Tree Service in Ohio and Paul Brink from New York.

All attendees received their Basic Arborist certificates upon completion of the course. Several are looking forward to coming back for an Advanced Arborist class or one of the electrical hazard safety training classes.

Lynn Kindsvatter is vice president of training at ACRT, Inc. She can be reached at 1-800-847-3541 extension 211 or by email at lynnk@acrtinc.com.

Chris Brown owns his own firm, Agape Tree, in Detroit, Mich. A member of the National Arborist Association, he heard about the class from the NAA. In addition to learning in class, Brown discovered ACRT’s free Job Bank program. He hopes an ACRT-trained urban forestry or Job Corps graduate or two will be interested in working in Detroit."
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Events & Seminars

June 2000
Tree Management to Prevent Storm Damage
Four Locations: Marquette, Gaylord, Grand Rapids, Detroit, MI
Contact: 517-482-5530

June 2, 2000
Ontario Shade Tree Council
Ensuring the Future of Heritage Elms
University of Guelph Arboretum
Guelph, Ontario
Contact: 416-631-8111

June 3, 2000
NJ Society of Certified Tree Experts
8th Annual Educational Seminar and Exam Preparation Course
Contact: 888-873-3034

June 8, 2000
National Arbor Day Foundation
Hazard Trees Seminar
Maple Ridge Lodge
Cincinnati, OH
Contact: 402-474-5655

June 10, 2000
PlantAmnesty
Pruning and Landscape Renovation Workshop
West Side of Puget Sound
Contact: 206-783-9813

June 11-13, 2000
American Phytopathological Society
The Ecology of Urban Soils: Designing & Managing Soils for the Living Landscape
Radisson Hotel
St. Paul, MN
Contact: 651-454-7250

June 16-19, 2000
Chemical Producers and Distributors Association (CPDA)
Annual Meeting
Banff, Alberta, Canada
Contact: 703-548-7700

June 17, 2000
ISA—New Jersey Chapter
NJ State Tree Climbing Championship & NJ Arborist Picnic
Contact: 732-462-7278

June 17, 2000
ISA—NY State Arborists Chapter
2000 NYSA Tree Climbing Championship
Burke Rehabilitation Hospital
White Plains, NY
Contact: 518-453-6461

June 17-20, 2000
ISA—Florida Chapter, and others
Trees Florida 2000 Conference
Westin Innisbrook Resort
Tarpon Springs, FL
Contact: 407-872-1738

June 22-23, 2000
Northeast Shade Tree
Tree Autopsy and Dissection Lab
Presented by Dr. Al Shigo
Portsmouth, NH
Contact: 603-436-4804

July 20, 2000
Connecticut Tree Protective Association
Summer Meeting
The Farmington Club
Farmington, CT

July 22-24, 2000
International Lawn, Garden & Power Equipment Expo
Kentucky Exposition Center
Louisville, KY
Contact: 800-558-8767

July 27-28, 2000
Interstate Professional Applicators Assn.
Summer Board Meeting
Double Tree Inn
Pasco, WA
Contact: IPAA 360-886-9076

July 28, 2000
 ISA Certified Arborist Exam
Fort Worth, TX
Contact: 512-451-7363

July 28, 2000
Longwood Gardens, Morris Arboretum, and PA Horticultural Society
Conference on Woody Plants
Swarthmore College, PA
Contact: 610-388-1000

July 29, 2000
Landscape Contractors Association
Certified Landscape Technician (CLT) test
Agricultural History Farm park
Derwood, MD
Contact: 301-948-0810

August 8-12, 2000
Association of Professional Landscape Designers (APLD)
2000 Summer Conference
Toronto, Ontario, Canada
Contact: 630-579-3268

September 12-13, 2000
MFPA Summer Meeting
Camp Brighton, MI
Contact: 517-482-5530

September 13, 2000
VA Tech Hampton Roads Ag. Research & Extension Center
25th Annual Field Day
Virginia Beach, VA
Contact: 757-363-3906

September 22, 2000
ISA Certified Arborist Exam
Waco, TX
Contact: 512-451-7363

September 25-27, 2000
ISA—Pacific Northwest Chapter
21st Annual Training Conference
Boise, Idaho
Contact: 503-874-8263
September 26-27, 2000
National Arbor Day Foundation
Trees, People and the Law Conference
Arbor Day Farm/Lied Conference Center
Nebraska City, NE.
Contact: 402-474-5665

October 1-4, 2000
Society of Municipal Arborists
Year 2000 Annual Conference
Holiday Inn South
Lansing, MI
Contact: 517-482-5530

October 6-7, 2000
Emerald Expo
Stadium Exhibition Center
Seattle, WA
Contact: 877-473-3655

October 6-8, 2000
Student Society of Arboriculture
5th Annual Conference and Job Fair
Camp Tahigwa
Northeast Iowa
Contact: twalsh@uwsp.edu

October 9, 2000
Pennsylvania State Turfgrass Foundation
26th Annual Western PA Turfgrass Tournament
Wildwood Gold Club
Allison Park, PA
Contact: Not Available at Press Time

October 12-13, 2000
Northeast Shade Tree
A New Tree Biology, by the Book
Presented by Dr. Al Shigo
Portsmouth, NH
Contact: 603-436-4804

October 13-14, 2000
Plant Health Care, Inc.
Plant Biology Workshop
Frogmore, SC
Contact: 843-838-7506

October 18-20, 2000
Interstate Professional Applicators Assn.
2000 Convention
Cavanaugs Inn at the Park
Spokane, WA

October 18-21, 2000
Student Society of Arboriculture
6th Annual Conference and Job Fair
Clemson University
Contact: twalsh@uwsp.edu

October 19, 2000
Tree Evaluation Workshop
Grand Rapids, MI
Contact: 517-482-5530

October 25-28, 2000
Morton Arboretum
International Maple Symposium
Lisle, IL
Contact: 630-719-2468

November 2000
Body Language of Trees
Dr. Claus Mattheck, German physicist
Ypsilanti, MI
Contact: 517-482-5530

November 3, 2000
Plant Health Care, Inc.
Plant Biology Workshop
Frogmore, SC
Contact: 843-838-7506

November 9-11, 2000
National Arborist Association
TCI EXPO 2000
Charlotte Convention Center
Contact: 603-673-3311

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CLIMBER/GROUNDSMAN - Established tree care/removal co. seeking exp. tree climber and groundsman to continue our growth and success. Prefer hardworking, enthusiastic applicants looking for challenging work. Contact: HULSEY TREE, 1175 Thompson Bridge Rd., Gainesville, GA 30501, 770-534-1596

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Fax: (808) 959-0597

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Please send resume, references and salary history to:

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- Foreman and Bucket Operators
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EOE / AAP / M-F

continued on page 60
IRA Wickes/Arborists Rockland County based firm for over 70 years seeks qualified individuals with experience. Arborists / Sales Reps, Office Staff, Crew Leaders, Climbers, Spray Techs (IPM, PHC, LAWN). Great benefit package includes 401(k) matching, advancement opportunities, E.O.E. Check us out on the web at irawickes.com. Fax us at (914) 354-3475 or snail mail us at IRA Wickes / Arborists, 11 McNamara Rd., Spring Valley, NY 10977.

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Experienced Tree Climbers and Spray Technicians needed. We have cake! Call Dan at Autumn Tree Care Experts, 847-729-1963 or Fax resumes to 847-729 1966.

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Tamarack's primary service is to the utility industry.

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Canton, NY 13617
1-800-858-0437
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E-mail: tamarack@northnet.org

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Management Position in Northern California
Description: We are looking for a person to do sales, estimates and consultations along with crew management. We are a rapidly growing company in Northern California, working year round. This is an exceptional opportunity for a motivated person who can grow with the company. We need an individual who can work with the public and professional clientele.
Qualifications: Applicant must be certified and have several years experience in the tree care industry. This is a perfect opportunity for a foreman to move into a management position.
Compensation: Salary/Benefits, etc. Contact North Valley Tree Service, 3544 Brindle Lane, Chico, CA 95973, Phone: (530) 893-9649. Fax: (530) 893-9650. E-mail: nvtree@aol.com.


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continued on page 64


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Tree Care Business For Sale
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continued on page 66
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Tree Care Industry Millennium Memory

Tree care trucks went high-tech in the '60s

By John Gunnell

In 1913, Dudley Pierce and his father Humphrey founded the Auto Body Works of Appleton, Wisc. In a shop located in an old church, they started building bodies for Model-T Ford trucks. The Pierce Auto Body Works was incorporated and started its history four years later. Today, the company is one of America's largest builders of fire trucks.

Pierce enjoyed expansion and diversification in the '20s. In the '30s, to help weather the Depression, it added new equipment and, in 1938, began supplying the Eagle Manufacturing division of the Four-Wheel-Drive (FWD) truck company with U-10 utility bodies for A-frame derricks. (These trucks were popular with "tree surgeons" of the day, although we are not focusing here on the '30s.)

It was in the World War II era that Pierce made its first big move into the fire truck business. Dudley Pierce's son, Eugene, was running the company by this time and would later remark that he little suspected how significant this product line would become for the company. A sales engineer and utility-body draftsman named Douglas Ogilvie joined the company in 1948. He would also have a significant influence on the firm's future success.

Dudley Pierce passed away in 1954, and two years later Eugene formed an association with pump manufacturer W.S. Darley Co. of Rosemont, Ill. That same year, the Minneapolis, Minn., fire department placed an order for 41 of Pierce's reliable new pumipers. When Eugene Pierce died in 1958, Dave Ogilvie became vice president and general manager. Due to his background with mechanical drawings, Ogilvie was quite fascinated by a new device known as the articulating boom.

That same year, 1958, Pierce built a platform-style truck for Ray Schuster, the Chicago Pierce dealer. He asked Ogilvie to outfit this unit with underneath storage compartments and a Pitman articulating boom. A fire hose was strung to the top of the boom, since Schuster was hoping to sell some trucks to electric companies to use for washing power-line insulators. Schuster demonstrated the unit to the Chicago Fire Department, which liked it very much. This was the start of the "snorkel" fire truck with an articulating boom and platform.

The next year the Pitman Company designed a new articulating boom with a permanent water pipeway. Art Moore of Pitman gave Pierce a contract to build a body for this unit. When it was exhibited at the International Fire Chiefs Convention in Grand Rapids, Mich., that year, the truck caused a sensation. By 1961, Pierce sales went over $1 million for the first time.

As you can imagine, the new trucks with articulating booms and snorkels that evolved in the late '50s were also a hit with tree trimmers. The booms allowed arborists to go safely up in the air to reach broken limbs and diseased sections high on the trunk of a tree. Snorkels could be used for chemical spraying procedures.

Ogilvie’s design for the boom-and-snorkel truck was just the beginning of a revolution in the overall utility truck manufacturing field. By the early 1960s, a variety of ladders, lifts, cranes, booms and derricks were brought on the market by a variety of manufacturers. They featured the latest "up-in-the-air" technology and had great appeal to tree trimming professionals.

Anyone entering the business at that time would probably have considered buying such a truck. Companies like Chevrolet, Ford, Dodge, International—and even Studebaker back then—would have happily supplied the needed chassis. But these companies did not make the special bodies, rigging and accessories that an arborist would have needed. Instead, they would have relied on a number of "approved" aftermarket vendors (such as Pierce Auto Works) to add the needed equipment to the basic chassis.

The truck makers had catalogs of available bodies. In the case of Chevrolet, these catalogs were called Silver Books, and they were (and still are) published by the Verbiest Publishing Company of Michigan. To research this article, the Silver Book for 1962: Catalog of Engineered Vocational Equipment for Chevrolet Jobmaster Trucks was consulted. According to an
McCabe-Powers’ “Service-Master” aerial ladders could be fitted to the C10 1/2-ton, C20 3/4-ton, C30 1-ton and 1-1/2-ton Chevrolet trucks. Manually extended ladders came in two lengths and could be found with optional power-raise equipment. When reeled, the ladder stored in the rack behind the rear of the cab and laid over the roof and front of the truck.

When it comes to arborist supplies, McCabe-Powers’ “Service-Master” aerial ladders could be fitted to the C10 1/2-ton, C20 3/4-ton, C30 1-ton and 1-1/2-ton Chevrolet trucks. Manually extended ladders came in two lengths and could be found with optional power-raise equipment. When reeled, the ladder stored in the rack behind the rear of the cab and laid over the roof and front of the truck.

Holan, then a subsidiary of the Ohio Brass Company located in Cleveland, made a variety of heavier-duty bodies and equipment that were very well suited to tree service work. The firm manufactured toolbox utility bodies, squirt booms, ladders, elbows and several types of derricks. These must have been the “Cadillacs” for arborists of the ’50s and ’60s.

The 1962 Silver Book did not illustrate “tree trucks” made by the other indexed firms, but they were certainly available. In addition, Pierce and other utility-truck makers surely turned out some models, too. Ford, Dodge and the other truck makers all had their own suppliers. What we’ve covered here is just the tip of the iceberg—enough to reflect the historical fact that tree trimmers were going “high-tech” way back in the ’60s.

John Gunnell is a freelance writer in Iola, Wis.
Proceed With Caution

When purchasing used tree care equipment, know what to ask and require to help ensure you are buying quality

By George R. Pogue, Jr.

After 20 years in the tree care industry, we have definitely had our share of bumps and bruises when it comes to locating and purchasing quality tree care equipment. Unlike many other businesses, the tree care professional has a large amount of overhead invested solely in equipment, which must be safe and in good working order to be profitable.

Locating the tree equipment we need can be the first obstacle. For many of us, finding equipment in our own backyard is nearly impossible. Even finding the equipment we need in our own state at the time we need it can be cumbersome. Therefore, we must resolve to do some extensive traveling.

Our tree business is located in south central Pennsylvania. Over the years, we have made numerous trips to New York, Georgia, North Carolina and Florida in hopes of landing the "exactly as specified" piece of tree care equipment. Too often, we arrive, only to find that it is not what we need, what we asked for, available to be looked at or ready to be taken off the lot as promised.

The second problem is "quality" equipment. For many small tree care businesses, the very thought of purchasing a brand new piece of tree care equipment is unimaginable. Financially, they cannot afford such a luxury. We are then left the difficult task of purchasing used equipment. We all know that tree equipment is used hard and on a nearly daily basis. How do you know if you are buying someone else's problems? How can you be sure how much you should invest into this piece of equipment? Will this company (miles away from your locale) stand behind what they are selling?

I can honestly say that I have never felt so much pressure as when I am standing in a salesperson's office, hundreds of miles away from home, hearing him or her tell me lines like these:

♦ "I know it's not exactly what you wanted, but I thought if I got you down here, you would buy one anyway, or be willing to wait."
♦ "You take it back to Pennsylvania and have them complete a state inspection and if anything doesn't pass, we'll pay for it. Don't worry about that."
♦ "I know the truck doesn't meet all of the specifications as you listed over the phone, but we figured this truck would suit you just fine."
♦ "I know that you wanted a 1988 bucket truck, but we honestly didn't realize the boom was 16 years older than the truck until you pointed it out."
♦ "We'll go ahead and put an inspection sticker on it for you, but you have your mechanic take a look at it when you get back home. We'll take care of any repairs."
♦ "I'm sorry the truck you came to look at just sold, but here's another one we have left on the lot. I'm sure it'll be okay."
♦ "I'm sorry the truck isn't finished yet per our agreed deadline, but there is a nice motel down the road."

Well, now that we've relived some of our most exasperating moments, let's move on to what we can do to protect ourselves from similar situations.

1. When possible, the first trip should be a scouting trip to find a piece of equipment you want. The second trip should be the buying trip.

2. Don't rush into the purchase of a used piece of equipment. Never let the salesman know how badly you need something. It is nice to have spare equipment. This way you only need to purchase equipment when your spare is moved into full-time use.

3. Do your homework on the company. Don't rely solely on advertisements in tree care industry magazines.
4. When you ask questions over the phone and the salesperson gives you a verbal response, request those same answers in writing.

5. Call the salesperson just as you are preparing to go look at the equipment to verify it will be there when you arrive.

6. Nationally known tree care companies wholesale their used equipment to truck brokers. Make certain that the company you are going to buy from is more than just a truck broker and will stand behind the equipment you buy. You must be able to hold someone accountable in the event something goes wrong.

7. To make certain that you come home with your title, discuss payment arrangements in advance. Ask questions such as: Is there a waiting period for my check to clear before getting the title? Is a certified check required? Where is the title? Will I be able to bring it home with the truck? Discuss every detail to ensure the release of the original title will take place when you go to pick up the equipment.

8. If it is a specialized piece of equipment like an aerial lift bucket truck, ask for the serial number of the unit and call the factory to determine the model year of the truck/boom, as well as any parts, service and maintenance records.

9. Check with the Better Business Bureau prior to purchasing equipment from any company. You can now check out a company right over the Internet! Be aware of any prior grievances filed or if the company is currently under investigation.

10. Be willing to walk away from a truck at any time during the negotiations. Never give a down payment larger than you are willing to lose.

11. When buying used tree equipment, your purchase decision should be based on this premise, “What you see is what you get.”

12. Never fully pay the salesperson or take the truck home unless it is exactly what you want, as you specified in the negotiated conditions, for the price you anticipated paying.

Our plea to the industry is for someone out there to initiate a database of “Used Tree Care Equipment Dealers,” which would include a list of grievances as well as letters of recommendation from previous buyers. I would like to see a non-biased group, interested in the safety of tree care professionals. Wouldn’t it be great to be able to check out a company based on the reports of previous customers, rather than advertisements?

As many of you know or can tell from this account, the pressure to maintain a well-outfitted company can often lead to stressful decision making. It is our hope that after reading this account, you are not only an educated tree care professional with all of your certifications and licenses hanging on the wall, but a savvy, well informed tree care equipment consumer—one that is able to separate a pretentious salesperson from an honest person who is selling used tree care equipment.

George R. Pogue, Jr. is the owner of Cumberland Valley Tree Service in Chambersburg, Penn.
Recognizing Sawflies in Pines
(Or, a Caterpillar Isn’t Always a Caterpillar)
By David M. Munson

It’s a typical story: a client calls in the early summer complaining that the needles on her 3-year-old pines seem to have disappeared overnight. On the way back to the office you stop by to see what the problem is. She has a long row of loblolly pines that were planted to help screen her backyard from the adjacent property, which includes a mature stand of shortleaf pine close to the property line. One of the larger shortleaves is obviously dying, and all the trees are chlorotic to some degree. Upon closer investigation, you find the loblollies to be covered with inch-long yellow caterpillars with black spots and bright red heads. They are making short work of both the new growth and the mature needles—leaving only thin, withered strands of tissue where the leaves used to be. You consider a chemical spray, but the client is concerned about residual chemicals in the yard where her children often play, so you explain the short- and long-term benefits of Bacillus thuringiensis (Bt) and schedule an application for later in the week. Problem solved, right?

Wrong. Like so many other pest infestation cases, the insects in this case are really only a symptom of a much larger problem that needs to be addressed. And, while Bt is an excellent control measure for certain leaf-eating caterpillars, the pests just described are not caterpillars at all, but rather the larvae of a wasp known as a sawfly. Various sawfly species attack coniferous trees throughout the United States and Canada. Being able to distinguish between the major pest species can help the arborist determine the most effective approach to controlling these damaging pests.

There are dozens of sawfly species in North America, feeding on just about everything. Fortunately, only a handful are serious pests of trees. The most damaging species include the redheaded pine sawfly (described above), the introduced pine sawfly, the blackheaded pine sawfly, the loblolly pine sawfly, and the Virginia pine sawfly. Telling the different species apart can be difficult, but most species have one or two distinctive characteristics that allow a knowledgeable arborist to make a relatively accurate identification in the field.

Sawflies belong to the insect order Hymenoptera, which also includes ants, bees and wasps. Sawfly adults are rarely seen and difficult to identify—most species are rather nondescript and fly-
like. Depending on the species, adult females may be active in the spring or fall, laying eggs on the needles of the host plants or inserting the eggs directly into the leaves through small slits they have made with their saw-like ovipositors (hence the common name sawfly). In southern states, several species can have two or more generations per year. Larvae generally feed in large groups on mature leaves, and large populations can completely defoliate host trees. Larvae pupate in ground litter and debris.

As mentioned in the sample case earlier, pines that are attacked by sawfly larvae are often experiencing stress from another source. Affected trees are most often experiencing some sort of drought stress and/or nutrient deficiency, and become infested with sawfly larvae in an already weakened state. Young larvae often leave the toughest portion of each needle consumed, creating a straw-like appearance that is easily recognized. Older stages generally consume the whole needle, and moderate to heavy defoliation can lead to growth loss, crown deformation and even tree mortality—especially if leaf consumption continues through the fall. The likelihood of bark beetle attack is also increased in a tree weakened by sawfly defoliation.

Sawfly populations usually follow a cyclical pattern of highs and lows, where heavy infestations reach a peak and crash due to natural causes such as temperature fluctuations and disease. As always, your best hope for defending the trees under your care is to keep them healthy. Maintaining regular watering schedules during times of drought and closely monitoring trees stressed by construction or other factors can help to avoid future sawfly damage, as well as outbreaks of other damaging pests. Since most sawfly larvae are gregarious in their early stages, early detection can make control a breeze. Simply prune off the infested limb or crush the young colony with a gloved hand. Many species are well camouflaged, however, making colonies difficult to detect before larval populations get out of hand. By lightly shaking a branch or two during routine inspections or maintenance, larvae can often be agitated into giving their positions away. Sawflies typically arch
Sawfly or Butterfly?

Proper identification is probably the most important factor for the arborist—both for determining effective control and for satisfying the customer. Being able to properly identify pest insects inspires confidence and expresses professionalism, which can mean the difference between a one-time job and a long-term client contract. The first step is to distinguish the sawfly larva from a moth or butterfly caterpillar. The easiest way to do this is to count the pairs of fleshy prolegs on the insect. Two to five pairs mean you have a true caterpillar—the offspring of a butterfly or moth. More than five pairs mean you have a sawfly. From here the identification process gets more complicated. Some of the most common sawfly pests of pines are briefly described in the following paragraphs in an effort to simplify identification of the sawflies most likely to be encountered by the arborist.

Redheaded Pine Sawfly Neodiprion lecontei (Fitch)

The redheaded pine sawfly larva is easy to identify by its bright red head. It has a pale yellow body, approximately 1-inch long, marked with several lines of black spots. It feeds mainly on loblolly and longleaf pines from Canada through the eastern and southern states, although it will feed on several other varieties of pine.

Virginia Pine Sawfly Neodiprion pratti pratti (Dyar)

The Virginia pine sawfly’s range spans from New Jersey through North Carolina. The preferred hosts are Virginia and shortleaf pines, although they are sometimes found on loblolly. The larva can be identified by its black head and pale green body, marked with longitudinal black lines or rows of spots. Mature larvae are one-half inch to one inch long.

Loblolly Pine Sawfly Neodiprion taedae linearis (Ross)

As its name suggests, loblolly pine sawflies prefer loblolly pine as its host, as well as shortleaf pines. This insect can be found throughout the southern and central states, and can be identified by its dull green body lined with black and lighter colored stripes.

Introduced Pine Sawfly Diprion similes (Hartig)

This destructive insect can be found defoliating eastern white pines, as well as other pines, from Canada to North Carolina. The larva is about one inch long, with a black stripe on the back and a shiny black head. The sides are spotted with blotches of yellow and white.

Blackheaded Pine Sawfly Neodiprion exitans (Rohwer)

These inch-long, olive-green larvae have dark, black heads and two black stripes on the top of their bodies, as well as a row of black spots on either side. Blackheaded pine sawfly larvae feed on loblolly, shortleaf, longleaf, slash and pond pines. These insects can be found from Virginia to Texas.

David M. Munson is an urban forestry specialist with the City of Charlotte, N.C.
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The NAA offices were a bustle of activity the first week of May as producers, directors, actors and film crew began filming the next video series, "Basic Training for Ground Operation in Tree Care." This five-part video and workbook training program, produced jointly by NAA and ISA, is designed to improve the safety, productivity and morale of field crew personnel responsible for ground operations.

Two weeks of rain, with intermittent snow showers, gave way to sunny skies, providing the perfect setting for five days of shooting. First to arrive were the iron stars of the production—chippers and a bucket truck, followed by ropes, saddles, saws and rigging gear. Special thanks to Altec Industries, American Arborist Supplies, Bandit Industries Inc., Fanno Saw Works, Husqvarna Forest & Garden Company, Mayo Global Transportation, Morbark, Inc., Vermeer Manufacturing Co., Wood/Chuck Chipper Corp., and Woodsman, Inc. for their sponsorship and equipment.

Next came the stars of the shoot, including Sharon Lilly of ISA, Ken Palmer of ArborMaster Training, Inc., Tim Ard of Forest Applications Training, and the NAA's own Peter Gerstenberger and Robert Rouse.

The components of the video program and workbook are:

- An Orientation to the Arboriculture Profession! introduces new hires to the tree care profession, stresses the importance of safety, details PPE use and requirements, and prepares workers to leave the shop.
- Vehicle Safety discusses preparing the truck and chipper and pre-trip safety considerations for trucks, as well as a variety of safe driving, parking and operations requirements.
- Job Planning & Preparation details site inspection, identifying work site hazards, constructing a work plan and job briefing and emergency preparedness.
- Working Safely & Efficiently covers controlling pedestrian and vehicular traffic, preparing the equipment and gear, work sequences and a variety of tasks in support of the climber.
- Brush Chipper Operation & Maintenance covers the three main types of chipper. It includes chipper orientation; preventative maintenance checks; towing; setting up for chipping; dragging, stacking and feeding brush; and field maintenance.

The video series is scheduled for July release.
New Edition Now Available

The new edition of the Guide for Plant Appraisal is available for you. It contains a number of significant changes, so don’t wait to order your copy. Inside, you will find differences regarding:

Replacement Cost and Trunk Formula Methods: In the 9th edition of the Guide for Plant Appraisal, the most significant procedural change is that in both methods, the costs of the replacement tree and its installation are adjusted by the Species rating.

Condition: Tree structure is given more emphasis in the Condition rating.

Location: The rating of a Site is to consider its relative real-estate value on a percentage basis, not strictly monetarily, in relation to the city, area, and/or region in which it is located, as well as its visual and functional values.

Easements and Rights of Way: Plant appraisal needs to consider the extent of the owner’s rights on easements and rights of way.

A More Proactive Approach: Appraising the value of plants before they are lost or damaged is recommended.

Authored by the Council of Tree and Landscape Appraisers, this publication is intended to provide the professional plant appraiser with information to properly determine the size, species, condition, and location factors that influence the value of plants. Not only can it be used for the valuation of plant casualties, but also for insurance purposes, real-estate transactions, plant condemnations, and tree inventories.

The retail price is $125. NAA member price is $75. To order your copy, call the NAA at 1-800-733-2622.

Updated Handbook From Morton

The Morton Arboretum’s new Tree & Shrub Handbook is designed as a reference guide for home gardeners, but arborists and landscapers may want to keep a copy in the truck themselves. Its well-organized style and liberal use of color photos make it a handy pictorial reference to assist professionals in explaining plant choices to consumers.

The handbook will also help prepare arborists in answering consumer questions, since it contains answers to questions most frequently asked of the arboretum by homeowners and green industry professionals. Specific topics include selection recommendations for different-sized trees; disease-hardy trees and shrubs; plants tolerant of wet sites; plants not favored by deer; proper pruning, fertilizing and transplanting techniques; and details about pests and diseases. While professionals should know much of this information already, the format and clarity of the handbook will help arborists relate this information to clients.

The Tree & Shrub Handbook is available from the Morton Arboretum for $45 by calling 630-719-2465.

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In Paris, trees chipped in a different way

Cutting-edge technology is helping the city of Paris, France keep track of its prized shade trees—and prevent crews from cutting the wrong ones. The city recently completed the installation of computer chips in about 90,000 trees, according to a story from the Reuters news service.

The chips, which measure about one inch in length, are bored into the center of the tree’s trunk and left there. The chips contain an identification number for the trees that can be read with a handheld computer. The system costs the city about $7 per tree.

Michigan issues warning on warm-weather pruning

It may not be the best case of timing for arborists, but Michigan agriculture officials are warning against pruning some varieties of oak during the growing season because oak wilt is spreading more rapidly through the state.

According to an Associated Press article, it’s best to wait until winter to have work done on most oaks because beetles carrying the oak wilt fungus are drawn to fresh cuts or storm damage during the growing season. Red, black, scarlet and pin oaks are most susceptible to the fungus, which is spread by beetles attracted to fresh cuts, and can die within weeks of initial infection. White oaks and other varieties may succumb to the disease over a longer period of time. The Michigan University Extension Service is also recommending that paint be used on fresh cuts or damaged limbs to help prevent the spread of the fungus.

Bad tree work may yield good results

In most communities, tree wardens fight for every dollar of public funding they get. But some sloppy tree work has private residents in Provincetown, Mass., offering to reach into their own wallets to hire a qualified tree warden.

According to the Cape Cod Times, a crew of workers from the town’s department of public works (DPW) was blamed for over-pruning several trees, including some on private land, leaving behind unbalanced ornamentals and shade trees with massive rip cuts on their trunks. Residents at the sandy tip of Cape Cod value the privacy the few shade trees offer so much that several offered to put up their own money to hire a tree warden with a background in arboriculture.

While shying away from taking citizen’s money, the town’s selectmen have taken action. A moratorium on tree pruning was put into place and the town is still looking at the possibility of appointing a more qualified tree warden than the DPW director. In the meantime, Selectman David Atkinson, who is an arborist, gave the DPW crew a brief lesson on the basics of trimming trees, including how to avoid making rip-cuts.

Every tree has a story, this one had history

Taking down a tree can always cause a stir. Neighbors peek out of windows and passersby crane their necks. But that’s nothing compared to the attention one large tulip poplar on the grounds of St. John’s College in Annapolis, Md., enjoyed.

As reported in USA Today and other publications, the 97-foot tall tree got quite a send-off, one fitting for a tree that played a role in the founding of a country. A 45-minute ceremony was held and ships bells tolled before the cutting of the 400-year-old tree began.

The specimen was known as the last of 13 Liberty Trees, beneath which American revolutionaries met in the early days of the war for independence. The tree was badly damaged by Hurricane Floyd. The state hired an arborist to explore possible ways of saving the tree, but eventually it was decided that it couldn’t be saved without posing a hazard—a 15-foot crack had opened up in the trunk.

The Liberty Tree won’t soon be forgotten. Cuttings from the trunk were given to each of the original 13 colonies and nearby, a 110-year-old offspring of the ancient tree remains in good health.

But even that’s not the end of this tree’s story. A month after the last cut was made, a Maryland landscaper, Mark Menhert, told the Baltimore Sun he had recovered parts of the tree’s trunk from a recycling plant. He plans to put the chunks of wood up for sale.
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<td>25. Deere Power System Group</td>
<td>23</td>
<td>63. Tamarack Clearing Inc.</td>
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<td>26. DICA Marketing Co.</td>
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<td>64. Tamarack Clearing Inc.</td>
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<td>27. The Doggett Corporation</td>
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<td>65. TCI EXPO 2000</td>
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<td>28. Florida Power &amp; Light</td>
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<td>66. Terex Telelect Inc.</td>
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<td>29. Forestry Equipment of Shelby, Inc.</td>
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<td>67. Timberwolf Manufacturing Corp.</td>
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<td>30. Forestry Suppliers, Inc.</td>
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<td>68. Tree Tech Microinjection Systems</td>
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<td>31. G &amp; A Equipment Inc.</td>
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<td>69. Trueco, Inc.</td>
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<td>32. Good Tree Care Company</td>
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<td>70. V &amp; H Inc.</td>
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<td>33. Husqvarna Forest &amp; Garden Company</td>
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<td>34. IML - Instrument Mechanic Labor, Inc.</td>
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<td>72. West Coast Shoe Company/WESCO</td>
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<td>36. Independent Protection Company</td>
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<td>74. Wood-Mizer Products Inc.</td>
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<td>37. Labonville, Inc.</td>
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<td>75. Yale Cordage Inc.</td>
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<td>38. Lewis Utility Truck Sales, Inc.</td>
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<td>76. Zenith Cutter Company</td>
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<td>39. MAT-3, Inc.</td>
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* Please circle this number on the Reader Service Card for more information.

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Please circle 23 on Reader Service Card
For the past 15 years I have run my own part-time tree care business, which developed out of a lawn care business I started in grade school. My first paid job consisted of trimming several trees for a neighbor who saw me climbing in my parents' trees. I gave the homeowner a written proposal, she accepted the job, and I went about completing the work. From that point on I've been able to handle just about any job I encountered, as long as I thought it through carefully and had good helpers. Most of my training was on-the-job, and I learned more by asking a lot of questions whenever I purchased or rented equipment.

Last summer I was asked to bid on removing two large oak trees at a home about an hour away. I was referred by a neighbor, and referrals usually led to winning the bid, so I made a trip out to the house to review the trees. Two oaks were positioned in the middle of a circular driveway with a picket fence on one side, shrubs on the other, and electric power lines just past the reach of the limbs. The larger of the trees was 46 inches in diameter. I carefully assessed the job, visualizing where each cut would be and how I would safely bring this monster to the ground. One limb at a time, it would be manageable.

The job was fairly straightforward. Climb up, position my rope, work my way around and cut off limbs one piece at a time. I kept aware of the power lines alongside the tree, but wasn't too concerned because no limbs were hanging over the lines. When I needed additional reach to tie off a rope, I would use my aluminum pole saw to position the rope. Part way through the job I reached across the tree, looped the rope over a limb, hooked the end of the rope and pulled it back toward me. JOLT! The pole saw jumped from my hands and I felt a sharp twinge. The shock from the momentary contact with the wires had traveled through the rubber-coated saw and my leather gloves, burning a small divot into my thumb. I quickly thanked the Lord that I was still alive and I asked Him to keep me safe for the remainder of the job.

While I don't know the voltage of the wires, I would guess they were several thousand volts. I knew I had to be careful of the wires, I just hadn't maintained my awareness as I navigated through the tree.

From that experience, I've gained a greater respect for electricity. It powers our society, and it can kill you. I have since traded in my aluminum pole saw for fiberglass. And more importantly, I have learned about the training and safety regulations for working around power lines. Being a weekend warrior is a great way to earn additional income, but it's not worth dying for. All tree care workers need to know and live by the standards that have been established for our safety.

Douglas K. Tucker is the owner of Doug's Tree Service in Clarendon Hills, Ill.
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*This set of equipment includes macro-infusion bypass pump with pressure regulator and screen, 75 infusion tees and 110 feet of tubing, and 2 high helix drill bits.

The average uptake for 90% of trees when done following protocol is between 30 - 60 minutes. Small and unhealthy trees can take longer.