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Where Oh Where Have All the Good Folks Gone?

If there is one constant in the many conversations I’ve had with the industry during the last two months, it’s the difficulty in finding good employees and keeping them. Where oh where have they gone? How can I find them? What will make them stay? How do I deal with bilingual crew issues?

What I’ve heard in my travels is that it’s not benefits that make the difference, nor long-term retirement planning. What is required is a pay difference. NAA recently completed its annual wage survey, and the overall results are that the industry is not keeping pace; in fact, we’re losing ground. In a low-unemployment market, our challenge is how to attract employees to work that is hard, but satisfying, and has a risk attached to it.

One of the effects of having a low employee turnover rate was revealed in a recent study by Towers Perrin. Customer retention in your business will be higher if your employee turnover rate is less than 10 percent. That is a bottom line driver!!!

We are already impacted by the change in company/employee loyalty that broke apart in the ’80s. Employees rarely stay with the same employer for a lifetime anymore. A few years ago, the service industry in Florida was particularly challenged. Hotels began working together to deal with a mass migration from property to property for wage scale differences of as little as 25 cents an hour. Our industry could do itself a favor by having a minimum training standard among all companies, so that everyone is training a skilled employee pool. If we know and can accept that our employees are going to move around, the cost of hiring and training is more equitable for everyone—if everyone participates. NAA recognizes that one of the challenges is taking job time for training. We are planning some innovative solutions to help the industry with accessibility and the timing challenges next year. Stay tuned!

We also have challenges from other industries, the technological explosion, the reduction of the population in 35-45 year olds, and a balanced life approach that the Gen-Xers are taking. Add to that the family-friendly policies and flexible work environments that are being established in offices to accommodate child-care and elder-care issues, and it makes it more challenging to find employees for a service industry. Arboriculture, by its very nature, does not have that kind of flexibility during a workday out in the field. For the people we seek to attract, a flexible office environment with higher pay is just a few computer courses away at the local community college.

Please forward any unique retention strategies that are working in your company. If your experience is different, we would love to hear from you. NAA has the Tailgate Safety Program in Spanish now, and we’re working on other training products for the future to help you expand your labor pool and train effectively. We’ve expanded Career Days at TCI EXPO and are putting strategic partnerships together in the near future to help educate young people and guidance counselors. We’re also forming a partnership in government affairs with a fellow association that can give us depth in helping with immigration law issues. We’re at work on your behalf, and we need you to help us stay informed in this area and pass on success stories. It’s for the good of the whole industry.
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What Signals a Plant to Break Dormancy?
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Dormancy Patterns in Plants
A plant’s dormancy pattern is a critical factor in its ability to withstand freezing temperatures. If a plant breaks dormancy too early, it will be damaged when the cold weather returns.

On the Cover
This maple has already entered dormancy, even though its leaves have yet to drop. Photo courtesy Dr. Abbas Shirazi.

Outlook
By Cynthia Mills, CAE
Tree care industry losing ground—and employees—to competing sectors.

Branch Office
By Wayne Outlaw
Coping with labor shortages requires innovation and a steady commitment to recruiting only the best.

Cutting Edge
New products and news in the tree care industry

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First, there were cold hardiness zones. Then we learned that heat tolerance was also a factor in a plant’s ability to survive in any given climate. Now, we’re learning there’s a third element that plays an important role: dormancy.

Dormancy research is one of many areas of ongoing study at The Morton Arboretum, a 1,700-acre outdoor museum of trees and woody plants in Lisle, Ill. A staff that includes a research horticulturist, plant pathologist, plant physiologist, soil scientist, conservation biologist, tree breeder, and several botanists investigates how to develop more resilient and useful trees and shrubs, as well as how to help plants resist diseases and withstand challenging environments.

A plant’s dormancy pattern is a critical factor in its ability to withstand freezing temperatures. For instance, a plant may be cold hardy in Zone 5, but if its habit is to go late into dormancy, it won’t have time to acclimate to cold temperatures and may be damaged, weakened or die. Similarly, if a plant breaks dormancy too early—during one of those warm sunny spells that northern climates sometimes experience in February—it will be damaged when the cold weather returns.
Although it is usually quite clear to us that a plant is dormant in February, at least in Zone 5, dormancy begins much earlier than we realize. For instance, in the Chicago region red-osier dogwood (*Cornus sericea* L.) is already entering dormancy in late September/early October—even though it has yet to drop its leaves.

“Dormancy is a very dynamic state,” explains Dr. Abbas Shirazi, research horticulturist at The Morton Arboretum. “During dormancy, trees are responding to temperature, day length and other factors in the environment.”

Dormancy has three phases. The first is correlative inhibition. In this phase, the tree stops growing for the season, and the terminal buds form. The next phase, the rest period, is the longest phase. During the rest phase, plants require a period of chilling in order to resume growth, flower and bear fruit the next season. Finally, there’s quiescence, the time when the plant is just waiting for the right conditions to start growing again. Quiescence can last quite a long time—sometimes up to four months. If you decide to discuss dormancy with a horticultural researcher, prepare to hear these three phases referred to as ecodormancy (correlative inhibition), endodormancy (rest), and paradormancy (quiescence).

Just as it’s not always apparent that a tree or shrub has entered the inhibition phase, it’s also often not clear that a plant is quiescent. The Red-osier dogwood that was already in phase I in late September has met its chilling requirement and finished its rest stage by December—if it lives in Zone 5.

“Sometimes in January, the coldest month of the year, I say to people ‘Look at all these trees that are no longer dormant; they are quiescent’,” Shirazi says with a gesture toward the sweeping grounds outside his third floor research lab.

Just what signals a plant to break dormancy differs by species, according to Dr. Susan Wiegrefe, The Morton Arboretum’s tree breeder. Some trees are cued by day length. Others respond to the difference in temperature. Often trees have a primary cue, such as day length. Once the threshold has been reached for the primary cue, the tree will respond to secondary cues, such as temperature. This is one of the reasons that some trees will break bud
during an early spring warm spell and others won’t.

Even within the same species, dormancy patterns vary by region. For instance, red maple (Acer rubrum) grows from northern Minnesota to Florida. Although it’s the same species, its cold hardiness, heat tolerance and dormancy are different in Minnesota than in Florida.

Each plant’s dormancy pattern is genetically set. The plant and any vegetative propagules will all retain this programming. Even plants grafted onto this rootstock may be influenced by this dormancy pattern. A plant that’s from Alaska may stop growing early in the season and not break dormancy until late spring. It will continue this pattern even if it is ultimately planted in Chicago or Maryland. Similarly, a magnolia that is grown in Missouri may be sold as hardy in Zone 5. Although this is true, that Missouri magnolia will break dormancy too early in the spring to survive undamaged in Chicago.

So, how do you know what a tree’s dormancy pattern is—and whether it is Dormant samples of Japanese maple cultivars are put under "long day" conditions in the lab (14-16 hours of light) to see how long it will take them to break dormancy.

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suitable for your purposes? You have to test it. To date, much of that testing has been done in the field by trial and error. Many growers, landscape contractors, urban foresters and even homeowners have simply planted trees—sometimes thousands of them—and waited to see which survive.

"In 1997, The Urban Horticulture Research Lab was established at The Morton Arboretum to evaluate trees and determine in advance which will be suitable for our climate," Shirazi explains. "Since that time, we have tested many trees and shrubs for cold hardiness, heat tolerance and dormancy, as well as ornamental value."

In the Urban Horticulture Research Lab, Shirazi and his staff subject branches to artificial freezing tests to determine cold hardiness. They monitor ion leakage from leaf tissues to test heat tolerance. To learn about a woody plant's dormancy patterns, they cut dormant branches, put them in water, give them 14 to 16 hours of light a day and count how long it takes for bud break.

Shirazi and his staff are also testing trees and shrubs to learn how their chilling requirements vary. They test this by putting branches in a cooler at 5 to 7 degrees Celsius. At regular intervals, they remove the branches and put them into the greenhouse. When the plant's chilling requirement has been met, it breaks bud.

The researchers also plant trees on the Arboretum grounds, watching them over a period of at least two years to see how they perform in nature. In addition, they share information and even plant materials with nurseries and other arboreta in Zone 5 and colder zones to see how plant performance varies across climates.

Researchers are discovering other factors that can cause a plant to break dormancy. "Stress from low or high temperatures, drought or chemicals can cause a plant to end its rest period," Shirazi notes. "We call these 'near-lethal stresses'."

Diseases can also be a factor. Shirazi and his colleague, Plant Pathologist Dr. Karel Jacobs, recently reported that the fungus Botryosphaeria dothidea can reduce cold hardiness in redbud (Cercis canadensis), as well as cause it to break dormancy.

In addition to evaluating trees and shrubs, The Morton Arboretum has an active breeding program. "We're planting seeds collected from maples and elms in the northern latitudes of China and Japan, growing them and evaluating them for their potential as direct introductions or as candidates for hybridization," relates Wiegrefe. "Often, we start with plant material collected..."
When growing, purchasing or planting trees and shrubs, it’s important to know where the seeds, liners or plant material originally came from. No matter where the plant is growing now—or will ultimately be planted—its biological clock is already programmed for its place of origin. So, if you’re planting red maples in Chicago, don’t buy them from a nursery in a warmer climate.

from a similar climate, in hopes that not only its cold hardiness and heat tolerance, but also its dormancy pattern will be suitable for our region.”

One of Wiegrefe’s challenges is attempting to determine which cues plants use to start and end dormancy. Is it day length, temperature, or some combination of the two? If the dormancy pattern isn’t quite compatible with the seasons, she looks at whether she can cross the plant with another to produce a more favorable pattern. “As you can imagine, this is a time-consuming process.”

Wiegrefe admits, “It may take two or more generations of plants to determine if we’re on the right track.”

Because the importance of dormancy is a relatively new idea, there is no standardized way of describing it. For instance, when researchers test dormancy, there is no agreed upon temperature for chilling. This is something that Shirazi, as chairman of the Dormancy Committee of the American Society of Horticultural Science, is currently addressing.

Of course, the challenge of discussing dormancy goes beyond that. The USDA cold hardiness zones have been around for quite a while. The geography included in each zone and the conditions that exist there have been well defined. But how do we categorize plants according to their dormancy patterns? Can we group them according to what day length they need to end quiescence or the number of accumulated degree-days at which they break dormancy? And what about the factors that cause them to stop growing and prepare for rest?
Clearly, there is much work to be done to develop a workable and uniform shorthand for describing a plant's dormancy profile.

In the meantime, what do researchers know about dormancy that can be useful to those in the industry right now?

First, when growing, purchasing or planting trees and shrubs, it's important to know where the seeds, liners or plant material originally came from. No matter where the plant is growing now—or will ultimately be planted—its biological clock is already programmed for its place of origin. So, if you're planting red maples in Chicago, don't buy them from a nursery in a warmer climate.

"I'm not saying that in every case there will be a problem," Shirazi cautions. "But, if I were buying trees to plant in Zone 5, I would get trees that had been grown in a similar climate. This is especially important if the tree is marginally hardy in the zone where you are planting it."

Similarly, if you're buying grafted plant material, it's important to know where the grafted plant's rootstock originated. The rootstock may not be sufficiently hardy for the top portion to perform to its full potential.

Wiegrefe recommends making use of regional selections and plant introduction programs. "This is an excellent way to obtain plant material that not only has compatible dormancy patterns for your area but also is adapted to local soils and other cultural requirements," she says. "Regional selections are becoming increasingly important as we learn more about how cultural requirements affect plants," she adds.

The Morton Arboretum participates in a plant introduction program called Chicagoland Grows in cooperation with the Chicago Botanic Garden and the Ornamental Growers Association of Northern Illinois. This program selects and evaluates plants for Northern Illinois, introducing into the trade those that meet performance criteria. Some other regional testing and introduction programs include Plant Select, which deals with plants for intermountain regions in the western United States, and Coordinated Educational and Marketing Assistance Program in Texas.

If you don't have a regional plant introduction program in your area, consult the staff of an arboretum near you. Visiting an arboretum to see how trees perform in your area is also a useful exercise. You can contact the American Association of Botanical Gardens and Arboreta (AABGA) for information about members in your area. The AABGA can be reached by calling 610-925-2500 or by writing to 351 Longwood Road, Kennett Square, PA 19348. The group can also be reached through its Web site: www.aabga.org/.

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Woody Plants Currently Being Evaluated by Morton Arboretum's Urban Horticulture Research Lab

State Extension Service. Evaluating plants for local performance is one of the many services Extension offices perform. Extension services are listed in the phone book under county government offices.

If you have read this far hoping to find a list of the chilling requirements or dormancy patterns for woody plants in your zone, you've zoomed past researchers on the Information Highway. Scientists all over the world are delving into these questions. Some are creating mathematical models to predict dormancy; others are studying the genetic and structural changes that take place as plants are subjected to near-lethal heat or cold. "Even though we have been doing this work on dormancy," Shirazi says with a shrug, "there is still a lot we don't yet know."

Patrice Pelletier is a freelance writer in Chicago and a part-time employee of The Morton Arboretum.

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- **Acer xiyabei 'Morton'** (state street miyabei maple)
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- **Acer saccharum 'Astis'** (steeple maple)
- **Amelanchier laevis 'Snowcloud'** P.P. 7203 (snowcloud serviceberry)
- **Azalea 'Cheerful Giant'** (exbury hybrid)
- **Betula 'Crimson Frost'** (crimson frost birch)
- **Buddleja davidii 'Royal Red'** (royal red butterfly bush)
- **Buxus sempervirens 'Schmidt'** (boxwood 'Schmidt')
- **Chamaecyparis pisifera filifera 'Golden Charm'** (Japanese falsecypress 'Golden Charm')
- **Clematis hybrid 'Ernest Markham'**
- **Clematis x jackmanii 'Lady Betty Balfour'**
- **Clematis tangutica 'Kugotia'** P.P.A.F.
- **Fraxinus nigra** (black ash)
- **Fraxinus pennsylvanica 'Rugby'** (prairie spire ash)
- **Hedera helix 'Basset'** (English ivy 'Basset')
- **Hydrangea paniculata 'Angel's Blush Ruby'** (panicule hydrangea angel's blush 'Ruby')
- **Ilex x meserveae 'Blue Prince'** (meserve hybrid holly 'Blue Prince')
- **Malus 'Cardinal'** P.P. 7147 (cardinal crabapple)
- **Malus 'Luwick'** (Luwick crabapple)
- **Picea pungens 'Chattanooga'** (Colorado spruce 'Chattanooga')
- **Pinus densiflora 'Umbraculifera Compacta'** (Japanese red pine 'Umbraculifera Compacta')
- **Populus simonii** (Simon poplar)
- **Prunus padus 'DTR 117'** (summer glow bird cherry)
- **Prunus subhirtella 'Pendula Rosea'** (Highan cherry 'Pendula Rosea')
- **Pyrus floribunda 'Westwood'** (Korean sunflowering pear)
- **Robinia pseudoacacia 'Lace Lady' Twisty Baby** (black locust 'Lace Lady' Twisty Baby)
- **Syringa pekinensis 'DTR 124'** P.P. 8951 (summer charm tree lilac)
- **Taxus cuspidata 'Emerald Spreader'** (Japanese yew 'Emerald Spreader')
- **Taxus 'Meyeri'**
- **Ulmus 'Accolade'** (accolade elm)
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WO#4185
Coping With Today's & Tomorrow's Labor Shortage

By Wayne Outlaw

In years past, an adequate labor pool was taken for granted. Without much effort, commercial tree care company owners could use the usual approaches of running ads in local papers or simply putting the word out to keep their crews filled. Finding skilled climbers has always been challenging, and shortages have been growing more acute in recent years.

But, as today's economy continues to grow and our labor force changes, it is becoming increasingly difficult to find the employees we need—especially younger, entry-level workers.

For experienced crew members and managers, the competition is also intense. We continually see key employees switching companies for better opportunities, both in and out of the industry. Your future as a company and as part of an industry rests on an ability to attract and keep younger workers. Initially, we know they may not be as productive as more experienced ones, but they are our future and we must focus on building for tomorrow.

We can't simply wait to see if this problem solves itself. It won't, and we will be in a worse situation because we waited. Information from the Bureau of Labor Statistics indicates a growing gap between the number of available workers, or what might be called the "true labor force," and the number of jobs available. (The "true labor force" is those who are available for work and excludes individuals who are temporarily between jobs, those who are virtually unemployable due to skill or ability deficiencies and those who are unemployed but not interested in finding work.)

This current gap is due to our positive economy and continued job expansion. In addition, there will be a slowing in the number of people entering the workforce for the foreseeable future. In short, more jobs are created each month than eligible workers entering the workforce. This gap will only continue to widen.

In companies that rely on entry-level workers drawn from the 17- to 22-year-old age group, this widening gap is particularly troublesome. For the company owner who requires employees to work long hours in less-than-ideal conditions (sometimes starting employees at lower salaries than other local industries), it is particularly difficult. What must be done to solve the problem?

Simply writing a better want ad, raising the starting pay, or adding an employee benefit is not sufficient to ensure a company has the human capital to get customers and provide the level of service to keep them. To have the manpower needed, companies must use innovative strategies. Focus on staffing as a strategic objective, just as you have with the acquisition of customers.

The time, energy and creativity normally associated with the acquisition and retention of customers should now be applied to attract and keep top employees, which are necessary to fuel growth and success. As the need for people continues to increase, arborists must innovate. Just as an arborist searches for and uses the best methods to care for trees and enable them to be healthy and grow, he or she must search for and use the best staffing methods.

Today's new ground for competition between companies is for human capital. Companies are actually acquiring competitors more for the capabilities of their workers, not market share or innovative products or services. The most successful organizations realize that their potential labor pool is determined not just by the local unemployment figures, but also by the competence required, and the attractiveness of the position and company. The higher the competence and the lower the attractiveness, the more difficult it will be to fill the position.

Companies are discovering the best practices from their industry and others and incorporating them into a process to ensure ample human capital is available. Like marketing, sales
or manufacturing, elements of staffing can be defined and made into a process or system that can assure adequate output. It has defined steps that produce predictable results. This predictability, in medium- and large-sized organizations, can be measured and managed in organizations.

Innovative companies realize they must keep their standards high and ensure they hire only top candidates. The cost of a poor hire can be devastating, especially to a small business. The first and foremost task of the organization is to ensure those hired "fit" the position. If the "fit" is good and the new climber has a natural affinity for the work with a capability to learn, he will be extremely productive. Your focus on ensuring individuals "fit" the position should be complemented by effective employee-development programs, sound management techniques, and most importantly, an innovative rewards system.

To create an organization that is more attractive, companies are measuring what employees and applicants think of their jobs and company. In a small company with several crews, this can be done by an informal survey with the owner asking employees for opinions and recommendations. In larger companies a more formal approach with an Attitude Survey is required. The objective of the survey is to learn what is affecting employee morale and reducing job satisfaction. It also solicits employee suggestions and looks for ways to improve.

A key concept that has been very successful is to create the perception with employees and job candidates that the company is the "employer of choice!" To create this perception, companies are looking to outside sources and experts to develop innovative strategies that work. They realize that because of the intense competition for employees, they must go beyond simply raising wages. They are learning ways to create a workplace that develops employee loyalty and increases employee productivity.

This improved workplace and its resulting perception of being the "employer of choice" makes recruiting and retention much easier. If your organization is "the employer of choice," when people think of arborists or comparable work, you will make acquiring and keeping the human capital necessary for your success much easier.

For today's tree care company owner, the quality of those hired, how they are rewarded and how well they are retained could very well be the most important strategy for the next millennium.

Wayne Outlaw, author of SMART STAFFING, will be the keynote speaker at TCI EXPO '99 in Indianapolis, Ind., Nov. 4, 1999. He will give two talks, one on recruitment and the other on employee retention. For more information, contact the National Arborist Association at 603-673-3311. Outlaw can be reached at (800) 347-9361 or www.smartstaffing.net.
Excel Hustler has introduced StumpCut'R for its 3000 and 4000 series of front-mounted turf tractors. StumpCut'R features include: Mobility - mounted on the zero-turn Hustler it can get in and out of position faster and easier; High Production - the PTO-powered, 15-inch diameter cutting wheel can cut stumps from up to 23 inches above to 14 inches below ground; Versatility - remove it from the tractor and store it while performing other duties like snow removal or mowing; and Simplicity - the tractor and steering system are simple to learn and the operators can become productive quickly. StumpCut'R has few moving parts and the cutting wheel uses industry-standard cutting teeth and pockets. For information contact Excel Industries, Inc. (800)395-4757; Web: www.excelhustler.com

S.D.P. Manufacturing, Inc. now offers the tree care industry a self-propelled, all-wheel-drive aerial lift that allows the user to pass through a 36-inch gate opening to access those hard-to-reach tree trimming areas. The 1999 EZ Hauler 2500 PLUS features a rugged, light, gravity-leveled bucket attachment with a reaching height of 35 feet. It boasts the power of a diesel or gasoline engine and is propelled by wireless remote control, so operators can position themselves into the most difficult tree cutting positions. For a free brochure and more details, contact S.D.P Manufacturing at 800-789-6253.

ASV's new Posi-Track 4810 is now available to replace the HD 4500 Series. The heart of the 4810 is the Maximum Tractation and Support System (MTSS) undercarriage. The rubber-tracked system has low ground pressure (3.0 psi), traction and versatility. The Caterpillar 3045T-model engine delivers 105 net horsepower, making it ASV's most powerful Posi-Track. Eighty percent of the rubber hoses found on the HD 4500 Series have been replaced with steel tubes in the 4810. On the loader arms, the size of the pins have been increased 50 percent. Other changes include: a redesigned hood that hinges to expose

Miller Machine releases to production the PRO 75SS Stump grinder for large skidsteer loaders. Evolved from the PRO 75S, the Super Skidsteer unit is intended for loaders with a minimum of 75 hp hydraulics. The unit weighs 1640 pounds, cuts five feet wide and 24 inches below grade. The 26-inch diameter, 1 ¼-inch thick cutter wheel employs 32 carbide cutting teeth arranged in the company's latest quad spiral pattern. Telescopic extension, weight package and 5-foot back-fill blade are standard. When combined with a large skidsteer, the unit is a powerful, productive machine, which increases the return on the skidsteer investment. For more information call 765-659-1524.
Shindaiwa introduces its reengineered, EPA and CARB-compliant, heavy-duty brushcutter, the B450. The objectives in developing the new brushcutter were to retain the strengths of the B45, enhance performance and durability while making it more environmentally friendly, and deliver better value to customers. It delivers the same horsepower (2.3) and performance but in a more eco-friendly manner. Other improvements include a longer shaft for longer cutting reach, an easy-to-service muffler that simplifies carbon removal, better cooling efficiency and tough spark plug cap and carburetor case that increase durability. For operator comfort and safety, it has a soft, anti-vibration elastomer handgrip, throttle cable and wires that are internally routed to prevent snagging, the engine start/stop switch is at the throttle lever and a throttle interlock ensures a firm grip before revving the engine. For more information, call Shindaiwa Inc. at 505-692-3070.

Bear Cat introduces its new 74S20, a 5-inch capacity hydraulic feed chipper. This high performance, mid-range chipper boasts a 20 hp Honda OHV engine with electric start and live hydraulic feed system. With a Croft adjustable 2-inch ball coupler, safety chains and large 225/75/15 15-inch tires for smoother towing and more stability, these machines will follow you almost anywhere. A standard programmable feed sensor with hour meter comes factory installed for ease of use. The 20-inch x 1 ¼-inch disc, machine balanced with four reversible chipper steel blades can be accessed quickly through a split-hinged chipper housing. For more information call 800-247-7335, or write to Bear Cat, PO Box 849, West Fargo, ND 58078-0849. Web site: www.bearcatproducts.com or E-mail: sales@crary.com

The Atlas Articulating Crane model 140.1 A24 folds to fit over a 16-foot body on a single axle truck and has a maximum reach of 71 feet 2 inches horizontal and an 81-foot tip height. It is equipped with the Safety Load Control (SLC) system that protects the crane from overloading. A high-speed winch with a single line pull of 2875 pounds is interconnected to the SLC system, allowing operation only within the capacity limitations of the crane. All options are available including rider seat, conventional controls and radio remote. For more information contact John Such at Crane & Shovel Sales Corp., 800-362-8494.

Reduce costly slip and fall injuries caused by ice and snow with STABlizers from 32north. Vibram soles with replaceable cleats bite into ice and snow, increasing productivity and safety while reducing employee fatigue. Worn by utility line workers, letter carriers and others who work outdoors. Detachable sole fastens easily with Velcro to virtually any boot, providing great winter traction. Contact 32north at PO Box 5007, Biddeford, ME 04007-5007; Web site: www.32north.com or call 800-782-2423.

Firewood Processing Equipment

<table>
<thead>
<tr>
<th>LOG SPLITTERS</th>
<th>CONVEYORS/LOADERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIGHT PROFESSIONAL MODELS</td>
<td>TOP-DRIVE Hydraulic Elevator Loaders</td>
</tr>
<tr>
<td>3-Point Tractor-Mount PTO - Powered Models</td>
<td>(12 to 32 FT. LENGTH)</td>
</tr>
<tr>
<td>FROM $1,495</td>
<td>FROM $2,845</td>
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<tr>
<td>MID-SIZED PROFESSIONAL MODELS</td>
<td>NEW Horizontal Feed Conveyors</td>
</tr>
<tr>
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</tr>
<tr>
<td>HEAVY DUTY BEAM, STANDARD 4-WAY WEDGE</td>
<td>FROM $2,730</td>
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<tr>
<td>LARGE PROFESSIONAL MODELS</td>
<td>FIREWOOD PROCESSORS</td>
</tr>
<tr>
<td>FROM $4,775</td>
<td>SELF-POWERED</td>
</tr>
<tr>
<td>3-Point Tractor-Mount PTO - Powered Models</td>
<td>FROM $18,250</td>
</tr>
<tr>
<td>AVAILABLE</td>
<td>PTO-POWERED</td>
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<tr>
<td>FROM $2,875</td>
<td>FROM $14,500</td>
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All BRUTE Machines come with a full 12-Month Warranty

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Melroe Buys Erskine

The Melroe Company of Fargo, N.D., has purchased Erskine Manufacturing Company, Inc. from owners Wayne and Arlene Gustafson. Erskine, a supplier of quality snowblower attachments, expanded its product offerings to include a broad range of hydraulically driven snowblowers for skid-steer loaders and a line of high-dump buckets, which are useful in loading large dump trucks. The company has also developed an engine-driven snowblower that mounts on an all-terrain vehicle (ATV). The company, located in Erskine, Minn., will continue to operate there under its present management. Melroe is the world's leading manufacturer and marketer of skid-steer loaders, compact hydraulic excavators and attachments. Bobcat is a registered trademark of Melroe, a unit of Ingersoll-Rand Company. In addition to providing Melroe with exclusive Bobcat-branded attachments, Erskine will continue to manufacture and market snowblowers and attachments for other brands of skid-steer loaders under the Erskine trademark. For more information contact Wanda Roath at 701-241-8740. E-mail: infocenter@bobcat.com or check their web site at www.bobcat.com

ACRT Expands West Coast Operations

ACRT, Inc.'s West Coast division has opened a new regional office in San Diego to provide Southern California with faster response. The new office is located at 8888 Clairemont Mesa Blvd., Suite R, San Diego, CA 92123. The West Coast division headquarters is located in Lodi, Calif.

The West Coast division provides western electric utilities with line clearance pre-planning and inspections, contract utility and urban foresters. Customized JTPA or WIA training, as well as on-site line clearance, tree care and urban forestry training courses for individual employers and group of employers can also be scheduled through either West Coast office. Their toll-free phone number is 877-560-8177. For complete information, visit ACRT on the Internet at www.acrtinc.com.

New Officers Elected

At its Sept. 8, 1999 meeting, the board of directors of Responsible Industry for a Sound Environment (RISE) elected officers for 1999-2000. Keclan Pulliam (Zeneca) was elected chairman; Laurie Treu (Uniroyal Chemical) vice chairman; and Bevan Cate (Van Waters & Rogers) treasurer. Jim Champion (Riverdale Chemical) will continue as past chairman and active board member.

Arborists interested in learning more about pesticide use, legislation and pests should visit the new RISE Web site at www.pestfacts.org.

Informative Journal

The American Society of Landscape Architects (ASLA) recently released a technical journal of interest to arborists. Entitled, "Structural Soil: A New Medium to Allow Urban Trees to Grow in Pavement," it presents "how to" reference data and includes "most-often-asked questions" on the topic, as well as an addendum on standard soil descriptions and specifications.

Written by Peter Trowbridge and Nina Bassuk, arborists will be interested in information on how to provide adequate soil volume for unimpeded root growth of urban trees under pavement, while also meeting specifications for a dense load-bearing medium on which to lay pavement.

For more information, contact the ASLA at 202-216-2362.

... continued on page 24

Peavey Tree Pruning Poles & Supplies

Peavey Manufacturing Company is pleased to offer a complete line of top quality pruning poles and equipment for the professional, as well as the amateur, who wants a quality made tool.

For years, we have made a limited line of pruner poles for the large industrial users, and we feel that if we can satisfy these customers on a nationwide basis, we can satisfy anyone else.

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E-mail: peavey@mint.net

We have a variety of poles, including white ash, in solid lengths; also six-foot sectional poles with lightweight aluminum couplers. Also available is a line of nonconductive, sectional or full-length, fiberglass poles for the electrical contractors.
When Asplundh began serving electric utilities seven decades ago, the crews took to the trees with handsaws, ropes and ladders. Now, we field thousands of crews and operate an extensive fleet of specialized equipment. Our capabilities now include a variety of related services.

But, the commitment that helped us grow remains the same. Even though times change, our commitment to value, efficiency, safety, and reliability mirror the commitment that you have made to your customers.

And that hasn’t changed for 70 years.
STIHL in United States for 25 Years

STIHL Incorporated celebrates 25 years of business in the United States. Begun in Germany in 1926, the U.S. facility opened in 1974 in Virginia Beach, Va. In 1977, STIHL broke ground on a manufacturing plant and new administrative offices in the Oceana West Industrial Park. This facility now encompasses almost 500,000 square feet under roof in a park-like setting of over 60 acres. To accommodate its growth, additional manufacturing processes were added and floor space was increased four times between 1983 and 1996. The most recent expansion began early in 1999. Since 1983, STIHL has invested more than $100,000,000 in expansions. They employ 1,000 people and sell products through more than 8,000 retailers in the United States.

STIHL began with the assembly of small, homeowner chain saws and has grown to become a major worldwide exporter of power equipment. They manufacture a full line of powerful, lightweight and versatile outdoor power equipment for homeowners and professional users. For more call 800-GO STIHL (467-8445) or visit their Web site at www.stihlusa.com

New England Grows Speaker Program of Interest to Arborists

“Inspired by Nature” is the theme of the New England Grows trade show and conference, Jan. 27-29, 2000, at the Hynes Convention Center in Boston, Mass. New England Grows has 920 booths and over 30 hours of educational programming. Certified professionals earn recertification credit from the Pesticide Bureaus of six New England states, New York, New Jersey and the ISA.

Among the speakers and topics of interest to arborists are:


♦ Nina Bassuk, Professor of Ornamental Horticulture, Cornell University: “The Right Plant in the Right Place: Is It Enough in the Urban Forest?” Practical methods of overcoming soil compaction combined with proper site assessment and plant selection help increase the health and longevity of the urban landscape.


♦ Dennis J. Souto, Entomologist, USDA Forest Service: “Y2K Bugs: Entomology for the New Year.” Status report on the newest and most important tree pests in the Northeast and management alternatives to minimize their impact.

♦ Walter E. Money, President, Guardian Tree Experts: “Gaining Control Through Sprays & Injections.” The “magic, myths and misconceptions” of spraying and injections and when, and in what ways, they can be compatible.

♦ Edward F. Gilman, Professor of Environmental Horticulture, University of Florida: “Mycorrhizae: The Silver Bullet?” Pros and cons of mycorrhizae as a soil amendment when planting and transplanting trees.

For more information, contact Jennifer Barth at 508-653-3009; Web site: www.NEGrows.org.

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- Industrial Quality Cutting Tools for 75 years

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Are you ready to stop drooling?

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See us at TCI EXPO STIHL
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Are you ready to work smart with convenient features like our side-access chain tensioner and Master Control Lever™?

Are you ready for less fatigue thanks to the 020T's extremely light weight - just 7.9 pounds?

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Before you knew it as the $649.95 Stihl 020T, but now that it's just $449.95 you can know what it's like to take one home. Quit window shopping, you're ready.

1 800 GO STIHL • www.stihlusa.com • Yellow Pages under "saws"
How large a saw should I use? Long bar or short? Fast r.p.m. or slow?

These typical questions focus on what many chain saw users feel to be important. In reality, it doesn’t make any difference how big, fast or small the saw is, if the saw chain is not doing its job. A large, 120cc saw with a dull saw chain may not cut through the wood and complete the job task any faster than a 25cc with a sharp chain.

Chain saw operators, especially those involved in commercial tree care, should project a professional image. You are more than a person with the task of removing a limb or tree with a chain saw. Selecting the right saw, adorning proper personal protective equipment, approaching the situation with a plan and making sure your saw chain is sharp are all measurable signs of a professional chain saw operator.

**Sharpen up!**

A crew using three or four saws during the day’s workload can reap the benefits of a sharp saw chain quickly. It’s not simply a matter of less wear and tear on equipment and people; it allows the equipment and people to produce more compared to the same equipment and people using dull chain. When I say dull I don’t mean ridiculously dull—just 5 percent duller than sharp is devastating to production and safety.

Let’s say we are cutting a log 20 inches in diameter and it takes a saw 20 seconds to make one cut. At only 5 percent slower, it takes 21 seconds for the next cut and so on. Soon, the delays add up into minutes. You might say that one second is not much of change. Well, let’s look at the same situation in smaller diameter. Hypothetical situation—maybe?

Let’s say a 6-inch limb takes five seconds to cut with a

---

**Grinding Systems**

Many saw users are against having their saw chains sharpened by a machine. If the grinder operator isn’t aware of how a grinder may overheat the tooth, it can spell disaster. Overheating the saw tooth changes the metal structure of the tooth and usually mangles the cutting edge beyond repair. If a quality grinder is used and the operator is trained in its use, the grinder can produce a quality sharpened saw chain in short order. Crews of any size should look into a grinding system to reduce chain waste and ensure proper saw chain maintenance. Quality grinders by companies like Silvey Mfg. can solve many chain problems with crew operations in the field.
The Fastest, Smoothest, Low-Kick Cutting Chain We've Ever Made

Vanguard 72V Series is simply the best 3/8-inch-pitch round-ground chisel chain we've ever made for arborists. It's a real performer for arborists who want a higher degree of chainsawing safety, yet value exceptional cutting speed and silky smoothness--attributes that really count in difficult pruning or take-down situations--whether you are up in a tree or in your bucket. This fine-tuned product has won Underwriters Laboratories certification for its low-kick out-of-box qualities.

1. Depth-gauge filing area located by a witness mark.
2. Increased cutter grind radius for excellent out-of-box performance.
3. Increased depth gauge angle for smooth entry into cut.
   • Oregon Vanguard 72V Series sharpens easily with a 7/32-inch file.
   • Streamlined depth gauge for improved performance life.
   • Advanced design gives cutters aggressive bite.
   • Wide gullet for greater chip flow.

BECAUSE EVERY CUT COUNTS.

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sharp chain. With your duller-than-it-should-be chain, it might take eight seconds to cut the same limb. You cut off 22 limbs from the tree. Each limb had to be cut twice to transport; that’s 2.2 minutes you lost on that one tree that a sharper chain would have saved you. If your chain didn’t get any duller in the time it took to cut those limbs, you just lost 36 cents on that tree alone (calculated at $10 per hour). If you do only 10 trees a week, that’s $14.40 per month on a three-second loss of cutting time. Now, add three saws running in a crew, multiplied by three crews, and quickly we are up to $129.60 we didn’t put in our pocket on this simple three-second calculation. Anyway, it’s not how much money we make, is it? It’s how much we can keep! That’s profit!

I worked on one project a few years ago that created a chain saw sharpening program out in the field. Production by a four-man crew was raised to the equivalent of a five-man crew simply by always keeping the saws sharp. There was less chain waste, more even chain, bar and sprocket wear, and increased productivity, because the operators were doing what they should be—cutting with less effort. It all adds up.

**Saw chain types**

There are numerous pitches of saw chain from 1/4 inch to 3/4 inch. Most saws in tree care use 3/8-inch pitch in either standard or extended pitch configurations. The extended pitch is most often found on smaller limbing and climbing saws, with the standard saw chain versions used on larger groundwork saws.

Chain sharpening differs slightly with each size and style of saw chain. Understanding a few basics can help us to realize a sharp or dull tooth. This is important if we are to know when to sharpen. The basics of tooth parts to consider are usually the same on most styles. Proper tools or sharpening device selection is important to achieve desired results with whatever saw chain your saw uses. Let’s look over a few to consider.

**Parts of a tooth**

1. **Depth Gauge**
   In front of the saw tooth is found its depth gauge. Sometimes called the drag or raker, this part regulates the thickness of the wood chip to be removed by the tooth. Too low a setting and the tooth will not be able to process it. The saw will not be able to pull the tooth through the wood fiber with enough power to clear the chip. Too high a setting and the tooth will not take enough fiber to form a chip. As a result, a lot of pressure is required to make progress through the log or limb.

2. **Point**
   The leading edge of the saw tooth is called the working corner. The middle of the corner is what we call the point. This point is the part of the tooth that starts the cut into the wood fiber. If the point is rolled over or dulled by abrasives in the cut, you must remove the damage before the tooth can successfully complete a woodchip.

3. **Side Plate**
   The side plate cutting edge of the tooth really does most of the work. When cutting, the side plate severs the long fibers of the limb, tree or log. It should be maintained to approximately a 90-degree angle. From the point to the lower edge of the side plate surfaced by the file, the angle should be almost vertical.

4. **Top Plate**
   The top cutting edge is responsible for beginning to separate the wood chip from the kerf. It also regulates the kerf or cut width by how far the tooth is moved to the side. The more top angle the tooth has, the farther the tooth is forced to the side of the kerf. Zero top angle moves the tooth very little and a 35-degree angle moves the tooth left or right to open a maximum kerf width.

5. **Chisel**
   On the underside, the top plate also has the important chisel angle. This angle works similarly to a splitting wedge that splits and separates the wood chip from the kerf. The angle you should try to maintain in this chisel area is approximately 45 degrees. The chisel angle works in close teamwork with the depth gauge. Too steep of an angle caused by either the filing of the round edge of the tooth or by removing depth gauge material can really affect cutting efficiency and safety.

Next month, we will visit the many types and sizes of saw chain and guide bars. I will attempt to explain what types to use and why. To analyze the many differences in saw chains, it’s good to understand tooth parts and how they work. I hope, given the information above, you can look a little differently at your saw chain.

If you have any questions or are interested in knowing more about the information in this article, contact Tim Ard by writing to: Forest Applications Training, Inc., P.O. Box 1048, Hiram, GA 30141. You can also see what Forest Applications Training is all about on their Web site at www.forestapps.com; or e-mail questions to info@forestapps.com.
Tree care is a craft that requires a great deal from the user as well as from the equipment. The 335XPT arborist saw is light and balanced, and features our exclusive ArborGrip, a textured handle with thumb and throttle finger supports to give you a stronger grip for better control. The powerful engine housed in a compact saw body ensures unbeatable power-to-weight ratio which makes it possible to cut bigger and larger branches in narrow and difficult positions. Husqvarna also offers a full line of specially designed safety gear, and we are proud to sponsor ArborMaster training programs. To find your nearest Husqvarna Power Retailer, just call 1-800-HUSKY 62. For information about ArborMaster Training, call 1-800-487-5958, ext. 8-4513.

Use of chain saws in trees should only be done by professionals with specific training.

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ArborGrip™
Balanced, textured top handle
Thumb grip
Throttle finger support
Built-in rope ring

Air Injection

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Tools

In order to keep saw teeth in proper shape and sharpness, you should first begin by inspecting each tooth and the chain loop in its entirety. Look at all five of the parts and angles. If there is any damage or if the cutting surfaces look shiny, it may be time to sharpen. To do this, you may have to recruit some new tools.

1. Round file and handle

When using a round file, even of the proper size, there are several variables that sometimes wreck a good filing attempt. You can hold the file too high, causing the side angle to be back-sloped and the chisel angle to be too steep. If you hold it too low, the side angle will be hooked and the chisel angle real thin.

2. File holder—guide

The file guide gives the user a good way to keep the file at the proper depth in the tooth. It secures the file to hold it steady, and, because it generally has a platform above the file, it keeps the file from riding too low in the tooth surface. Guides usually have angle marks embossed into them to reference proper angles while filing.

Depth gauge tools

Once the round cutting surface of the tooth is prepared, there is still one very important setting to take place. The raker or depth gauge must be adjusted. As the tooth is sharpened, the top plate of the tooth is removed. As you file the top plate back, it reduces in height. After three to five filings it is necessary to remove a bit of the depth gauge so the tooth can continue to take enough wood fiber. There are several types or styles of depth gauge tools.

1. Saddle style

This gauge rests on two to three of the cutter teeth. Either through the middle or end of the gauge, the depth gauge of one of the teeth sticks up through the tool. You would then take a flat file and remove any of the raker material protruding. The tool guards the depth gauge below the desired setting, keeping you from filing and removing too much. One less desirable feature of this tool is that it sets the depth gauge height based on the average height of the teeth on which it rests. If the saw teeth are not exactly the same length, the raker setting will not be uniform.

2. Point-to-base gauge

This tool rests over each tooth, taking the depth gauge height reading on each. Unlike the saddle type, this tool enables each tooth to have a desired depth gauge setting. Saw teeth may be irregular in length, but the raker setting will be consistent to the point height. This assures each tooth is performing to its designed potential.

This filing device is sold by Pferd and Husqvarna dealers (Sharp Force from Husky). It is unique because it holds the round file to achieve correct angles and has another file attached to set the raker. As you file through the tooth surface and shorten the tooth, it lowers the depth gauge file and sets the raker to proper depth in relation to each tooth's point height. This tool works, and is very simple to use. Two basic versions fit most popular chain sizes.

Tim Ard is owner of Forest Applications Training, Inc., in Hiram, Ga.
To many, a Shindaiwa is more than just a piece of landscaping equipment.

The Shindaiwa T230 grass trimmer boasts the industry's best power-to-weight ratio, meaning you finish more work without the fatigue of operating heavy equipment.

While your Shindaiwa won't host you a bachelor party, it will provide a long relationship. Such loyalty results from individually designed components that hold up to the toughest demands. So your Shindaiwa will always stand attentively by your side. Whatever the task may be. For additional information, call us at: 800-521-7733 or visit our website: www.shindaiwa.com.
Are You Recommending a Health Hazard for Your Clients?

Scott E. Seargeant

1 out of 5 pediatric visits are allergy related.

Asthma deaths top 5,000 per year... twice the rate 10 years ago and rising.

Lost wages from allergies and asthma exceeds 1 billion dollars.

Medical care from asthma exceeds 6 billion dollars.

10 million school days are missed due to allergy and asthma.
Are you responsible for your actions? Stop, do not plant or recommend that tree! Your actions just might cause your client to become sick or even die because you planted or recommended the wrong tree. Seriously, most tree recommendations are not properly researched especially when it comes to the health of your clients or the general public. Until now, we have been ignoring a fundamental characteristic of many plants (and trees) that we must now consider in order to stop a certain epidemic.

This plant characteristic is pollen, and the health problems associated with it are allergies, asthma, and other respiratory ailments and infections. Many trees produce an abundance of pollen that invades our environments at home, work and surrounding community contributing to these health problems.

Health statistics of allergies and asthma

Our exposure to pollen is extremely high, especially in the spring. Most medical personnel consider spring to be the only time we are susceptible to allergies and asthma caused by pollinating trees. We now know this isn’t true. We have planted so many trees native to other areas in the United States and the world that at any given time of the year there can be a pollen-producing, allergy-causing plant in bloom in your home landscape, at work or within your community.

For example, many of our popular landscape trees are allergy-producing and pollinate in the winter, including some cedars, junipers and elms. This is followed by late winter pollination of allergy-producing landscape trees like alder, almond, cypress and birch. During spring, we are hit with an assortment of allergy-producing trees, shrubs and winter weeds. Summer brings on the allergies caused by grasses. Many allergy-producing trees are in bloom at that time, however, and contribute heavily to our misery, including aspen/cottonwood, some alders, tree-of-heaven, buckeye, lilac, elderberry, and privet. During fall, very little if any pollination from trees is happening. Allergies during this time are largely caused by pollinating weeds.

Allergies and asthma are not just a local problem or an inner-city problem. They are two of the fastest rising diseases in the industrialized world. Allergies and asthma have been called the “Diseases of the New Millennium.” I totally agree.

The facts are alarming—not just in the numbers themselves but in the increase in all areas of allergy and asthma over the last 20 years. Nearly 60 million people in the United States suffer from allergies or asthma. Fifty to 60 percent of these people suffer from pollinating plants. Pollen is the number one allergen, causing more distress than dust mites, cats and dust combined.

Children miss 12 million school days every year due to allergies and asthma, making these two factors the number one reason why kids miss school. Two main reasons for the absenteeism in schools stem from the high number of allergy-producing trees planted on campus and the infrequent mowing of grass areas coupled with allowing long grass to lay...
Editor's Note: Allergy producing trees belong to a botanical order (a group of closely related plant families) of trees commonly called the aero-allergens. These trees rely on wind to pollinate, instead of insects or other means. They produce extremely small pollen that can be carried great distances to ensure pollination. Although it is probably a good idea to offer an “allergy-free” tree to an allergy-suffering client, you need to inform them that the planting of one “allergy-free” tree will not relieve their allergies due to the great distances that wind-borne pollen can travel.

Allergies and asthma hit our pocket books too. Loss of wages is in excess of one billion dollars per year. Asthma deaths top 5,000 per year and this rate is rising by as much as 8 percent per year. One out of five pediatric visits is allergy related. And the list goes on and on.

The biggest problem we face with respect to allergies and asthma is in our kids. Children ages 5 to 17 have the highest increase in allergies and asthma of any age group. There is no coincidence this is the same age of our children in school.

Can we make a difference?

Will planting allergy-free and low pollen producing trees really help the environment in which we live? The answer is yes! We spend 85 percent of our time in three major places—home, work and our surrounding community. If you have children, then add schools to the list. Studies completed in Tulare County, Calif., revealed that a typical residence has an average of seven allergy-producing plants in the landscape. This doesn’t include street trees, parkways, businesses or parks. The exposure we are under is tremendous, and add to it other indoor allergens and it is no wonder allergies and asthma are out of control.

I know of at least one pharmaceutical company that tests the effectiveness of their allergy medications in the park. Why? Because the parks across America are so inundated with pollen and other allergens they make for a great “outdoor experiment.”

Where do we start?

As arborists, the first step is to educate yourself about the plants that are allergy-free and those that are allergy-producing. My personal experiences with allergies and asthma led me to research different types of plants, the results of which I have compiled into a book entitled, “The Birds and the Bees Guide to Allergy-Free Living.” It is a guide to allergy-free plants and how to use them in a landscape.

It is a good idea to make an effort to plant allergy-free whenever possible. Ask your clients and family or associates if they are bothered by allergies or asthma. If so, recommend allergy-free and low pollen producing trees and shrubs. All landscape
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professionals, arborists and landscape architects should be sensitive to the public's needs when designing or recommending trees and shrubs in our public open spaces. 

Identifying allergy-free plants in the nursery

Those who do not know which plants are allergy-free or low pollen producing will soon be able to identify them in many local nurseries by looking for a universal allergy symbol on a special nursery tag. This allergy-free nursery tag will be displayed on trees, shrubs, flowers and ground cover. This allergy-free symbol depicts a hummingbird pollinating a trumpet flower in a circular design.

The idea behind the nursery tag is to help the average buyer easily identify the plants that they can use in their landscapes that will reduce their exposure to pollen. Most people are unaware they have a choice. Once people become educated, they invariably choose allergy-free and low pollen producing plants.

Allergy and asthma sufferers can find reductions in their symptoms by removing allergy-producing plants at home, work and in surrounding community.

The epicenters of allergy

I equate allergies to an earthquake. All earthquakes have an epicenter. The closer you are to the epicenter the more likely you are to become injured or killed. The same idea should be followed with regards to allergies and asthma. These allergy triggers are your “Epicenters of Allergy.” Most allergy sufferers have several “Allergy Epicenters.” These “Epicenters” should be avoided or changed to reduce or eliminate your allergy triggers.

How can you get involved?

On average, 20 percent of your clients will have allergies, asthma or both. To be a complete arborist, you must become sensitive to their allergy conditions. When selecting trees or planting plants for them, ask if they would like allergy-free or low pollen producing trees and plants. Explain the consequences of planting allergy-producing plants. Your expertise in the field can make a big difference in the health and welfare of your clients and others.

Adding allergy-free consulting to your business can also give you an edge on your competition and increase your bottom line while improving the health of your urban environment. For more information concerning allergy-free or allergy-producing plants call toll free 1-888-236-1999.

Scott E. Seargeant is an arborist, author and allergy consultant in Visalia, Calif.
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Budget Season in Washington Produces a Flurry of Activity

At press time, federal regulatory agencies are inhaling deeply while they await word from Congress on funding for what is their current fiscal year. New programs and initiatives are in limbo, while regulators try to anticipate the funding they’ll receive. This article looks at major initiatives from the three regulatory agencies impacting tree care businesses the most—EPA, DOT and OSHA.

OSHA
Injury, Illness Reporting Rule Delayed

OSHA Administrator Charles Jeffress announced on Sept. 14 that he is delaying the implementation of the injury and illness record-keeping requirement for another year, providing employers until January 2001 to comply. Jeffress says he still intends to publish the final revisions by the end of 1999, but OSHA will have to delay the effective date until Jan. 2001 because its educational materials and outreach programs cannot be in place by then. Since employers maintain records on a calendar-year basis, the one-year delay would give OSHA 12 months to ensure that employers are aware of and ready for the new requirements. It is critical to the success of the new system for employers to have the training and support they need to help them make the transition from the current regulations to the new ones.

OSHA’s current record-keeping rule, in place since the 1970s, requires employers to record details of work-related injuries and illnesses on the OSHA 200 Form. Currently, OSHA requires the employer to maintain a log of illnesses and injuries throughout the year, and to post a portion of the information, including the total injuries and illnesses, from Feb. 1 to March 1 of the following year.

OSHA has been developing the revised regulations and updated forms for the recording of data since the late 1980s.

DOT
Legislation to Create New Agency

Congress is entertaining legislation that would create a new National Motor Carrier Administration, a separate modal agency to regulate commercial motor vehicles within the Department of Transportation.

Heading the new agency, slated to start a year from now, would be a Senate-confirmed administrator, a chief safety officer and a regulatory ombudsman.

The Motor Carrier Safety Act of 1999 (H.R. 2679) and the Motor Carrier Safety Improvement Act of 1999 (S. 1501), in addition to moving trucking and bus safety oversight to a new DOT agency, include several provisions aimed at boosting truck safety.

The bills would require DOT to issue regulations disqualifying Commercial Drivers License (CDL) holders convicted of serious traffic offenses while operating motor vehicles other than commercial motor vehicles (CMVs). Both would require state and local law enforcement officers to identify CDL holders when making routine traffic stops. Such offenses would carry the same disqualification weight as similar offenses made while operating a CMV.

The Senate version of the measure, introduced by presidential hopeful John McCain (R.-Ariz.), has more bite than the House version. It prevents states from using conviction-masking programs for CDL holders and provides funding as well as other mechanisms for states and local jurisdictions to improve the reporting of traffic citations and violations.

What effect, if any, these proposals will have on light- and medium-duty service fleets, such as those in the tree care industry, remains to be seen. With the goal of finding some means of regulatory relief for the managers of the light and medium-duty fleets that make up the tree care industry, the National Arborist Association will continue to monitor this and related legislation.
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Peter Gerstenberger is director of business management, safety & education for the National Arborist Association.

For information on EAGLE lifts, call: 1-800-824-9776

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Events & Seminars

November 4-6, 1999
TCI EXPO '99
Indiana Convention Center & RCA Dome
Indianapolis, Indiana
Contact: Carol Crossland (800) 733-2622

November 5-6, 1999
Dealy Plaza Tree-Newal
Texas Chapter ISA
Dealy Plaza, Dallas, TX
Contact: Kevin Bassett, (972) 442-1524

November 8-10, 1999
Desert Green III Las Vegas
Conference, Golf Tournament, & Student Career Day at Henderson Convention Center
Henderson, NV
Contact: ML Robinson, (702)222-3130

November 9-11, 1999
Penn State Golf Turf Conference
State College, PA
Contact: Peter Landschoot (814) 863-1017

November 12-16, 1999
PLCAA
20th Annual Lawn & Landscape Conference/Green Industry Expo
Baltimore, MD
Contact: PLCAA (800) 458-3466

November 16, 17, 18 1999
Small Engines
Cook College-Office of Continuing Professional Education
New Brunswick, NJ
Contact: Kurt Martens (732) 932-8451

November 18, 1999
Plant Health Care Workshop
Michigan Forestry and Park Association
Union Building; MSU
Contact: Ann Ashby (517) 482-5530

December 9 - 10, 1999
Dr. Alex Shigo
Tree Chemistry: Chemistry of Fertilizer and Pesticide Applications
Portsmouth, NH
Contact: (603) 436-4804

January 11-13
Eastern PA Turf Conference & Trade Show at Valley Forge Convention Center
King of Prussia, PA
Contact: Michael Smith (610) 828-0253

January 16, 17-18, 2000
Empire State Tree Conference
The Sheraton Civic Center Hotel
Poughkeepsie, NY
Contact: (518) 453-6461

January 19-21, 2000
Mid-Am Trade Show
Wauconda, IL
Contact: (847) 526-2010

January 20, 2000
Maryland Arborist Association's 20th Annual Recertification Seminar
Turf Valley Hotel & Country Club
Ellicott City, MD
Contact: (301) 724-7337

January 23-24, 2000
Joint Nebraska Arborists Association and NNLA Winter Conference
Omaha, NE
Contact: (402) 476-3852

January 25-26, 2000
Integrated Pest Management
Cook College-Office of Continuing Professional Education
New Brunswick, NJ
Contact: Kurt Martens (732) 932-8451

January 25 - 27, 2000
40th VA Turf and Landscape Conference & Trade Show
Richmond, VA
Contact: Susan Floyd (540) 942-8873 or Dr. David Chalmers at (540) 231-9738

January 26-28, 2000
2000 Utah Green Industry Conference & Trade Show
Dixie Center, St. George, Utah
Utah Nursery & Landscape Association
Contact: (801) 484-4426

January 27, 2000
Northeastern PA Turf School & Trade Show
The Woodlands Inn & Resort
Contact: Andrew McNitt (814) 863-1368

January 27-28, 2000
Think Trees New Mexico
Albuquerque, NM
Contact: Cooperative Extension Service at (505) 243-1386

January 27-29, 2000
New England Grows
Hynes Convention Center
Boston, MA
Contact: 508-653-3009

January 28, 2000
Woody Plant Workshop: Hollies
The Scott Arboretum
Swathmore, PA
Contact: (610) 328-8025

February 1-3, 2000
Trees and Utilities Conference
National Arbor Day Foundation
Lied Convention Center
Nebraska City, NE
Contact: (402) 474-5655

February 8-9, 2000
Integrated Pest Management
Cook College-Office of Continuing Professional Education
New Brunswick, NJ
Contact: Kurt Martens (732) 932-8451

February 15-20, 2000
National Arborist Association
Winter Management Conference
Southampton Princess
Southampton, Bermuda
Contact: Carol Crossland (603) 673-3311

Send information on your event to: Tree Care Industry, PO Box 1094, Amherst, NH 03031-1094.
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Preventative Maintenance For Climbing Equipment

By: Jeffrey Lee, Branch Management, Riverside, CA (909) 276-8060
Branch Management—specializing in educational programs and training for the tree care professional
Sponsored by The Bishop Company for the advancement of our industry.

Big Al Fontaine has provided all the latest equipment to his #1 climber, Max Bunyan - saddles, ropes, snapclips, etc. Without a doubt, Max can work skillfully high above the ground with amazing grace and control, trusting his life to his climbing equipment. Let’s take a peek at what is preventing this arborist from slamming to the ground like an earth-bound Polaris missile.

In addition to purchasing the latest equipment, Big Al has made it even more valuable - TRAINING. Not only has Al purchased the equipment, but he has also taken the time to teach Max how to inspect and maintain his ropes, saddle and hardware.

“Employers shall instruct their employees in the proper use of all equipment provided for them and shall require that safe working practices be followed ...” (ANSIZ133.3-1994, 3.1.2.)

Inspect Equipment: Inspect ropes for frays, cuts or hour glassing, each time a climb is at hand. Saddles should be inspected daily for loose or missing rivets, and for torn stitching which might reduce the saddle’s effectiveness. Snaps and carabiners should be checked for excessive wear and loose parts of the spring-loaded mechanism.

Store Equipment Properly: The key to proper equipment maintenance is to avoid nasty situations that might damage the safety properties of equipment. Oil, gas, and sharp objects are all unfriendly to climbing equipment. Store such items separately to prevent them from becoming a problem. Try to avoid leaving rope coiled up in a tight ball in the truck overnight. A rope bag is a fine alternative. A good rule of thumb is to hang your equipment up to air out and dry whenever it is not in use. Treat your equipment like a prized possession.

Communicate: Even with proper maintenance, all climbing equipment will eventually wear out or become “undesirable.” Be sure to communicate the condition of equipment to foremen, supervisors, company owners, etc. Otherwise those people will have no way of knowing when it is time to replace old equipment. It’s also a good idea for management folks to shop up on the job site and take a quick gander for themselves. If nothing else, that will allow field personnel to see that everyone is on the same team when safety is involved.

Lastly, don’t wait for disaster to strike! Replace equipment before it fails. A good training program, which includes a daily inspection routine, will identify problems and uncover warning signs of potential hazards in equipment. The ultimate goal is the prevention of accidents (zero tolerance). Like Big Al and Max, everyone (including our customers) can enjoy a safe, accident-free environment.

"Big Al Fontaine"

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Many Americans experience job burnout. Both employees and employers can reach a point where they begin to lose their value to the company because they do not care, they are no longer challenged by the job, or stress of the job causes both mental and physical problems. What is burnout? Can burnout be prevented?

One way of understanding burnout is by studying the Basic Model of Motivation.

As shown above, all behavior and action are driven or energized by a need. When we recognize we have a need and the drive gets to a certain point, then we act to get satisfaction. Once a need has been satisfied, a new need begins to drive our action or behavior. But what if after we act a blockage or barrier gets in our way of getting to complete satisfaction?

As shown above, this blockage or barrier will cause alternate behaviors, such as frustration, anxiety, distress or burnout. If we cannot get satisfaction, we begin to lose interest, our business or job will suffer, customer service declines and ultimately, the business will fail.

Many factors can affect burnout, such as age, family, supervisors, type of job, health, etc.

**Symptoms of burnout may include the following:**

A. Constant feeling of fatigue and exhaustion

B. Sleep changes or insomnia

C. Changes in eating habits

D. Increase in illness incidents

E. Mood swings

F. Depression

G. Denial—"Nothing is the matter, everything is fine."

H. Detachment

I. Can't derive pleasure from the job

J. Hating the job, company or customer.
How can burnout be fixed? First, we need to identify the “needs” that are currently driving our actions. Second, we need to identify the blockages or barriers that are preventing us from getting satisfaction. We must take responsibilities for our burnout and the burnout of people we employ. We must own it.

Burnout remedies might include the following:
A. Reward yourself and others for achievements.
B. Get involved outside of the job through social networks.
C. Success can be a burnout, so set new goals or challenges.
D. Recognize time as a resource—don’t let time control you—you must control it.
E. Vacations—get away.
F. Change the routine—variety sparks new interest.
G. Quit worrying about five years from now.
H. Re-design your life/job and let go of the things you have no control over.
I. Exercise.
J. Learn not to take work home with you—be able to change roles from work life to personal life.

Finally, understand personal motivation—the secret to success and satisfaction. Personal motivation means the development of inner strength, conscious willpower, overwhelming desire and the determination to reach any goal that you, personally, want to achieve. This ability comes from within people and is a quality that all of us possess to a greater or lesser degree.

How do you motivate yourself? Where do you begin? You start with a frank, honest self-appraisal and ask yourself these questions:

1. Where do I stand now? Evaluate your strengths and your weaknesses, your assets and liabilities. Put the answers down in black and white to show exactly where you stand now. Face yourself squarely, honestly, realistically.

2. What are my goals? Do you have any definite aims or goals? Do you know what you really want in each of the most important areas of your life such as physically, spiritually, mentally, finan-
cially, and socially, your home and family life and your job environment?

Do you know what your short-range goals are and your long-range goals are in each of these areas?

After you’ve answered these questions, you may still ask, “How do I motivate myself? How can I become successful through personal motivation?”

3. Crystallize your thinking. Determine what specific goals you want to achieve—short-range and long-range—then write this information down.

Writing crystallizes thought and thought motivates action. Be specific about your goals: Don’t generalize or use vague terms. Use vivid imagination. Dream. We must develop the faculty of seeing with our mind’s eye; seeing concisely, exactly what we imagine.

There is a universal law: “We tend to draw to ourselves that which we set out from ourselves.” No man can attract to himself what his thought repels. We become precisely that which we imagine ourselves to be. Low aim is only low self-esteem expressing itself. When your goals are clear and vivid, they act as a magnet to draw you to them.

Goal setting is the most important positive action of your life. When you’ve written this down, dedicate yourself to its attainment. Do this with honest zeal and singleness of purpose and with unwavering “one-trackmanship.”

4. Develop a plan for achieving your goal and a deadline for its attainment. This detailed plan is the road map, the design that will guide you to your goal. The plan must necessarily list the obstacles and the roadblocks between where you are now and where you want to go and, also, how you intend to get around them, through them or over them.

Be frank with yourself; remember your strengths and your weaknesses, your assets and your liabilities. Write them out, just as you did with your goals. Also, write down very clearly your way around the obstacles and the roadblocks.

5. Develop a sincere desire for the things you want in life. A burning desire is the greatest motivator of every human action. Unquestionably, the degree of success you achieve depends on the amount of sincere desire you have.

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visualized exactly what you want in each area of your life, desire will add strength to your purpose; it will improve your self-image. Also at this point, you can determine the very real difference between "wish" and "desire." You can discover the difference easily by asking yourself these three questions:

a) What are the obstacles and roadblocks I will have to overcome to achieve my goals?

b) What are the rewards if I attain them?

c) Is it worth it to me?

If your answers to the questions are "yes," you’ll know you have genuine desire.

6. Develop confidence in yourself and your own abilities. Confidence in yourself helps you to deal honestly with your shortcomings and compels you to make consistent corrections.

Confidence comes from experience, which comes from know-how. Know-how comes from having the courage to submit yourself to obstacles, situations and circumstances that the average person shies away from. People who lack confidence are not goal-directed but stand on the sidelines as passive bystanders.

Confidence stimulates your creative imagination. No matter what you undertake, you will never do it until you think you can. You will never master it until you have the confidence in yourself to do the deed first in your own mind. It must be mentally accomplished before it can be materially accomplished.

The primary element at the beginning of any enterprise—the one factor, which will guarantee its success—is confidence that it can be done.

7. Develop a dogged determination to follow through on your plan. Determination is persistency. If you make a decision, plan a course of action or make a resolution—but then ignore your intention—you’ll form a habit of failure. When you make up your mind to follow your plan of personal motivation, do it! Let nothing or no one interfere.

You can further develop your determination by reviewing your written plan often and concentrating on the rewards. Thus, your desire and determination will stimulate a flow of dynamic and positive direction to keep you on course until your aims are realized.

A person who is success-minded has a success-consciousness and success-awareness; he or she lives with positive expectancy. When you apply these points in a plan for your own personal motivation, when you develop success attitudes and success habits and have a plan of action, you’ll find yourself living with positive expectancy!

Try not to "hang out" with negative, pessimistic people. Think positive. Exercise your thinking. Take responsibility for burnout. Reward yourself and others for getting to satisfaction and goal accomplishment. Learn from the past, but don’t dwell on it.

By paying attention to symptoms, understanding the nature and causes of burnout and by putting our personal, career and job goals into perspective, we can all learn to control our jobs, rather than letting our jobs control us.

Robert J. Ash is a professor at Santiago Canyon College in Orange, California.
NAA salutes the recipients of the 1999 President’s Award

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Arboriculture: History and Development in North America chronicles the people, events, materials and practices that created this profession. It is the first and only book to do this. In his newly released book, Dr. Richard J. Campana describes the origin and development of three major tree care companies: Davey, Bartlett and Asplundh. He includes the history of two organizations (International Society of Arboriculture and National Arborist Association) that formed to determine and recommend scientifically established and effective tree care practices. He describes the history, use and usefulness of many tree care materials and practices, including cavity filling, spraying, pruning, fertilizing, wound treatment, cabling, bracing and lightning protection.

Arboriculture is the selection, planting, care and maintenance of amenity trees, i.e., the trees that are useful and appreciated as living specimens, not those that are harvested for fruits, nuts, lumber or wood chips. Trees located on home sites, on institution grounds, along city streets and in public and private parks have been valued for centuries. Only after these trees were threatened or destroyed by major hurricanes, widespread insect infestations or systemic disease attacks did arboriculture become widely recognized as a profession. Distribution of utility services through overhead lines also increased the value of good tree care practices. These developments are brought to life in Arboriculture: History and Development in North America.

For all arborists who feel a love and pride in the profession, this book is an essential purchase. All members of ISA and NAA can purchase the book for only $39.95 plus $7.00 shipping and handling. Call, write or e-mail the ISA today. I assure you that you will be pleased with the quality, format, content and knowledge found in this book.
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Managing Golf Course Trees

By Sharon Lilly

Golf Course Tree Management contains a wealth of knowledge and practical information to help make decisions about some of the most valuable assets on a golf course. The book provides the information necessary to write comprehensive maintenance specifications, and explains how to select a qualified arborist. For more information, contact 1-888-ISA-TREE.
Superintendents are expected to keep greens true and fairways lush. They also need to understand patterns of tree failure that will help them recognize risk factors.

The value & importance of trees on golf courses

The architectural design of most golf courses depends heavily on trees. Trees are used to direct the fairways, defining and controlling the line of play. They delineate boundaries from one fairway to the next, or areas that are out of play. Sometimes trees create a chute that golfers must negotiate to land in play. They create doglegs, increasing the challenge of the course. The height of their lowest branches may force a low shot, or the height of their canopy tops may allow golfers to clear them. Trees may be used to "guard" the greens, challenging even the most highly skilled. Trees force golfers to choose routes of play.

Trees visually enhance a golf course. They are the vital third dimension, defining spaces and giving a feeling of privacy and comfort. Trees create the outdoor "walls" of the landscape, around which the other elements flow. They are used to create backdrop effects around greens and tees. They provide depth perception for players aiming for greens. They tie the elements of the course together and provide a sense of proportion. At the same time, however, they are often in direct competition with the turf below.

Trees vs. turf

Trees and turf tend to be mutually exclusive in nature. There are some exceptions, such as oak savannas, where frequent fires limit the establishment of new trees. But for the most part, you won't see many trees growing in the prairies or grasslands, and grass is not common on the forest floor.

The landscape of the golf course is an unnatural ecosystem. Man forces two somewhat incompatible plant types together and expects optimum performance from each. There are, of course, some commonalities—trees and turf both need sunlight, water and the same basic nutrients. The problem is, these shared needs lead to competition. To compound the problem, maintenance needs for each can be detrimental to the other.

Trees may suffer from mower and trimmer damage, herbicide injury, excess fertilization and irrigation-related problems. Superintendents struggle to maintain the turf while battling shade, surface roots and debris from nearby trees. Moreover, the tolerance for health problems of either trees or turf is very low on most golf courses. This presents some intense plant health care scenarios, and requires that managers have a clear understanding of tree health requirements.
Understand tree health: A balanced budget

Sometimes the growth and development of trees is better understood in terms of an economic analogy. A tree's sole source of income (food) is the sugar produced in photosynthesis. Limiting factors include the number and shape of the leaves, available sunlight, water and carbon dioxide, and adequate supplies of a few essential minerals. Each branch must sustain itself, but also must pay "taxes" in the form of sugar contributions to parent branches, trunk and roots.

Health problems such as nutrient deficiencies, drought and defoliating pests can dramatically reduce the income potential. In such cases, the tree must draw out of savings (stored starch reserves) enough money to support itself until more income can be generated.

When a branch is pruned, most of what is removed is the stored starch for that branch. But each branch pruned further reduces the "tax base" for the rest of the tree. Furthermore, some reserves will be required to close and defend the wound. Young trees have a high income to expense ratio and are very tolerant of pruning. In addition, wounds are relatively small and easily closed.

As trees mature, they grow larger in bulk. Although they have a large savings capacity, their income to expense ratio decreases with each passing year. Very large, mature trees grow little in height and spread, and put out approximately the same leaf volume each year. They are, at this point, on a "fixed income." Nevertheless, their tax rates do not decrease. Health stresses can be very serious for these senior citizens that lack the vitality to mount strong defenses against disease and decay. Removal of branches at this point reduces the sorely needed income potential of the tree. If a large wound is created, it will probably never close, and may lead to significant decay if the tree lacks the defense capability to compartmentalize.

If tree caretakers have a better appreciation of how trees make a living, they can make informed decisions regarding tree maintenance. All arboricultural practices have an impact on the health of the tree. Some, such as pruning, cabling and the installation of lightning protection, wound the tree, yet the benefits must be weighed against the injuries. Other treatments, such as fertilization, can be beneficial when required, but harmful when administered to excess. It is essential to understand tree biology before attempting to diagnose problems and recommend a course of action.

Tree longevity

There are two aspects to the longevity of a tree on a golf course: health and structural security. Obviously, a healthier tree will have a longer service life on the course. Yet a tree can be relatively healthy and be totally unsafe. Tree health and tree structure must both be monitored and managed if trees are to be maintained on a golf course.

One of the benefits of having trees on a golf course is the mitigation of potential hazards created by golfers hitting errant shots. Trees located along the boundaries of a course can protect adjacent properties and roads from wayward golf balls. Trees between the fairways not only define the holes, but also help protect golfers from the hooks and slices hit by their fellow players.

Yet the trees themselves can present some inherent dangers. Trees can fall over or drop large limbs that can cause significant damage, personal injury, or worse, a fatality. Golf course owners and managers, and the people in charge of caring for trees, have a duty of care for the staff and players on the course. In fact, golf course superintendents, since they are presumed to have knowledge of the grounds and proper maintenance practices, may be held to a higher standard of duty than general citizens.

Caring for trees on a golf course can be viewed as a process of risk management. All trees pose a certain degree of risk. As the trees grow larger and more mature, the level of risk increases. Obviously superintendents do not want to cut down all the large, mature trees on the course. Therefore, trees must be managed at a level of risk that is acceptable. Since the superintendent bears responsibility for any decisions made regarding the trees, those decisions must be based on the latest information and technology available.

Identifying potential hazards

The ability to predict tree failure is limited at best. You cannot always see defects, especially those inside the tree or beneath the ground, and the forces of nature are quite unpredictable. With experience, however, you can come to understand patterns of failure that will help you recognize risk factors. For example, forest edge trees
caused the failure was known of or should have been known to exist.

A fallen tree or branch if the defect that caused damage or personal injuries. Many cases where trees have fallen or broken and owners using the Act of God defense in court. There are many legal precedents for landowners determining whether they are entitled to rule that management either had constructive knowledge of, or should have had knowledge of, potential hazards—should the question of negligence arise.

Part of risk assessment is evaluating hazards and making recommendations for abatement. Some trees will pose an unacceptable risk of overall failure and will need to be removed. On a property with many mature trees, though, even the immediacy of removal may have to be prioritized. If a tree has been condemned due to structural hazards, no competent manager will want to delay its removal—the liability risk is too great. On the other hand, if dozens of trees have been slated for immediate removal, you have to proceed with those that received the greatest hazard rating first.

Unfortunately, convincing a greens committee or management board to allow you to remove any trees can sometimes seem impossible. Members often consider the trees on a course to be sacred. Your consulting arborist can be your ally throughout the process, helping you to build a logical case and defend your proposition. If the members of the board or committee can be helped to understand the biological situation, or the potential for injury to people or property, they will be more likely to see things your way.

Sharon Lilly is director of technical resources for ISA and author of Golf Course Tree Management, a resource for anyone who maintains golf course trees.
Join Your Peers in Bermuda!

February 15-20, 2000

The speakers are set and the dolphins are ready for this year’s Winter Management Conference. Join us for the premier educational, social and networking opportunity available to owners and managers of tree care companies. Read on for a brief description of the WMC 2000 education program.

Taking the High Road
With Frank Bucaro
Ethics can be a valuable asset or a formidable enemy to successful endeavors. This presentation will help participants understand how emphasizing ethics can help to foster an environment where: a) ethical behavior is valued; b) ethical behavior is considered the norm; and c) solid ethical decisions help contribute to long-term success.

Vision & Value:
Secrets of Peak Performers
With James Ray
If there were two keys that would guarantee you instant increased results in generating more revenue, creating additional repeat and referral business, and building a more cohesive team, would you be willing to invest your time to learn what many people forget?

Take a step back to the basics and then continue to build from a strong foundation. Ray will reinforce these founding principles and teach you the keys that all high achievers utilize for consistent results—keys that guarantee performance. In partnership with Cummins Michigan, Inc., and Buckingham Manufacturing Co.

Succession Planning
With Ronald Reece
All businesses must concern themselves with succession and continuity planning. Family businesses add different dimensions which need addressing. This presentation combines lecture and audience participation to examine the issue of business continuity, and then to demonstrate a process to guide owners as they consider how to make their businesses survive generational transitions.

11 Marketing Ideas to Turbo-charge Your Business
With Joe Bonura
Are you ready to move your business to the next level of success? This high-energy session will give you 11 powerful, easy-to-use marketing ideas that you can apply to your business now.

Discover how to: increase business without spending a lot of money; reach beyond your comfort zone to create over-the-edge ideas; implement a marketing plan that works in the real world; and apply the five basic principles of success.

How to Communicate with Anyone, Anywhere, Anytime
With David Richardson
A dynamic, highly-participatory program guaranteed to help you develop and enhance productive relationships with your customers. Come to the meeting with a list of your ten most difficult customers. Leave with concrete solutions which will enable you to sell them much more effectively.

2001 - A Building Odyssey
With Ira Blumenthal
This spirited session is designed to offer attendees ideas, information, education, actionable data and motivation on creating, if not capitalizing on, the logical and likely future of our world, industry and businesses. From consolidation to government intervention ... from E-commerce to brand bundling ... from changing consumer groups to new competitive sets ... “Change is inevitable, Growth is optional.”

For more information about the National Arborist Association’s Winter Management Conference, call 1-800-733-2622.
Basic Training for Tree Climbers

New five-part video series your latest training tool

To make it to the top, you need to work from the ground up. Basic Training for Tree Climbers uses three of the world’s best climbers to teach you and your crews the fundamentals of production tree climbing. International Tree Climbing champions, Ken Palmer and Rip Tompkins, team up with veteran climbing instructor, Robert Phillips, to demonstrate the skills required to become a top production tree climber.

Safe and efficient tree climbing requires the proper equipment and training. Although videotapes and workbooks are no substitute for hands-on training, this video series will be the most valuable tool in your training curriculum. Ken, Rip, and Robert teach the basics of tree climbing in an easy-to-understand field application format.

In the first video, Getting Started, you will learn the advantages and disadvantages of the various types of climbing saddles, personal lanyards, snaps and carabiners, and other climbing gear. The program emphasizes the importance of a daily gear inspection and the flaws and defects that may make a piece of equipment unsafe for use. Viewers will learn how to perform a pre-climb inspection of the tree and site. This video shows how to tie, dress, and set important climbing knots, and compares the characteristics of the most popular climbing hitches.

In the second video, Rope Installation and Techniques for Ascending, Robert demonstrates techniques for getting a line into a tree, while Rip and Ken show how to manipulate and isolate a throwline. You will learn body thrust climbing and footlock climbing, including the proper use of a Prusik loop in secured footlocking.

The third video, Using Climbing Spurs, covers all aspects of using climbing spurs in trees, including selection, fitting, wearing, and maintaining the climbing spur, as well as proper climbing technique. Climb-

46’ of side reach. Nothing reaches more trees than the MTI S5. Well, almost nothing.

Talk about a natural selection. The MTI S5 has the most side reach in its class. 46 feet of it. This, coupled with up to 60 feet of working height, gives you unparalleled maneuverability and increases your productivity because you don’t have to re-set your truck as often. To keep maintenance to a minimum, the MTI S5 incorporates cable-free design and hydraulic cylinders to lift the boom.

Units are ready to roll right now, normally shipping within days of order placement to get to your job site as soon as you need them.

It’s a jungle out there. Choose the lift that sets its goals high – and reaches them. The MTI S5.
Robert Phillips demonstrates technique while Sharon Lilly (center) of ISA and Ken Palmer (right) observe a run-through of a scene.

Rip Tompkins (far left) and Robert Phillips discuss climbing equipment preparation as the cameras roll.

ERS are reminded that climbing spurs can be very useful in tree climbing, but since they can injure trees, they should only be used on trees that are being removed.

Tree climbers must be able to access all parts of a tree's canopy to do their job effectively. Video 4, *Tying-In and Positioning Strategies*, emphasizes one of the most important lessons for new climbers—selecting a tie-in point that is safe and effective. You will learn how to advance your climbing line, how to use the personal lanyard, and how to install and retrieve a false crotch. In addition, you will see how to install a redirect and use it to your advantage in accessing hard-to-reach branch tips.

The fifth video, *Climbing Techniques and Working in a Tree*, discusses limb walking and positioning techniques. It shows how to re-crotch and double crotch, to improve your climbing skills. Ken, Rip, and Robert share some of the tricks they've learned through years of experience to make working in a tree safer, easier, and more efficient.

The five, handsomely-packaged videos come with a fully illustrated workbook, which reinforces all of the information in the videos. The ISA Certification CEU tests included in the workbook are worth 6 credits. Additional workbooks can be purchased separately so that each member of your crew can have a copy.

Best of all, this program was jointly produced by the International Society of Arboriculture and the National Arborist Association, organizations with solid reputations for producing high-quality educational and training tools for arborists. For more information about ordering this video series, please turn to page 108.
The Internet & Tree Care Businesses

By Robert Underwood
The World Wide Web is here to stay. Your tree care business is here for the long haul; at least few of us start a business planning to fail. To survive in today's business world, we must provide our customers with the best tree care possible. The Web can provide us with the newest ideas and information within seconds. The amount of information available on the Web doubles every three to five years. How can this incredible resource help us provide the best care possible and keep up with the Joneses, or Bartletts, or Daveys?

"I know of several climbers who use the Web but mostly lurk. I can't figure out why they don't participate. For me, the Web is an ongoing source of useful, and useless, information. The networking is also beneficial. As easy as it is to get on the Web, I think fear is the limiting factor. Hard to believe that anyone who hangs their life on a limb would be afraid of a keyboard, though."

When I started my career in urban forestry as a summer job in 1967, we had three rules that were strictly followed:
1) Make every pruning cut flush with the trunk, stubs look bad and do not "heal" smoothly;
2) If the pruning wound is over 1 inch in diameter, it is to be painted with black tree tar to seal out disease;
3) Integrated Pest Management involved integrating DDT and lead arsenate in the tank and spraying everything.

By the time I returned in 1968, DDT-lead arsenate was gone, replaced by methoxychlor, which came with a warning that it would remove paint from cars. The business was already changing fast.

The changes in equipment, from lightweight XL-12 Homelites (18 pounds) that could easily be carried around in the tree all day to today's five-pound wonders, have come fast. High-tech equipment changes even quicker. With speed of development, however, comes obsolescence. Latest estimates are that each one of us will be totally retrained in our profession at least four times in our working lives.

Where are you going to receive your training and when will you find the time?

Arborist certification programs that help keep us updated have a required continuing education component for renewal. Large companies send employees away to schools for specialized training, filling the gaps in their workforce from other crews or departments. Trade groups such as the National Arborist Association also offer training programs throughout the year, or we can travel to meetings. Some of the information presented, however, is too technical, while some is too general for your needs and abilities.

Through the use of search engines on the Web, we can often find exactly what we need to know, whether it is information on the newest diseases or specifications for a new chipper.

A few years ago, an individual could click on "Trees" in a search engine and very few sites would come up. Now, it has become like the yellow pages, with more than 10,000 sites. We can post a question to one of several forums and within minutes have several educated guesses from around the world. Your customers are getting smarter too. By the time your truck reaches the end of the drive, they may be looking on the Web for more information or a second opinion. They may meet you at the door with three options that they uncovered last night, two of which you are totally unfamiliar with. This makes sales and diagnosis even more challenging than before.

How do we handle these challenges? Unless you are strictly a tree mortician, removing anything customers want to keep them happy, you are going to need infor-
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55’ w.h. Aerial Lift of CT, 1990-1997 Fords, gas or diesel. 1994 GMC Topkicks also available.

50’ w.h. Aerial Lift of CT, rear mount, flatbed, cab guard, 84 CA, custom built on diesel or gas chassis. Many to choose from.

55’ w.h. Aerial Lift of CT, rear mount, flatbed, cab, 1997 Ford F Series, 5/2 trans. Under CDL. Approx. 21,000 miles. Forestry package, also 1990-96.

Loader, Hood 7000. 20’ Dump Box w/4’ high sides. 1994 Ford F700 diesel. Allison auto trans, air brakes. 36,587 miles.

Chip Box Dumps. Many to choose from, Ford F350s or larger. Wide Selection.

70’ w.h. TECO Van Guard, mounted on a 1986 GMC 7000, diesel, 29,860 GVW, 67,220 miles, 5/2 trans, rear mount flatbed.


Distance education may be one big link in the process to solve this problem. It may range from a total class for college credit, to short quizzes on a single article, to a single question, to an online consultant. The options are as varied as the problems.

On the subject of online education, Glenn Riggs, of Bryn Mawr, Penn., provided these thoughts: “There are many climbers and owners using the Web. Most are cyber shy, afraid that some clown will insult them if they state some sort of idea or question.”

Today, classes are often a joint venture between educators and industry. At Minot State University-Bottineau Campus, training programs provide customized classes to commercial and municipal operators, as well as the military, in tree climbing, tree care and other related fields. Jointly developed classes help prepare the worker to fit into future plans of the company as determined by management. Other courses are developed by MSU-Bottineau’s Continuing Education department to provide updates on new research or techniques to those who have been too busy to notice the changes.

Is the technology needed to bring your company into the computer age too high priced or complicated? How much does training really cost and how much is training worth to the future of your company? An E Machine computer, without monitor, can be had for about $400. An unlimited-time modem connection is in the range of $16.95 a month. An article in the July 2, 1998 Minot Daily News reported that some of the larger service providers, such as AOL, Prodigy and Microsoft, are offering a free computer if you sign up for their $21.95 Internet service for three years, a cost of $790.

Tuition for a full-time, three-semester hour course starts at about $250, with no travel, room or board costs. A couple of good used computers in the back room of your office or shop, handed into a dedicated phone line, may be all that is required to introduce an employee to the joys of learning and turn a pretty good climber into your next CEO.

Just how does Web-based instruction work? Is there interaction between teacher
and student? These are a couple of the questions that come up when distance education is mentioned. A change is required on the part of the instructor from being the "Sage on the Stage" to the role of a "Guide on the Side." The hour lecture is replaced with a reading assignment, Web links and a short article from the instructor highlighting certain points. Then, through conference groups, chat rooms, list serves or e-mail, discussion flows within the group. This is referred to as "asynchronous learning," since we do not all have to be at the same site at the same time to participate. If you think best at 3 a.m., that is the time you can come to class. A profession like ours may require field labs to clearly illustrate the ideas presented. This is not impossible; it just requires some imagination.

For those of you who still have doubts, please take the time to check out this sample course page. Through a web browser such as Netscape or Internet Explorer, go to www.nicenet.org (the Interactive Classroom Assistant). You may enter this in one of two ways:

1. Follow the directions for a new student, creating a login and password, and then enter a new class with the class key 0Z452ZC70.

2. Log in as Woodsy, use the password Owl, open the demonstration class, scroll down to the class schedule and follow the assignments listed. This will take you through the readings, self-testing, a graded test, conferencing and a sample lab assignment. This site will be available for about a month following publication of this article for all to try and will then be removed from the server, so don't be bashful and just lurk in the background.

I hope this article has helped you see some of the possibilities available for continuing our learning on the Web. It is not the only answer, nor is it perfect, but it is another tool with the ability to tie people from different cities, states, and countries into a single learning unit for the benefit of themselves and trees worldwide.

Robert Underwood is an Associate Professor of Forestry at Minot State University, Bottineau Campus.
Promotion of professional tree care takes on many forms. Take a moment to think about what your company looked like 20 years ago. Did you offer employee benefits such as health insurance, 401(k), dental, etc.? Did you have specialized support employees such as sales people, equipment managers or office assistants? Did you have industry standards for tree care maintenance operations to follow?

Most tree care company owners would answer “No!” In the last 20 years we have seen the tree care industry grow at an astounding rate. With that growth has come more professional growth in the tree care industry. More and more companies offer employees benefits. Where once the tree care company owner was required to “do it all,” now many company owners have professional staff who are experts in their respective fields.

As an industry, tree care companies have and continue to work together to tackle many issues, such as producing ANSI A300 industry standards for tree care maintenance operations.

The tree care industry now needs to work together to tackle one of the biggest stumbling blocks for continued professional growth—future employees.

One avenue is the support and promotion of NAA Student Career Days at TCI EXPO ’99. There are various ways you can help this event and promote commercial tree care as a career opportunity for students. Many member companies have chosen to partner with NAA to make this event possible. Still more companies chose to present their company as a dynamic and growing company at the Job and Internship Fair portion of Student Career Days. If neither of these is an option this year, you can still help.

Take a moment to talk with the students you meet at TCI EXPO ’99. They might not work for you right now or they might not be in a position to buy big equipment, but remember, someday they might be.

Someday the students you meet at TCI EXPO ’99 might be ... your employees, your customers, people who recommend your product, people who wished they worked for your company. Don’t miss this opportunity to meet the future of commercial tree care.

If you want to learn more about NAA Student Career Days at TCI EXPO ’99, read about last year’s Student Career Days in the April ’99 issue of TCI magazine, specifically, the article titled Melding Students With Arboriculture at TCI EXPO ’98 Career Days on page 54.

If you are interested in how you can partner with the NAA to promote professional tree care careers in 2000, now is the time to make plans. Call Chris Brown at the NAA (603-673-3311, ext. 103) for details.

This year Bartlett Tree Experts is making the Job and Internship Fair possible. Arbor Care, with support from Davey Tree Experts, is presenting the Tree Care Skills competition. ArborMaster Training, The Bishop Company, Buckingham Manufacturing, Kramer Tree Specialists and Weaver Leather are making other portions of Student Career Days possible, such as Tree Care Skills Competition lunch, Student Career Days T-shirts, etc. Tree Care Skills Competition awards are being provided by ArborMaster Training, The Bishop Company, Buckingham Manufacturing, Husqvarna, Samson Ropes, Sherrill Arborist Supply, Vermeer, and Weaver Leather. Additional in-kind services will be provided by Preformed Line Products.

The NAA thanks this year’s Student Career Days partners for showing their company’s commitment to professional growth of the tree care industry.

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IN THE REAL WORLD, YOU CAN'T AFFORD FOR YOUR TREE CARE EQUIPMENT TO TAKE A DAY OFF. That's why Altec is committed to providing you with equipment solutions. Our complete line of aerial devices and wood chippers is highlighted by our newest machine - the Altec LRV55 Overcenter Aerial Device. It combines 60 feet of working height, smooth maneuverability, and low maintenance costs for unmatched performance in the industry. If you need real world solutions for your tree care equipment needs, call the company that builds them. 1-800-958-2555.

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Please circle 7 on Reader Service Card See us at TCI EXPO '99!
While employee selection and training has always been paramount with arborists when it comes to technical issues such as pruning, fertilization and disease prevention, it is just as important that selection and training requirements be established for employees who will be driving your vehicles.

The opportunity to select the right person for the position will largely depend on management’s ability to develop job standards that reflect the prerequisites and skills necessary for satisfactory job performance. Driver selection is a one-time process; assuring that the driver remains qualified should be an ongoing process. Training is a critical part of any fleet risk-management program. Making sure that drivers are adequately trained involves committing time and resources to the process. Adequate documentation of training activities is also important.

Types of Training

There are basically three types of training: Initial, Refresher and Remedial. Initial training can involve a wide range of training initiatives. It may be that your organization trains their drivers from the novice to the expert stage. If this is the case, a formal training program and curriculum should be developed that includes specific skills and job performance standards that need to be met before the trainee can progress to another level. When experienced drivers are hired, the initial training program may include company orientation, equipment familiarization, company policies and procedures, and cargo handling procedures.

Refresher training is part of the ongoing process of assuring that drivers remain qualified. Refresher training may include operational changes, new equipment, regulatory changes, and review of current or new policies and procedures. Refresher training should be required of all drivers, regardless of experience or seniority.

Remedial training should be given to address specific issues, such as problem drivers, substandard performance, or violations of rules or procedures. Remedial training may also be appropriate after an accident or after a driver has received a traffic citation. Remedial training should be administered consistently, regardless of driver experience or level of responsibility.
Overall Body Dimensions:
Length 138” Height 60” Width 92”

Chip Box Material: (galvannealed)
1. Floor ........................................ 10 ga. plate
2. Sides (removable) 3’-6” high .(2)pc. design- 12 ga. plate
3. Top: (removable) 8’ long .......... 14 ga. plate
4. HeadBoard (stationary) .......... 12 ga. plate
5. Tailgate (270° swing) .......... Expanded Metal w/tubing frame
6. Runners ..................... .6” structural channel
7. Cross members ................... 3” structural channel
8. Side vertical supports .......... 3” x 3” sq. tubing

General
1. All G-60 galvannealed material
2. Sides: Fabricated in (2) pcs. for easy removal
3. All wiring in conduit
4. Sealed lexan lens lights meet FMVSS 108 specifications
5. Anti-sail mud flaps
6. Hydraulic dump hoist
7. Safety body prop
8. Trailer light connector 6 pole; Elec. back up alarm
9. Pintle; or pintle/ball combination trailer hitch with tow hooks
10. Bodies: mounted, undercoated, coal tar epoxy coating inside chip box, primed and painted
11. Stainless steel tool box hinge pins w/grease zerk
12. Tool Boxes - “Weatherproof” - Bulb type weather stripping
13. Top includes (4) corner lifting eyes
14. Chipper Air Exhaust Vents

Tool Boxes (14 ga. galvannealed material):
1. Underbody tool boxes: (two) 48” long x 20” high x 17” deep
2. Locks: Slam locks, keyed alike with hidden theft resistant rods

Cross Box:
1. “L” cross box - which includes underbody tool box
   Cross box: 24” long x 92” x 37” high across chassis rails; (6) swivel rope hooks; (1) shelf; (3) gal. water cooler holder

Optional:
1. Top ladder pruner rack

NOTE: Chassis cabs available to complete package 84” C/A Chassis cab required

Southco Industries, Inc.
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e-mail: southco@shelby.net
(800) 331-7655 or Phone: (704) 482-1477
Fax: (704) 482-2015 or (800) 458-8296

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Training approaches

Training can be accomplished either in the classroom or in the vehicle. Some situations lend themselves to classroom instruction, such as review of defensive driving principles, review of rules and regulations, as well as changes in schedules, reports or updates. Other situations are more appropriate for in-vehicle training, such as driver road evaluations, vehicle inspections and equipment familiarization.

Select a driver trainer

Designate a good driver trainer. This individual should have a good driving record. There is nothing worse than having a trainer with a poor driving record attempting to train others. Once the word gets out, the trainer’s credibility is lost.

The trainer should have the ability to train. This sounds obvious, but in some cases, the person selected to train is someone who has excellent technical knowledge, but really lacks the skills necessary to impart that knowledge to others. Not only should this individual have the technical background, he or she should also possess the presentation skills to get the message across to the trainees. Articulation is important and, while driving safely is a serious matter, the individual needs to have a sense of humor and keep the learning process fun. It is a proven fact that students learn and the subject matter is retained longer when the experience is interesting and interactive, not presented as drone-like lectures!

Training subjects

Depending on your specific operation, many subjects could be selected for training programs. Consider the following:

♦ Company policies, rules and procedures

These are important as part of a good orientation program as well as refresher training. Inform and reinforce the standards the organization has set and measure to those standards. If your insurance program has a deductible on the policy for physical damage, you may want to have the employee pay the deductible if the accident was judged to be preventable, (the employee did not do everything possible to prevent the accident from a defensive driving standpoint).

♦ Equipment familiarization

This should be done when new equipment is purchased or when new drivers who are not familiar with your specific equipment are hired. Make sure that unique operational issues and safety items are reviewed before entrusting the equipment to the operator.

♦ Routes and schedules

Drivers should be familiar with the routes, especially hazardous areas such as low overhead clearances where backing is required, railroad grade crossings, steep grades or dangerous curves. Bucket trucks are a particular concern because of their configuration and height. Schedules should be reviewed to ensure that they can be met without sacrificing safety, i.e., stay within speed limits, have adequate time intervals between jobs, etc.

♦ Emergency procedures

What to do in the event of a breakdown or an accident should be reviewed and a checklist or packet should be placed in each vehicle. If an accident does occur, your driver must learn that leaving the scene is the worst thing he could ever do, regardless of fault. Secure the scene, get other drivers and occupants out of the vehicles and away from the roadway to prevent them from being struck again by other vehicles. Tend to the injured, if any, and have someone immediately call the proper law enforcement authority. Have your employee gather information (drivers’ license numbers, vehicle registration numbers, insurance company/policy numbers) and obtain the names of any witnesses. Have your driver provide factual information. but admit to nothing! Let the authorities sort things out. Don’t play “roadway lawyer.”

♦ Defensive driving

Defensive driving principles should be periodically reviewed and reinforced. Subjects such as looking far ahead to anticipate problems, maintaining an adequate space
cushion, proper backing, etc. should be covered. If your vehicles are subject to more than a normal amount of intersection or stop and go traffic, cover these subjects regularly. Make sure that your drivers understand that the stopping distance required to stop a truck loaded with logs and brush is substantially greater than an empty unit or the passenger car they drove to work only minutes earlier.

- Regulations
  Any applicable regulations should be reviewed. When changes are made to these regulations, the organization must ensure that their drivers are aware of them and that they comply with the requirements.

- Cargo handling
  Training in proper methods of loading, unloading and tying down loads should be reviewed. Where unique cargo presents itself, individual training sessions on how to handle these materials should be provided. For example, many arborists have trucks with chippers in tow. Special care must be taken when turning and backing with these units.

Documentation
As much as we all hate paperwork, it is important to document your training program. You need to know the subjects that have been covered with which drivers so you can schedule future training as needed. However, there is one other important reason to keep thorough records. If an accident occurs and there is a question regarding fault, generally the courts look more favorably at the side that has proof that training has been completed and that the driver of your vehicle is indeed a professional in every aspect, including vehicle operation.

Summary
Proper training is an ongoing process. It requires that a program be implemented and that when training is conducted, it should be properly documented. Periodically, it is good practice to test the driver’s knowledge of the training material covered. Where problems become evident, it may be necessary to provide remedial training. Remember, driver selection is a one-time process, assuring that drivers remain qualified is an ongoing process.

Billy R. Boguski is a cost containment manager with The Hartford.
Opinions & Omissions on Trucking

I read with interest your article "Trends in Trucking." You don't mention that Ford offers a Cat diesel in some of its trucks. I ordered an F-750 with a GVW of 33,000 and a Cat 3126B, 210hp engine, which is offered in two different torque ratings. Ford equips select trucks with the higher torque engine. On the truck I ordered the engine is coupled to a Spicer 7-speed transmission, which offers an extra low "granny gear."

No mention is made in the article of axle ratings. A knowledgeable salesman will make sure that the axle is matched to your application. The truck I ordered comes with a choice of five different axle ratios. You need to consider the types of loads you are pulling, whether you are driving in stop and go city traffic, mountainous terrain or cruising on the highway. No engine is going to make up for a poor choice of axle.

As far as buying new or used, I settled on new after realizing that I would never get the exact equipment or options I wanted. Also, a lot of used tree truck dealers were located way out of town and I would never really know the exact history of the truck. Refurbished or not, you could be buying someone else's headache.

I have two gas, mid '80s GMC 6000s (bought used), which in a testament to used trucks have done very well, considering the use they get. But they were built and designed to pull lighter drum chippers. In this era of much heavier diesel disc chippers, they struggle to pull 5500 pounds of chipper with a full load of chips. I've had the axles in both replaced, as well as the transmissions and clutches a couple of times.

The custom chip body dumps available from some of the body companies also influenced my decision to buy new. With a cab and chassis, you can have any body build for your truck. I ordered an extra high, chip body dump, 20-yard capacity with removable top and sides. This offers tremendous versatility to haul logs, wood chips, convert to a flat bed for a spreader in winter, etc. I was also able to order an underbody liftgate, a rarity on most tree trucks.

Financing, as your article suggests, should be researched thoroughly. I was going to buy a 1999 F-800 at a decent closeout price with standard commercial financing rates. After a little digging, I discovered I could get the truck I really wanted for a higher price but much better financing. What finally sealed the deal for me was realizing I was getting more bang for the buck on a truck that was far superior.

William H. Marvil, President
Takoma Tree and Landscaping Inc.
Adelphi, Md.

Customer Service Is the Right Outlook

I wanted to drop you a line regarding your OUTLOOK piece in the September TCI. I was inspired by your words. I find that the tree industry seems uniquely linked to word-of-mouth advertising. Personally, nine out of ten of my tree clients come to me by word-of-mouth. The other 10 percent are generally neighbors who see me working or drive-bys who stop.

I value this form of advertising. It's cheap, highly effective and someone else is doing the footwork for me. When a new client calls me, chances are they've already gotten the story on me: my aerial tree ballet, how I talk to kids on the ground while I'm working, how I take exceptional pride in my work, or how I set an estimate time and actually show up. Total strangers might tell me how careful I was to not stomp on their friend's hostas or that they were amazed how thorough my cleanup was.

When a new client calls, they know me already through a referral. We have a bond established before we ever meet. We can make our arrangements through an informal, lighthearted chat.

I consider referrals to be the lifeblood of my business and I will often let the new caller know this.

Follow through is even more important. Here are some guidelines I've set for myself that work time and time again:

♦ Call back as soon as I get their message, even if I'm bushed from the day. I will call up until 10:00 p.m. Quick response is essential to let them know their message has been received.

♦ Get enough details so that you can do a good written estimate, even if they're not home. Good listening skills show you care.

♦ Do the estimate in a timely manner. Within 24 hours, you get an A; 24-48 hours, you get a B; Three days and you get a C. Remember, you're still setting the stage for an ongoing relationship. Don't be a flunker.

♦ Follow Up! If you don't hear back from them within 24 hours after the estimate, call back. People are busy. It's your job to accommodate them.

♦ Tree Service! At this point it's just service. The trees will come after they say go. You have time and effort invested at this point. It's plain stupid to flush that time just because you can't make a follow up call. Good follow up displays incentive and professionalism. I've been chosen for a job over other tree companies many times, simply because I've followed up and they haven't.

I rarely lose a job. I don't think I've ever lost a job because my price was too high, but I have lost jobs because I've followed up poorly. I learned from these early losses.
and now my sell rate is consistently above 90%. I attribute this to word-of-mouth referrals and to a tight, early bonding period with new clients. Remember, someone went out of the way to refer you. Do all you can to reflect well on that person.

If you’ve done well up through this point, the client’s expectations of your work will be high, so don’t let them down. Do the best you can. Go the extra mile. Ice the proverbial cake. If you shine through the whole process, they will call you, and only you, the next time they need work. More importantly, they will want to refer you on to their friends. People are much more intimately bound to their trees than to their electrical system or their plumbing or their irrigation. Be a class act. Be exceptional in your service and I’ll guarantee you’ll have both a customer and a word-of-mouth referral source for life.

Jim Clark
The Tree Machine
Indianapolis, Ind.

A Dissenting View on Instant Service

Your September letter, “One Simple Difference Can Make or Break Your Business,” was especially notable due to the fact that it appears you have never been on the other spectrum of the service industry.

We are a small tree service company, but we cover a very broad area—we have physical and mental limitations just as you do. I am the only knowledgeable person in our company to diagnose tree diseases, give estimates, etc. Sometimes it takes several days to answer calls, as our days often extend into 10 hours due to traveling time to and from jobs. I cannot properly handle a call at 10:00 p.m. at night and a call is not appreciated at 6:00 a.m. Even though we are in several Yellow Pages, year after year approximately 80 percent of our work is done on a regular basis for clients who have been with us for over 25 years. I personally supervise all work. When a new call is made, it is within the parameters of “rainy days,” and the client is told we will attempt to do the work within a two-to three-month period. If this is acceptable with them (which it usually is), we put them on our work schedule. Since our spraying and deep root feeding take precedence over all else, our pruning is done intermittently, but mostly after the latter part of August. My personal life is dedicated to tree care and every customer and their trees are important—but there are limitations on what a human being can do.

We are open from April until snow or cold weather hits. We can only stretch so far. There is no “Send” button here.

Anne Hillman, Owner
Hillman Tree Care
Princeton, Ill.

...continued on page 70
More on Customer Service ...

I think your “Outlook” editorials are great. This month your message was so good, we copied it and passed it out to sales personnel, foremen, etc. In fact, this issue was one of the best ones overall. 

Jeanne Houser
McFarland Landscape Service
Philadelphia, PA 19144

... And More

Your “One Simple Difference Can Make or Break Your Business” is a well-told message that needs to be told often in the trade. Indeed, to be accorded professionalism, we must provide our service in a very business-like and respectful way. It’s so easy to slip up!

Dr. Joseph E. Howland
Emeritus Professor
University of Nevada
Reno, Nevada

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Cobra Rope Unsuitable to Repair Dangerously Split Trees

What has led so many forestry people astray?

All are overly impressed by the fact that wind-caused independent motion of the two tree portions encircled by a rope’s end loops can momentarily cause enough rope tautness to enable the outer portion of the splice at each end to firmly grasp the inner portion and thus momentarily prevent any further separation of the tree portions involved.

The long-term effect of wind-caused rope tension variations is far more significant.

Each time wind causes rope tension to increase, it takes time for the outer part of each splice to become taut enough to firmly grasp the inner portion, so some of the inner portion escapes. This basic design concept of Cobra rope thus keeps rope tension low to protect the cambium layer.

This automatic rope-tension-reducing feature can’t differentiate between (1) tension increases resulting from growth in the girth of encircled tree portions and (2) tension increases resulting from increases in the splitting and separation of the faulted portion. Consequently, rope tension is kept low even when additional splitting and separation occurs. Cobra rope therefore does not restore a tree to a sound condition, and also does not restrict further splitting and separation. Consequently it is unsuitable for repairing dangerously split trees.

Trees so “repaired” remain unsound and continue to split and separate unrestrained.

I am a professional engineer and system analyst who had need to make an in depth study of the design concepts of Cobra rope, and hereby share my conclusions with you.

Richard H. Kutscher, P.E.
St. Paul, Minn.

Send letters and comments to:
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<th>Standard</th>
<th>The TreePro Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>• General Liability</td>
<td>• Tree and Shrub Damage due to Pruning or Care</td>
<td></td>
</tr>
<tr>
<td>• Property</td>
<td>• Damage from Striking Underground Cables, Pipes or Conduit</td>
<td></td>
</tr>
<tr>
<td>• Business Auto</td>
<td>• Pesticide and Herbicide Applicators Coverage</td>
<td></td>
</tr>
<tr>
<td>• Equipment Floaters</td>
<td>• Spraying the Wrong Property/Location</td>
<td></td>
</tr>
<tr>
<td>• Crime</td>
<td>• Credits for Seasonal Vehicles</td>
<td></td>
</tr>
<tr>
<td>• Workers Compensation</td>
<td>• Accidental Discharge of Pesticides/ Herbicides from Your Vehicles</td>
<td></td>
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<tr>
<td>• Umbrella Coverages</td>
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Please circle 91 on Reader Service Card
"How come nobody does what I tell them to?" That's a question I hear from business owners, managers and supervisors everywhere. Getting others to do what needs to be done can be deceptively simple.

A new job title
First, if you hold a management position, consider a new job title. The words "Manager" or "Supervisor" are often perceived in negative terms. If others report to you as an authority figure, try thinking of yourself as a "Leader."

A new attitude
Next, as a Leader, the most important quality you can have is an attitude of caring respect toward everyone you lead. I included a questionnaire in a seminar series I once gave for the sales staff of a large tree care company. When management read the responses, my series came to a halt. It seems that many of the participants didn’t feel respected by management. Since management wasn’t receptive to change, staff turnover with that company continues to be somewhat brisk. It’s all a matter of attitude. An attitude of caring respect will help you to consider the feelings of those whom you lead. In doing so, you’ll be supporting their self-esteem. They’ll feel good about themselves, good about their work, good about you, and will be more inclined to extend themselves in many ways. More quality work will be accomplished in less time—and with less aggravation. All of this will show up in your bottom line. It’s all a matter of attitude.

Getting there
Improving your attitude can be a simple process. First, make an informal survey of your attitude toward everyone
who works for your company. How do you really feel toward each one? Grade your responses on a ten scale—ten meaning that your response is positive—and write them down. If you do this every day for 30 days, two interesting things may happen.

1. You may become acutely and consciously aware of what your true feelings are toward these folks.

2. Without making any conscious attempt to do so, you may find yourself making incremental improvements in your attitude toward them. That’s good, because what goes around comes around.

Next, remind yourself each morning that people are different. No one on your crew is exactly like you and no two on a crew are the same. They come from different backgrounds and have different life experiences.

Intelligence, education, learning and communication styles will vary widely. Each will have his or her individual personality and see the world, the job (and you) from a different perspective. Cut them some slack. Accept them for what they are, warts and all. They’re just doing the best they can with what they’ve got.

Taking Action

Giving instructions

Having an attitude of caring respect will affect your communication style and help you to give instructions more effectively. Instead of giving orders, try asking.

I once spent the morning on a service call in the blazing heat of a summer day, and returned to the shop with my clothing soaked with perspiration. I was exhausted as well, and the air-conditioned office was an oasis of comfort. Plopping into the first chair I could find, I took a deep breath and watched the steam rise as my shirt began to dry in the dehumidified air. Just then my supervisor, Dick Axline, walked in. He had a work order in his hand. All alone. I was a sitting duck!

As my superior he was duly empowered to give orders and expect them to be carried out, but that wasn’t his style. First, he complimented me on my morning’s work. “Wow! You’re soaking wet. It must be awful out there, and you must be exhausted. You know, I really appreciate the way you stay on the job until it’s done. You even finished the paperwork. The customer just called in and she’s very pleased. You did real good, and I’m proud of you!”

Having captured my attention with his opening remark, he said, “Emmet, I really hate to do this to you, but we’ve had another call and you’re the only one here I can send out. Could you help me with this?”

Instead of telling me what to do, he was asking for my help. He’d just recognized my outstanding performance, paid me a high compliment, and asked me nicely if I might be willing to lend assistance. What else could I say? “Gimme the work order, Dick. I’ll take...
I went back out into that sweltering heat, lost another three pounds, and felt good about myself and what I did because my leader felt good about me—and said so. His attitude toward me was one of caring respect.

Criticism

In offering constructive criticism, an attitude of caring respect will help you to communicate your message more kindly. Roger and his crew were on a suburban residential property one hot afternoon, taking down an old sycamore. Through the afternoon, the crew consumed a lot of water. A crewmember named Harry felt the need to relieve his bladder. Not wanting to go inside the house and track chips on the carpeting, he chose to answer nature's call near a large hydrangea bush. He didn't realize that the lady of the house was home at the time. She happened to glance out her kitchen window and saw... everything there was to see. Angry, she complained to Roger, to whom customer retention had suddenly become a real issue. When the job was completed, Roger and his crew drove back to the office. As leader, Roger knew he had to discuss the incident with Harry. First, he had to get Harry's attention.

As a leader he was duly authorized to go ballistic and yell, “Harry! Get in my office now!” With an attitude like that, however, Harry’s response would probably not have been receptive. So, in a pleasant tone of voice, Roger said, “Harry? Could I see you for a minute, please?”

In the small office, door closed behind them, Roger once again had a choice. Instead of getting red in the face and screaming at the top of his lungs, he asked in a pleasant conversational tone, “Harry, do you remember if I explained the company policy on bathroom breaks?” Roger's attitude of caring respect made open communication natural and easy. If Harry never knew the policy, it could be explained to him now. If he'd been told the policy but had forgotten it momentarily, he could be reminded of it now and asked to be more careful in the future.

Intelligence, education, learning and communication styles will vary widely. Each will have his or her individual personality and see the world, the job (and you) from a different perspective. Cut them some slack. Accept them for what they are, warts and all. They’re just doing the best they can with what they’ve got.
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A problem had occurred. It had been addressed in private and resolved. As a result of Roger’s attitude of caring respect, honest communication had been accomplished with no one feeling hostile or hurt.

How did the story end? Well, Harry is an old-fashioned country boy, raised by caring parents who taught him proper manners. Harry had no idea that anyone would have seen him in his state of emergency, and he was embarrassed beyond belief. At the end of the day, Harry went home, showered, changed, picked up a small bouquet of flowers from the supermarket and went back to the same suburban property. His knock was answered by a very surprised customer. With a very red face, Harry handed her the flowers and delivered a heartfelt apology for having offended. The lady was so impressed by this that she ran back to the kitchen and brought him a bag of homemade chocolate chip cookies.

What goes around comes around. Roger’s attitude of caring respect allowed him to inform Harry without wounding him in the process. Harry got the message in a way that he’ll remember, then carried that attitude of caring respect back to the customer. The customer responded in kind. Roger is stress-free. Harry is wiser for his experience and the customer has been retained. This chain of events was all the result of an attitude of caring respect demonstrated by the crew leader.

Listen and learn

Next, keep in mind that others have lives outside the business. How much do you really know about the people on your payroll?
- Where were they born?
- Where did they grow up and go to school?
- Where do they live?
- Who do they live with?
- What are the names of their spouses or significant others?
- Are there kids? What are their names? Where do the kids go to school?
- What do these folks do for fun?
- What are their goals, their dreams for the future?

Getting to know your crew members as people will demonstrate your attitude of caring respect. Simply become aware, listen and learn. Then make occasional reference to what you learn:

“Hey, Chuck, how was your fishing trip this weekend?”

“Millie, I read in the paper that your daughter won an award at school. You must be very proud.”

“Tom, how’s your mom doing after her knee surgery?”

It doesn’t take a CIA investigation to find out these things. Simply pay attention, listen and learn. Then celebrate their birthdays, anniversaries, new births, awards and special events. Let the world know about your attitude of caring respect for everyone who helps you in your work.

Train them and trust them

Another solid demonstration of your attitude of caring respect is in the careful use of empowerment. Follow these simple steps:
- Give an assignment only to someone properly trained for it.
- Give clear, detailed instructions—in writing, if necessary.
- Ask questions to make sure your instructions are understood.
- Get out of the way and let it happen.
- Be willing to accept the result.

The rules

Although you may think you’re in the tree care industry, I’ll suggest that you’re really in the people business. For anyone in a leadership capacity in the people business, the rules are simple:

Rule 1: You must absolutely take care of the people who are your customers.
Rule 2: You must absolutely take care of the people who help you take care of the people who are your customers.

The rules are inflexible. Disregarding them can be hazardous to your financial health.

Summary

An attitude of caring respect is the best leadership advantage you can have. First learn to improve your attitude, then demonstrate it:
- Ask rather than tell
- Criticize kindly
- Listen and learn
- Train them and trust them
- Follow the rules

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TREE CARE INDUSTRY - NOVEMBER 1999
Surprise! Out of the blue you are called on to be an expert witness! What now, you ask?

Not only is this possible and probable, the longer you are in the tree care business, the more likely that you can be roped into a tree law case that you never dreamed of being involved with.

Some of the situations that might land you in court (which might not arise for many years after your involvement) are:

1. Your company, or you personally as a tree climber or estimator, has performed services on a tree that later falls on a house, causing substantial damage.

Perhaps the tree or limb even causes personal injury or death. Trust me, this does happen! One of the first questions I ask a client when I am retained as a consultant is the date the tree was last worked on, what was done and who did it. This is not necessarily to place any blame on the tree contractor (although it could work out that way), but to have an expert's opinion from someone who was in or near the tree of what was going on in the tree. You will be considered an expert on trees if you are in the business. The information you provide could be important to a plaintiff to prove possible negligence, or to a defendant to justify no negligence.

2. If you have ever offered advice as a consulting arborist.

If your expertise was solicited as to whether a tree is a “hazard tree” or not, you may be called in on a case to testify if there is tree or limb failure. I personally do not like the term hazard tree, but it is used a lot. Two of my favorite lines to a client are, “Some trees are safer than others, but there is no such thing as a safe tree” and, “To live amongst trees is to assume a certain amount of risk.”

3. You may have offered advice about the health or structure of a client’s trees.

I stress the difference between health and structure because it is important to distinguish between the two. A tree can be “healthy” with good foliage, twigs, and buds, but be structurally unsound with extensive trunk decay or root rot. I can’t recall how many times I have corrected lawyers (both the opposing ones as well as the ones I have worked with), when they asked me, “Mr. Bloch, was that tree healthy or not?”

4. When you or your company is contracted to clean up fallen, damaged trees or...
limbs after a storm emergency.
This is another common scenario that may get you into court as an expert witness. Even though the work may be paid for by an insurance company, someone may want to know if the tree fell because of the storm, or if someone was negligent in leaving a potentially dangerous tree that was an accident waiting to happen. If someone is hurt or killed, or if there is substantial property damage, there will likely be a lawsuit. It might be one insurance company subrogating another, or the individual parties may be involved. However, once the tree is cleaned up and hauled away, you might be the only one to know the tree’s condition before the accident. As I stated, you will be looked upon by the court as an expert witness.

5. When you perform an appraisal.
If you were called upon to place a monetary value on a tree, perhaps in a tree inventory for a municipality, or for some other proactive purpose, and the tree should fail, you may be called upon to testify to the tree’s condition and monetary value.

6. Referral as a known expert in the area.
Even if your company was not involved in any of the above possibilities, it may happen that a competitor or colleague gives your name to an attorney, arbitrator or court as an expert when it comes to trees and tree care.

Preparing for court
Some of you may already earn a portion of your business hiring yourself out as an expert witness. Even those who have served as experts sporadically should keep in mind certain factors and hints that can help you in this endeavor.

To some people this type of experience is intimidating and uncomfortable; to others it is challenging and interesting. The more often you get involved with this type of situation, the easier it becomes. Also, the more you learn about the process, the more comfortable you will be. You already know trees, now learn about the court systems. Rest assured that the opposing lawyer will try to make you feel as uncomfortable as possible.

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I'm not sure of the exact percentage of cases that make it to trial, but most experts agree it is less than 10 percent; perhaps less than 5 percent. However, many cases are settled only after much time and money are spent on interrogatories and depositions, which can be as trying as actual testimony. Quite often, cases are settled just before, or just as, the trial is starting.

If you are good at documenting every job you work on, your preparation will be easier and you will look more professional. Write everything down—even if it is on a scratch pad—and take photographs or videos. Make sure you label and date each photo and note, and write down the names of anyone you spoke with regarding the situation. Remember: anything you write down can and may be observed and critiqued by lawyers and colleagues who are experts for the other side.

If you are called upon to be an expert testifying witness, you may not be an advocate for either party—even the party paying your fees. Consider yourself to be an advocate for the truth, or an advocate of the situation. If you are retained as a consulting expert, you may be an advocate for your client. Sometimes you may be subpoenaed to be a fact witness, if you are familiar with a situation, rather than as an expert witness.

There are several books that offer advice to those considering offering their services as expert witnesses. The two I recommend to anyone interested in honing their skills are:

- *Succeeding As An Expert Witness*, by Harold A. Feder

Also, the *Guide For Plant Appraisal*, written by the Council of Tree and Landscape Appraisers, gives some good pointers on handling yourself as an expert witness, as well as report writing and ethics. Here are some points (in no particular order) I consider to be important and helpful from the above publications, as well as from my own experiences:

- Provide objective opinions to your client, whether supporting the case or pointing out weaknesses.
- Review the opponents' depositions and help formulate questions for your attorney to ask.
- Don't take every case that comes your way. Either refer to someone else or perhaps form a team for the case.
- Have a *curriculum vita* (C.V.), which is your "Bio," along with a fee schedule and terms.
- Your files may be open to discovery to the other side.
- Be, act and look professional.
- Make your written report strong so as to help settle the case from a position of strength.
- Take photos and/or videos, and ask everyone involved if there are any old photos with the subject tree in them.
- Use blow-ups, diagrams, charts and

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maps in your presentation.

- Make sure you prepare and rehearse with your lawyer before a deposition and trial.
- Study all notes the night before the trial or deposition.
- Talk in complete sentences in your testimony.
- Do not waive your right to review the deposition.
- Save the deposition you review so you can review it again before the trial.
- Do not joke around during your testimony.
- Listen carefully, and pause before answering questions.
- Look at the attorney when he or she is asking questions.
- Look at the jury or judge when answering questions.
- Do not volunteer additional information.
- Tell the truth. There is nothing wrong with "I don't know."
- Be careful of open-ended or compound questions.

- If you are not sure, ask to have the question repeated.
- Listen carefully if your attorney objects to a question.
- Be wary of negative questions, such as, "is it not true ..."
- Be careful when an attorney summarizes your answers to you.
- Be careful of leading questions.

- Be careful of hypothetical questions.
- Be wary of, "tell us all you know about ..."
- Do not use definitive words such as "always" or "never."
- Do not argue or be sarcastic or belligerent with the opposing attorney.
- It may be wise to attend the opposing expert witness's deposition.
- Lean forward in your chair when testifying.
- Avoid or explain any technical jargon.
- Be lively, interesting, confident and educational, but never arrogant.
- If you cannot answer a question with a simple yes or no, explain yourself.
- After testifying, unless instructed to stay, confidentially leave the courthouse.

These issues, as well as numerous others, are listed and discussed in the above-mentioned books. If you are going to be an expert witness, you should read them.

For those of you who don't have an appetite for this type of endeavor, I suggest you don't look for this kind of work. Of course, this won't prevent you from being called upon as an expert witness by surprise, and perhaps this discussion will help you prepare to be the best expert witness possible.

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In this case, a neighbor retained a tree contractor to severely cut back the subject white oak. Not only did they cause damage to the tree and cause the "tree parents" to have corrective pruning done, but they trespassed in performing the work. Ironically, the company that did this work for the house to the left had previously worked on the tree for the owners. Further, the contracting company I used to own had also previously cared for the tree. Even though the tree owners had a paper trail of constant tree care, and answering the neighbor's past requests for pruning, the party next door was evidently worried about safety, concerned about shade, falling leaves, acorns and twigs.

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Assessing and Managing Impacts to Trees From Highway Construction

By Michael F. Galvin

Maryland law puts all trees in existing road right-of-ways in the state under the jurisdiction of the Maryland Department of Natural Resources-Forest Service (MD DNR-FS), and requires that any state-funded highway construction project requiring the clearing of one acre or more of forest be mitigated on a 1:1 basis.

Tree Protection Devices

As can be seen here, much of the stand shown on the plans is being retained, but the tree protection fencing needs to be relocated in order to provide adequate Critical Root Zone protection to the 34-inch loblolly pine. One of the roles of the arborist is to review and adjust the location of any needed tree protection devices in the field.

Crown Reduction of Retained Trees

The 28-inch D.B.H. white oak shown here was called out for removal on the original plan (shown at left). MD DNR-FS required assessment of the tree by an ISA Certified Arborist who is also a MD Licensed Tree Expert. This requirement was made part of the actual construction drawings (revised plan shown at right). The tree was crown reduced in order to facilitate the relocation of overhead electrical conductors associated with the road widening.
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A priority for MD DNR-FS is the protection and enhancement of riparian forest buffers through our Stream ReLeaf program. The preliminary review showed significant impacts to Wetlands #13. Based on our review and interaction with the engineers, we were able to reduce the extent of clearing of the adjacent forest buffer, and identify additional areas adjacent to the buffer for reforestation (noted as '7,310 SF REFORESTATION SITE 'A').

Tree Retention / Removal Evaluation

In the foreground is the stump of the 25-inch D.B.H. white oak which could not be retained. To the rear is the retained 28-inch southern red oak, misidentified as red oak on the plan. The Limit of Disturbance (L.O.D.) for the clearing will be approximately where the white post is located in the photo.

(Natural Resources Article § 5-103).

Engineering drawings are generated, either by MD State Highway Administration (MD SHA) or a contractor, for the proposed highway construction. The engineering plans are then provided to an environmental consultant. The consultant goes to the site, identifies forest stands, wetlands, streams, and other sensitive areas that will be impacted by the proposed construction, and calls out any specimen trees within or adjacent to the limits of disturbance. After these items are mapped, they are submitted to MD DNR-FS for review and comment.

MD DNR-FS and MD SHA than go through an interactive process of modifying the plans, within engineering constraints where possible, to minimize forest clearing and specimen tree Critical Root Zone Impacts. An ISA Certified Arborist who is a MD Licensed Tree Expert is required by contract documents, where appropriate, to evaluate trees which are pre-selected by MD DNR-FS. If it is determined by the arborist that an edge tree will not tolerate the construction
Evaluation of Critical Root Zone Impacts to Edge Trees

The 34.5-inch D.B.H. white oak shown here was called out for removal on the original plan (shown at left). MD DNR-FS required assessment of the tree by an ISA Certified Arborist who is also a MD Licensed Tree Expert. This requirement is made part of the actual construction drawings (revised plan shown at right).

impact, either mechanically or biologically, it is removed. If the arborist deems the tree viable, a series of specifications is invoked, including crown cleaning, crown reduction adjacent to the impact, fertilization and mycorrhizal inoculation.

Following completion of the highway construction, forest clearing must be mitigated on public land. Seedling planting is credited on a 1:1 basis. If street trees are used, they are credited at the rate of 200 inch caliper per acre (i.e., 100 2-inch trees = 1 acre; 200 1-inch trees = 1 acre; etc.) of mitigation required. The priority sequence for mitigation is as follows. Mitigation should occur within the project limits of disturbance. If all or part of the mitigation cannot take place within the project limits, it should occur off-site in the same county and watershed as the impact. If this is not possible, it should occur within the same county or watershed as the impact. If no public land that can accommodate the mitigation planting can be located by the constructing agency, they pay MD DNR-FS fee-in-lieu payment of $4,356 per acre of impact. If the constructing agency mitigates by fee-in-lieu payment, MD DNR-FS is restricted by law to use the funding for planting and maintenance of planted areas only.

Michael F. Galvin is urban operations manager for Maryland Department of Natural Resources-Forest Service. Photos courtesy of Matt Stine.
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continued on page 98

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... continued on page 102
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What You Should Know & Do After You've Purchased New Equipment

By Bess Ritter Mciv

You've recently purchased new and expensive equipment for your tree care company, perhaps at TCI EXPO in Indianapolis. Like most owners and managers, you want it to earn profits for your firm. Presumably, you exercised due diligence before you bought, running the numbers, work requirements and personnel needs to ensure that you can earn a profit. Unfortunately—even if you have determined your operation can support and profit from a new piece of equipment—you may not if you fail to take proper care and caution.

As soon as the equipment is delivered, regardless of whether it's an aerial lift, diesel skidder, chipper or stump grinder, learn all you can about how this particular model works in order to know exactly how to keep it operating at peak efficiency. Plan and research now so you know what to do if it breaks down.

Start by studying all accompanying manuals carefully. The place where the machine was purchased can be another good source of reliable operation information. The manufacturers have a vested interest in making sure you and your employees understand how to use your new equipment safely and at maximum production levels.

You should also make plans now to service this equipment. Check out the appropriate commercial service dealers or distributor service departments in your area that handle the type of machinery you've bought so that you can call on them when needed. Or, if you and your employees plan to learn how to handle this work, don't wait until something breaks down to study the specifications.

Tree care equipment is built to provide good service under normal conditions. But it's up to you, the user, and your employees to make sure that the conditions really are normal. This means that you should always follow the manufacturer's recommendations strictly and practice preventive maintenance.

Start by setting up and maintaining a detailed information file on your recent purchase. Include its model name and number, the manufacturer's name, the date of purchase, a list of all attachments, components and parts required for proper service and the details when significant repairs are made. Such a record is useful when buying replacement parts and accessories. It will also help you to determine when the equipment should be replaced and provide important cost and operating information. If you are not keeping similar information for all of your equipment stock, start now. Specific details will prove useful in negotiating a sale or trade-in price when replacement time comes around.

Preventive maintenance is the best way to minimize costly downtime. Keeping a minimal supply of spare and replacement parts on hand will lessen excessive downtime later when such parts are needed and

---

Final note: Preventive Maintenance for Aerial Lifts

**Daily visual inspection check list:**
- Lower cables for wear and tension
- Lower cylinder rod assembly for weld cracks
- Lower cylinder lock valve for holding with boom up and weight in the basket
- Upper cylinder lock valve for holding with boom up and weight in the basket
- Boom knuckles for looseness and cracks
- Booms for cleanliness, leaking hydraulic fluid

**Weekly inspection & maintenance check list:**
- Lower boom isolator and fitting for looseness
- Knuckle hoses for chafing and lubrication
- Leveling cables for rust, wear and lubrication
- Bolts in turret and boom for tightness
- Hydraulic fluid for proper level and foaming
- Outrigger bolts for tightness
- All welds
- Grease all fittings

**Monthly inspection & maintenance check list:**
- Hydraulic leaks
- Adjust controls
- Hydraulic hoses for wear
- Hydraulic cylinder rods
- Decals and placards
- Hold-down strap and rubber pads
- Operation of PTO, pump and lift functions
- Lock (holding) valves
- Fasteners
- Welds
- Fiberglass booms

**Twice yearly inspection & maintenance check list:**
- Oil filters
- Hydraulic oil
- Torque of critical bolts
- Pressure settings
- Boom dielectric test
aren't available. Purchase replacement part only from reputable suppliers and arrange that surpluses can be returned if they're in good condition and repacked in their original containers.

As every tree care company owner can tell you, it can be extremely expensive, if not dangerous, to misuse equipment. Yet this can happen easily—especially if the make and model is unfamiliar and its mode of operation is different from machines you and your crews have been using. Insist that crews learn the new equipment's capabilities and limitations and exactly what constitutes abuse. This information should be taught via lectures, a review of the equipment's manuals and hands-on demonstrations. Everyone should also realize that such expensive equipment should never be used for something for which it was not designed or intended. Using equipment for a job it can’t handle can result in downtime, equipment damage, unsafe operation and injuries to workers.

Another form of abuse is to habitually exceed the equipment’s limitations. This may not lead to immediate damage, but the continual severe strain will eventually result in some kind of trouble, possibly including safety violations or injuries.

All of this requires daily visual inspections, which must be made by everyone who is working with or around the equipment involved. Anything requiring attention should be reported and scheduled for repairs in the order of its importance. A leaking radiator, for example, must be repaired immediately, but an engine which is using too much oil can continue to work until it can be handled compatibly with similar work.

It is every employee's responsibility to be alert for such minor problems and report them at once.

Encourage timely reporting of even minor equipment problems. Remember that, left unattended, minor problems tend to become major ones. When major repairs are needed, never attempt to do such work yourself or allow your employees to do this unless you or they are trained and sufficiently experienced. Call the company from which the equipment was purchased or a qualified technician for such tasks. Even though this may initially be expensive, it will usually be far cheaper in the long run.

If you own a medium-sized tree care operation that is growing larger, consider establishing an equipment department for coordinating everything related to the machines. Include maintenance, management and repair work to be sure that everything is always operating profitably. All personnel in this department should have an understanding of equipment operation and be specially trained concerning everything your tree care company owns, uses and eventually plans to discard. This department should have all equipment cost figures available to help estimators when submitting bids to determine the fees for specific projects. Advantage should be taken of all available and expert outside help.

This department must also continually evaluate new equipment as it comes on the market by reviewing technical publications and manufacturers' literature and visiting manufacturers' representatives and plants. Such contacts are also valuable for solving equipment problems that develop, especially when the machines are new.
Proper maintenance of new equipment is vital

With the increase in the size and complexity of new tree care equipment, proper maintenance and service is a must. When there are a large number of small units in operation, each failure causes production to drop, but is not nearly as significant as a failure of only one or two larger and more expensive units. This is why it’s so important to exercise preventative maintenance and make repairs promptly.

Proper maintenance, like checking fluid levels, tightening a few loose bolts and pumping a few shots of grease, can greatly reduce the possibility of machinery failure. Knowing the different methods of care and the limitations of equipment will lessen the potential for breakdown and prolong the life of your equipment.

Provide proper tools for all maintenance work, especially concerning new equipment and insist that they be used. Provide all information needed for the general operation of new equipment and general preventative maintenance in one centralized location so that it will be readily available to everyone who needs it.

The Key to Keeping Equipment Operating Efficiently

Disc Chipper

Daily visual inspection check list
- Condition of knives
- Chipper belts & pump belt
- Engine oil and engine water
- Air cleaner
- PTO engagement
- Debris in radiator
- Hydraulic oil level

Weekly inspection & maintenance check list
- Installation of hydraulic motors
- Feed plate anvil
- Battery
- Tires
- Lubricate PTO as needed
- Power unit belts
- Feed spring adjustments
- Grease feed wheel bearings (only 1-shot)
- Check for loose bolts, nuts & parts
- Grease chipper bearings (purge)

Monthly inspection & maintenance check list
- Hydraulic system pressure
- Wear on discharge & deflector
- Wear on in-feed roller slide or pivot mechanism
- Wear on chipper hoods

Three month inspection & maintenance checklist
- Check hydraulic pressure with pressure gauge
- Disassemble and clean hydraulic flow divider
- Change hydraulic filter every 400 hours or 3 months, whichever comes first
- Check wear on feed plate anvil & feed wheel teeth
- Check wear on chipper disc

Drum Chipper

Daily visual inspection check list
- Rotor blades and cutting bar
- Trailer hitch safety chain
- Cutter bar and blades bolt tightness
- Fuel, oil and coolant leaks
- Radiator coolant level

Weekly inspection & maintenance check list
- Drive belt tension
- Air cleaner
- Crankcase breather
- Governor oil level
- Battery water level
- Tire pressure
- Clutch lubrication

Monthly inspection & maintenance check list
- Draw bar for damage, cracks, wear, etc.
- Tightness of all fasteners
- Drive belts
- Torque of wheel lug bolts

Bimonthly inspection & maintenance check list
- Oil and filter
- Pilot bearings grease
- Dropmotor grease
- Spring shackle bushings grease

Yearly inspection & maintenance check list
- Trailer wheel bearings
- Tightness of all fasteners
- Radiator coolant/antifreeze
- Tune engine
- Replace fuel filter
- Blade change
- Cutting bar rotation
- Sharpen cutting edges

Stump Grinders

Daily visual inspection check list
- Crankcase oil level
- Fuel level
- Air cleaner
- Air intake screen
- Battery
- Condition & tension of drive belt & chain
- Condition of tooth pockets
- Tooth pocket bolts must all be in place and properly torqued
- Cutter wheel teeth must be free of cracks or excessive wear
- Cutter wheel must be free of cracks
- Fluid level in reservoir
- Fittings and hoses for cracks or leaks
- Cylinders & valves for leaks & proper function
- Pump belt for wear and tension
- Condition and installation of shields and curtains
- Condition of safety decals
- Lubricate the cutter wheel lift and cross travel directional control levers
- Machine belt tension

Weekly inspection & maintenance check list
- Tension of the chain from jackshaft to cutter wheel for adjustment
- Pressure in hydraulic system

Monthly inspection & maintenance check list
- Tension adjustment on models with cutter wheel driven by a Poly-Chain
- Wheel bearings for lubrication and/or adjustment
- Change hydraulic oil filter & hydraulic oil

Periodically
- Check for missing, loose or worn bolts, cracked hoses and loose connections
- Check cutter wheel for worn or broken teeth, loose pocket bolts and cracked pockets.
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<td>46</td>
<td>52. Miller Machine Works</td>
<td>70</td>
</tr>
<tr>
<td>2. ACRT, Inc.</td>
<td>83</td>
<td>53. Morbark, Inc.</td>
<td>61</td>
</tr>
<tr>
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<td>96</td>
<td>54. Morbark, Inc.</td>
<td>75</td>
</tr>
<tr>
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<td>33</td>
<td>55. MTI Insulated Products, Inc.</td>
<td>56-57</td>
</tr>
<tr>
<td>5. Aerial Lift, Inc.</td>
<td>Back Cover</td>
<td>56. NAA - Basic Training for Tree Climbing</td>
<td>108-109</td>
</tr>
<tr>
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<td>92</td>
<td>57. NAA - Membership</td>
<td>47</td>
</tr>
<tr>
<td>7. Altec Industries Inc.</td>
<td>63</td>
<td>58. NAA - Winter Management Conference</td>
<td>89</td>
</tr>
<tr>
<td>8. Altec Industries Inc.-Used Equipment</td>
<td>101</td>
<td>59. Natural Path Forestry Consultants, Inc.</td>
<td>98</td>
</tr>
<tr>
<td>12. Arbor Care, Inc.</td>
<td>91</td>
<td>63. OBL Financial Services Inc.</td>
<td>82</td>
</tr>
<tr>
<td>13. Arbor Direct LLC</td>
<td>62</td>
<td>64. Opdyke, Inc.</td>
<td>11</td>
</tr>
<tr>
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<td>17</td>
<td>67. Pete Mainka Enterprises, Inc.</td>
<td>60</td>
</tr>
<tr>
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<td>70</td>
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<td>52</td>
</tr>
<tr>
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<td>94</td>
<td>69. Plant Health Care Inc.</td>
<td>97</td>
</tr>
<tr>
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</tr>
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<td>112</td>
</tr>
<tr>
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<td>53</td>
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<td>74</td>
</tr>
<tr>
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<td>85</td>
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<td>1</td>
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<td>76</td>
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<td>93</td>
</tr>
<tr>
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<td>35</td>
<td>78. Sabre Saw Chain</td>
<td>61</td>
</tr>
<tr>
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<td>92</td>
<td>79. SavATree</td>
<td>90</td>
</tr>
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<td>67</td>
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<td>69</td>
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<td>45</td>
<td>81. Sherrill, Inc.</td>
<td>44</td>
</tr>
<tr>
<td>31. FTC/Racine</td>
<td>87</td>
<td>82. Shindaiwa, Inc.</td>
<td>31</td>
</tr>
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<td>65</td>
</tr>
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<td>103</td>
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<td>73</td>
</tr>
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<td>34. G &amp; A Equipment Inc.</td>
<td>67</td>
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<td>25</td>
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<td>35. Golden Bear Arborists, Inc.</td>
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<td>86. Tamarack Clearing Inc.</td>
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<td>36. GreenPro Services</td>
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<td>87. Tamarack Clearing Inc.</td>
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<td>37. Gyro-Trac, Inc.</td>
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<td>TCI EXPO '99 THANK YOU</td>
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<td>38. The Hartford</td>
<td>49</td>
<td>88. Terex Telelect Inc.</td>
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<td>39. Hendricksen, The Care of Trees, Inc.</td>
<td>96</td>
<td>89. Timberwolf Manufacturing Corp.</td>
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<td>40. Husqvarna Forest &amp; Garden Co.</td>
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<td>90. Tree Tech Microinjection Systems</td>
<td>10</td>
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<td>41. IML - Instrument Mechanic, Inc.</td>
<td>80</td>
<td>91. TreePro Direct™</td>
<td>71</td>
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<td>42. ImpLeMax Equipment Co., Inc.</td>
<td>98</td>
<td>92. Trueco, Inc.</td>
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<td>43. International Society of Arboriculture</td>
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<td>93. Vermeer Manufacturing Company</td>
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<td>44. Jameson Corporation</td>
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<td>94. VERSALIFT, TIME Manufacturing Co.</td>
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<td>45. Kramer Equipment Company, Inc.</td>
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<td>96. West Coast Shoe Company/WESCO</td>
<td>30</td>
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<td>47. Lewis Utility Truck Sales, Inc.</td>
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<td>97. Western Tree Equipment &amp; Rentals</td>
<td>94</td>
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<td>48. J. J. Maugt Company</td>
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<td>98. Westheffer Company, Inc.</td>
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<td>49. McDonald Equipment Company</td>
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<td>99. Wood-Mizer Products, Inc.</td>
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<td>50. Michigan Caterpillar SW</td>
<td>102</td>
<td>100. Wood Chuck Chipper Corporation</td>
<td>107</td>
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<td>51. Midwest Arborist Supplies</td>
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<td>101. Yale Cordage Inc.</td>
<td>59</td>
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* Please circle this number on the Reader Service Card for more information.
A takedown that appeared neither particularly difficult nor extremely involved turned out to be both.

A 40-foot, 15-inch D.B.H white ash with a double leader appeared to be about 85 percent alive. The dominant leader looked healthy and structurally sound. A much smaller, co-dominant leader was a little more than 10 feet long and five inches in diameter at the storm-damaged end. It was dead and "punky," with a 20 percent to 25 percent lean toward the live side where it made contact with two limbs, one above the other, on an adjacent linden tree. The limbs were jutting from the trunk of the linden at 45 degrees and had sound structural attachments. The two trees appeared to be rubbing against each other. At the highest point of contact, the ash made a slight bend, ascending vertically, reaching nearly the same height as the linden.

These trees were at the edge of a wooded area with a paved driveway three to four feet from the base of the ash. Familiar with the property, I was aware that the driveway had existed for more than 15 years. Competing for sunlight, both trees were tall and spindly.

As a Massachusetts Certified Arborist with better than 14 years of field experience and technical training, I viewed this takedown as another typical day on the job.

"Safety First" is the most important motto in our company. We never compromise on safety, which is continual theme, while taking chances is never justified. After inspecting the trees, my team and I decided on a game plan. Estimating that we could have the tree on the ground, brush chipped and the wood loaded in an hour and a half, there would be ample daylight to spare for a fussy clean up.

Spurring up the ash with my buckstrap secured, I first eliminated the dead, 10-foot leader. Securing my climbing line high in the linden, I pieced-out the ash top in small sections. Continuing downward to the lowest point of contact, I cautiously pruned the linden limb back to its collar with absolutely no movement from the ash butt-log. Cutting one more chunk from the ash provided ample clearance.

I rappelled enough to swing myself over to remount the slightly leaning log. That’s when things went awry! The ash butt settled onto the “D-rings” of my saddle, squeezing me against the Linden trunk. Fortunately, I was not seriously injured. Staying calm, I tried to force my line over the log’s end. The butt went to the ground gracefully. I quickly rappelled, unclipped and removed my saddle. My numb leg quickly felt comfortable again.

Directing my attention to the ash stump, I observed that its root flare on the driveway side had obvious root rot decay where critical support was undoubtedly required. In hindsight, minimal excavation of the root flare could have allowed us to plan for this defect and avoid an unanticipated mishap.

Accidents surely do not just happen—this one could have and should have been prevented. Truly a lesson learned!

My first thought was a tagline which would allow my ground men leverage to remove some of the pressure. Receiving a tossed coil of line seemed to take forever. My leg was getting numb from the lack of circulation. In this awkward position, I was unable to flip the end of the line around because of the obstruction from my legs and the linden stem. I reached for my trusty handsaw to gain the added reach that I needed. With anxiety getting the better of me, my wriggling to stretch for the line’s tail caused the butt to shift slightly, allowing me to force my line over the log’s end. The butt went to the ground gracefully. I quickly rappelled, unclipped and removed my saddle. My numb leg quickly felt comfortable again.

Bill Tupper Jr. is the owner of Tupp’s Tree & Landscaping in Framingham, Mass.

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