Excellence 1999 Arboriculture Awards

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Volunteering: What’s In It for Me?

It says in the Bible that it’s better to give than to receive. Different religions and cultures phrase it differently, but the basic message is the same. I agree with the principle wholeheartedly. Except for paying my taxes, I feel enriched every time I give of myself.

There are various types of giving, each with its particular merits. One I recommend highly is volunteering. Why? Because with volunteering, you both give and receive.

I was recently in Phoenix as a guest speaker on a tree care program run by a large group of local volunteers. What was particularly meaningful to me was observing three individuals who were just getting to the point in their professional lives that they felt they could, and should, be giving something back to their industry.

For all I know, these individuals might have been old hands at volunteering through other church or community groups, and possibly even in behind-the-scenes activities with their peers. This, however, would be their first foray out in front of their peers as teachers and communicators. Furthermore, these were three people of Mexican ancestry whose awesome responsibility it was to translate and then deliver almost the entire day’s program to a Spanish-speaking audience.

By undertaking this challenge, they enriched the livelihoods and protected the lives of about 40 people in attendance. They also took their own professional lives to a new level.

There are lots of excuses for holding back from volunteering: busy schedules, competing demands, financial constraints, trepidations about helping the “competition” and even fear of public speaking. They’re all legitimate to some extent. Sometimes, you have to ignore the excuses and go for it. You won’t be sorry.

Laura, Margarito and Chris, three great volunteers.
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NAA’s Third Annual Excellence in Arboriculture Awards showcase the finest examples of professional tree care.

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Corde Valle Golf Club was beneficiary of expertise provided by Valley Crest Tree Company.
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The Official Publication of the National Arborist Association

Tree Care Industry Volume X Number 4

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TCI's mission is to engage and enlighten readers with the latest industry news and information on regulations, standards, practices, safety, innovations, products and equipment. We strive to serve as the definitive resource for commercial, residential, municipal and utility arborists, as well as for others involved in the care and maintenance of trees. The official publication of the non-profit National Arborist Association, we vow to sustain the same uncompromising standards of excellence as our members in the field, who adhere to the highest professional practices worldwide.
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The 1999 Excellence in Arboriculture Awards ceremony held at the NAA’s Winter Management Conference in Cancun, Mexico was one of the best ever. Sponsored by Husqvarna, the post-dinner ceremony was highlighted by a video presentation, taking a drive down memory lane of the previous years. The current year’s winners and their clients were then acknowledged by showing their winning entries during a slide presentation. This night left people spellbound and with a lot of enthusiasm for next year’s program.

While selecting the 1999 winners, the panel of judges considered adherence to A300 standards, sensitivity to species characteristics, finished product compared to tree(s) prior to the start of the project, challenges involved in project and impact of the finished product on tree(s) and site. The 1999 panel of judges were: William P. Kruidenier, executive director of International Society of Arboriculture; Tom Shotzbarger, chairperson of the Standards Review Committee; Dan Christie, president of Metropolitan Forestry Service and member of NAA board; and Tom Golon, president of Wonderland Tree Care and member of NAA board; and representing the American Society of Consulting Arborists, Gary R. Mullane, president of Low Country Tree Care, Inc.

The National Arborist Association would like to express its great appreciation for the time spent by all the judges, members of the Excellence Committee and the sponsor, Husqvarna, for making this program a great success. Please call 1-800-733-2622 for more details about Excellence 2000.
The project began by digging each tree by hand and selectively hand-pruning the roots. A backhoe was used to rough-shape the root balls and the hand-shaping method was used for the final preparation of each. After the root balls were wrapped in burlap and drum-laced, each was undercut and chains were attached in preparation for lifting. The pin oaks were hoisted onto a flat-bed trailer for transportation. Prior to placement in its newly-dug location, each pin oak was manually turned and stabilized as it was being set. As the extensive landscape project continued, we monitored the trees and maintained their needs through watering, fertilizing and pruning, as needed. Today, the pin oaks thrive and appear to have always been growing in the new "natural" setting.

Company: The Tree Doctor
Located: New South Wales, Australia
Category: Tree Relocation
Project: Stadium Australia by Multiplex
Trees: canary date palm, Phoenix canariensis; Moreton Bay fig, Ficus macrophylla; Hill's weeping fig, Ficus microcarpa 'Hillii'; cape chestnut, Calodendrum capense.
Project Location: Homebush Bay, Sydney, Australia

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canopy without making the trees look canopy with minimal impact to the un-
trees. The goal was to thin the forest
African tulip tree, eucalyptus and ficus
by water and is as dense as the rainforest
carefully met the terms of the contract
floodlights and flashlights, the crew
without over-thinning the trees during
moving the right amount of foliage
6:00 a.m. Being safe, selective and re-
lenge when Disney insisted all work
was using a rowboat to remove all debris
from water areas of the ride.

The project itself involved many species
of trees, both common and exotic, including
eleven species of bamboo, ten species
of palm, magnolias, dombeya, coral trees,
African tulip tree, eucalyptus and ficus
trees. The goal was to thin the forest
canopy with minimal impact to the un-
der-story of shrub material and to
selectively thin many trees forming the
canopy without making the trees look
as if they had been trimmed.
The project became more of a chal-

izec and removal of deadwood
pruning, some fertilization, and Integrated
Pest Management (IPM) on an as-needed
basis.
Arboricultural consulting in design in-
volved the following: inventory and
assessment of significant trees to be im-
acted by construction; development of a
critical root zone map based upon root in-
vestigation; review of all architecture, civil
engineering, landscape, hardscape and
utilities with respect to the critical root
zone map; development of tree preserva-
tion plan and specifications with the
landscape architect and design team;
and development of a strategy of con-
struction with construction manager
and owner’s representative.
Implementation of the tree preserva-
tion plan included the following: root
pruning with mechanical and hand meth-
ods; protective fencing with steel posts
and signs; crown cleaning and hazard
reduction pruning of all trees; wood chip
mulching; root aeration mat installed
prior to grade fill adjacent to major tree
roots; liquid sub-surface fertilization, in-
cluding mycorrhizal inoculant and soil
conditioners; pneumatic air excavation
for fence pier placement to avoid major roots;
plant health care, including periodic inspec-
tion for control of insects and diseases; and
on-going maintenance.
Arboricultural consulting in construc-
tion involved the following: paint and flag
trees designated for removal or preserva-
tion; designate trees for selective removal
by arboriculture contractor to avoid dam-
age to roots and crown of adjacent
trees; site walk with owners and project
team to review tree designations; field-
design adjustments for preservation of
additional trees; educational sessions
for major contractors; pre-construction
meeting to determine sequencing,
scheduling and access for protecting
trees; layout and implementation of
tree preservation activities prior to con-
struction; and periodic site visits to
schedule construction activities and re-
view of design for strategy of
construction.

Company: The Care of Trees
Located: Gaithersburg, Md.
Category: Tree Preservation
Project: Georgetown Visitation
Trees: A total of 45, including sy-
camore, Platanus occidentalis; white
ash, Fraxinus americana; European
beech, Fagus sylvatica; silver maples,
Acer saccharinum; willow oak,
Quercus phellos; white oak, Quercus
alba; white pine, Pinus strobus; pin
oak, Quercus palustris; honey locust,
Gleditsia triacanthos.
Project Location: Georgetown Visi-
tation Academy, Washington, D. C.
Large mature trees on the campus of
Georgetown Visitation Academy were pre-
viously maintained with deadwood
pruning, some fertilization, and Integrated
Pest Management (IPM) on an as-needed
basis.
Arboricultural consulting in design in-
volved the following: inventory and

Project: Building T-674
Tree: Chinese banyan, Ficus microcarpa
Project Location: Schofield Barracks
The subject tree was planted in the early
1900’s. The Army requested that this tree
be cut back tree from a high-security build-
ing to allow more light to penetrate in order
to increase visibility of unauthorized ve-
hicles. The tree also overhangs a roadway
with high foot traffic and underlying park-
ing areas, causing safety concerns.
The tree showed little evidence of pre-
vious pruning, except for the removal of
limb failures. The resulting overcrowded
branching structure adversely affected
limb development. The presence of mul-
iple trunks indicated it may have started
early over time. Deeply imbedded in the
center of the base of its massive trunk was

Company: Trees of Hawaii, Inc.
Location: Kapolei, Hawaii
Category: Commercial under $5,000
Project: Building T-674 A, Schofield
Barracks
Tree: Chinese banyan, Ficus microcarpa
Project Location: Schofield Barracks
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limb failures. The resulting overcrowded
branching structure adversely affected
limb development. The presence of mul-
iple trunks indicated it may have started
early over time. Deeply imbedded in the
center of the base of its massive trunk was
some piping and a faucet, now impossible to remove without serious damage.

Following ANSI A300 standards for pruning mature trees, maintenance pruning was performed with emphasis on improving the tree’s health and structure and increasing safety and security. A combination of aerial lifts and climbers were used to access areas near structures, around utility lines and over the driveway. The removal of selective limbs “lifted” the tree from nearby structures and opened up the canopy to allow light and air to penetrate. Further removal of weakened limbs made the tree more structurally sound to accommodate safety concerns.

Company: Valley Crest Tree Co.
Located: San Fernando, Calif.
Category: Tree Relocation
Project: Northwest Housing and Parking
Tree: Stone pine, Pinus pinea
Project Location: Los Angeles, Calif.

In addition to being sensitive to relocation, this 240-inch boxed Pinus pinea had additional issues, including access and grading.

Due to restricted access, a heavy hauler was required, along with a push truck to reach the final planting location. Box and tree weight equaled 110 tons, requiring two 250-ton conventional cranes for loading and setting. Crews labored day and night to compete the job on time. Special concrete deadmen had to be fabricated to provide anchors for cabling supports in the raised planter in which the tree was set. The tree continues to be the focal point of the project. It has performed well, producing new growth and removing dead and defective branches. Most had a significant accumulation of dead and defective branches. The scope of the project included pruning, cabling and tree removal. None of the trees in the area had ever received care. Most had a significant accumulation of dead and defective branches.

The project provided the opportunity to demonstrate pruning and removal operations on both Introduction to Forestry and Arboriculture classes. A300 crown cleaning and removal techniques on a 30-inch Southern red oak. The project safety coordinator

Valley Crest Tree Company project at Corde Valle Golf Club.

1998. The client’s desire was to achieve the look of an established golf course without the wait. By relocating 34 mature specimen oak trees, his needs were met.

The 34 coast live oak were growing approximately a half mile away from the development in native slopes. The terrain and time constraints were our biggest challenges. D 9 Caterpillar tractors were used to negotiate the terrain and successfully relocate each tree. We have taken great pleasure in participating in the creation of what may be one of the most outstanding golf courses in the area.

Company: Walgren, the Care of Trees, Inc.
Located: Hamden, CT
Category: Commercial over $5,000
Project: The Donald M. Kendall Sculpture Garden at PepsiCo World Headquarters
Trees: European littleleaf linden, Tilia cordata; golden Hinoki cypress, Chamaecyparis obtusa ‘Crippsii’; Japanese white pine, Pinus parviflora; dawn redwood, Metasequoia glyptostroboides; lacebark pine, Pinus bungeana; cedar of Lebanon, Cedrus libani; Plus other varieties comprising over 100 different species
Project Location: Purchase, New York

The Donald M. Kendall Sculpture Garden at PepsiCo World Headquarters in Purchase, N.Y., contains a vast array of deciduous and coniferous species—indigenous and exotic to the region—which comprise over 100 different tree species with thousands of trees.

Russell Page, the famous English landscape architect, began to extend the Gardens in 1980 and developed the “Golden Path” encompassing the approximately 168-acre site. The path leads visitors to the many sculptures, which Russell enhanced with plants representing the countries where PepsiCo has a presence.

An average of 3,000 to 4,000 man-hours are spent each year under some very rigorous challenges. As the site was created to provide a serene and peaceful environment for PepsiCo’s personnel, as well as the general public, work activities must be flexible and scheduled creatively. “Zero Noise” is the goal for much of the day. This means that work must be done with hand, electric or hydraulic tools during these times. The safety of PepsiCo personnel and visitors is of utmost importance.

Heritage Award

Company: The F.A. Bartlett Tree Expert Company
Located: Charlottesville, Va.
Category: Heritage
Project: The Wren House at the Southern Heritage Award
Trees: post oak, Quercus stellata; white oak, Quercus alba; Southern red oak, Quercus falcata; water oak, Quercus nigra; northern red oak, Quercus rubra; red maple, Acer rubrum
Project Location: Clemson, S.C.

The scope of the project included pruning, cabling and tree removal. None of the trees in the area had ever received care. Most had a significant accumulation of dead and defective branches.

The project provided the opportunity to demonstrate pruning and removal operations to both Introduction to Forestry and Arboriculture classes. A300 crown cleaning pruning was performed, as well as rigging and removal techniques on a 30-inch Southern red oak. The project safety coordinator
conduct a site safety audit for each class and reviewed the importance of site safety planning for every job.

There were several other teaching opportunities that week. A Careers in Arboriculture presentation for the Horticulture Club was well attended with more than 20 students.

A class on A300 pruning standards emphasized that the new A300 pruning standards were goal-oriented in nature and focused on the specific requirements of the plant (i.e. age, site, species or specific problem). Seeing pruning demonstrated in the field and then presenting and discussing the scientific aspects in the classroom offered a comprehensive understanding of the various needs for pruning. The classroom and outdoor demonstration was professionally videotaped by the university for future classes.

**Judges’ Award**

**Company:** Treeworks  
**Located:** Montpelier, Vt.  
**Category:** Tree Preservation  
**Project:** Growald Construction Mitigation Project  
**Project Location:** Shelburne, Vt.

The Growald home is located on historic Shelburne Farms, an 1100-acre parcel of the original Webb Estate and Shelburne Museum. Prior to beginning construction and final design of the addition to the house, I was asked to consult with the designer, landscape architect and builder to reduce construction damage. It was decided that a temporary roadbed would significantly reduce compaction and could be dismantled afterward.

Next, it was decided to aerate the soil and install AXIS, a porous ceramic with the unique ability to reach proctor density and surface to re-distribute the weight, thereby minimizing total long-term damage. The roadbed was lined with full-size railroad ties and staked with 2.5 foot long 2x3’s along their outer edge. Plywood was placed on the aerated surfaces in a cross-hatch pattern, breaking the joints with two layers of one-half inch sheets on top of each other to make a full one-inch of plywood for the second mitigation layer. The third layer, road fabric 18 feet wide, was then placed over the plywood to keep the fourth and final layer, 8-inches of gravel, from shifting under the weight of the construction vehicles. A total of 40 yards of gravel was used to complete the fourth and final mitigation layer. Safety fencing was placed along all access areas and placarded with signs stating, “Tree Preservation Area, Keep Out.”

The area next to trees was marked and trenched to cleanly cut the roots and supply a definitive demarcation line for the excavators. Trees within the swing of the excavator’s boom had their trunks protected with 2x4’s padded with rigid styrofoam board that were strapped to the trunks.

**Honorable Mentions**

**Company:** Arbor Care  
**Located:** Sarasota, FL  
**Category:** Commercial over $5,000  
**Project:** Sarasota Herald Tribune  
**Tree:** live oak, *Quercus virginiana*  
**Project Location:** Herald Tribune, Sarasota, Florida

In years past, it was customary during National Arborist Association Winter Management Meetings to commemorate local significant trees. In 1978 this association recognized a substantial live oak owned by the *New York Times.* Twenty years had passed and it was apparent that all the “warm fuzzy feelings” generated by this honor had subsided. This tree had degraded from an award-winning example in the community to a probable liability.

This project’s goal was to enhance the overall condition of this tree and develop a long-term relationship with the property owners. The win-win approach to business expanded from one tree on one property to a five-year contract encompassing four locations.

This tree is in a high-traffic, high-target area, making deadwood and poor structure a liability for the owner. Due to parking limitations, expensive satellite transmission equipment is often parked under the canopy. To accommodate the parking needs of the client and the needs of this tree, a cabling system was installed to minimize movement of the lower limb over the parking spaces.

The on-going maintenance program includes monitoring this system and adjustment. Additional services include: bi-annual maintenance pruning, semi-annual fertilization, and a long-term plan to reduce irrigation and turf/tree conflicts through landscape modifications.

---

*Walgren, the Care of Trees, Inc. project at PepsiCo World Headquarters.*
Project Location: Riverwoods, Ill.

Thorngate is an 84-acre community in Riverwoods, Ill. that was developed by Lexington Homes from land that was once the Thorngate Golf Course. Until the golf course was purchased, tree maintenance was marginal for the oak and hickory trees, which are 60 to 150 years old.

Even before the arborists came onto this property, Thorngate sat in litigation with the Village of Riverwoods because of zoning, drainage and tree preservation considerations.

The plans for the site had to include the retention of as many of these trees as possible. Out of several hundred mature oak and hickory, less than 12 were removed and another 80 were transplanted. All trees to be saved were pruned to A300 standards, mulched to the drip-line, root pruned where necessary, put on a fertilization and IPM program, and protected by a total of 37,000 feet of fences during construction. The trees were also inspected once a week during construction.

One of the on-site decisions that was made to stay with the overall plan of tree preservation was the field change that was made in the design of a roadway to avoid the destruction of an old oak tree that was to become known as “Jerry’s Tree.” Jerry was the superintendent who made the change based on information retained from a seminar presented by our firm.

Company: Hendrickson, the Care of Trees
Located: Wheeling, Ill.
Category: Tree Preservation
Project: Thorngate
Tress: burr oak, Quercus macrocarpa; white oak, Quercus alba; red oak, Quercus rubra; shagbark hickory, Carya ovata
Project Location: Riverwoods, Ill.
Candid comments from our readers ...

The Realities of Electrical Related Contact Accidents

I am concerned by the article entitled "The Emergency Response/Aerial Rescue Initiative," authored by Mr. Ken Palmer (Feb. 1999 TCI, page 12) which may leave readers with the impression that a "standard" for aerial rescue has been established by the National Arborist Association’s Electrical Hazards Awareness Program (EHAP).

Mr. Palmer criticized the aerial rescue portion of the EHAP program as evidenced by statements such as: "concerns have been raised that current procedures may endanger the rescuer, and that the emphasis on speed may result in errors,"; "No such time standard or requirement has been set by any other professional rescue organization,"; "We should be thoughtfully teaching realistic procedures, while being careful not to set the wrong precedent,"; and, "The current approach of using general, and often unrealistic guidelines can create a more chaotic and dangerous environment than initially existed."

Considering these critical comments, it is important to recognize that the focus of EHAP is on electrical hazards only, not on the broader spectrum of potential hazards that might necessitate a rescue. Thus, EHAP requires that the rescue be performed at a height of at least 35 feet because this is the average height of an electric system distribution circuit. The program also requires that the victim be rescued within four minutes because ventricular fibrillation is very likely in an electrical contact emergency, and four minutes is the maximum amount of time that can elapse before brain damage begins to occur if an electrical contact victim's heart has stopped.

Unfortunately, the presence of electrical hazards combined with the need for the rapid retrieval of the victim of a contact accident are the realities of most electrical related contact accidents.

The EHAP section on rescue and accompanying video training acknowledges that there can be many causes for emergencies aloft, as well as many hazards to the would-be rescuer. For these reasons, their overriding message is to evaluate the situation carefully and not attempt the rescue if it cannot be performed safely. This is clearly the evidence in the EHAP text which states in part: "never attempt an aerial rescue unless you are sure it can be done safely.", "to assure the rescuers safety, use extreme caution in a rescue attempt, think before you act! Never attempt a rescue unless you are sure it can be done safely, without exposing yourself to injury or death.", "remember, do not attempt a rescue unless you are sure it can be done without risking your life"; and "use extreme caution in any rescue attempt so as not to endanger the rescuer." These considerations obviously reflect the NAA’s concerns for the safety of rescuers who, as a result of EHAP program training, would also be made knowledgeable of the need for quick (4 minute) response in certain situations. This clearly does not mean to imply that rescuers should throw all caution to the wind and go about the process in a haphazard fashion.

Mr. Palmer is right. No time standard or requirement has been set by any other professional rescue organization. Maybe it is because no other group faces the unique set of circumstances an arborist does when working in and around trees proximate to energized electrical conductors. However, with the established aerial rescue procedure that exists within my company, and I am sure in many others, time is a secondary consideration.

James C. Allard
Vice President-Director of Safety
Asplundh Tree Expert Co.

A300 Valuable for Grounds Managers

While reading the article in the February issue of TCI regarding ANSI specs., I realized how valuable this tool could be for me. I am the Grounds Manager of a 120-acre campus with a comparatively small staff. Our intent as a grounds department is to do as much as possible in-house to maintain our high quality standards. However, there comes a time when we must contract out. It is these times that are most difficult for me for two reasons—ensuring that I get the service I desire, and choosing the contractor based on quality, professionalism, and cost.

I am not a certified arborist and therefore depend somewhat on the Davey’s and Bartlett’s of this world. I have over 1000 deciduous trees and more than 300 pines and conifers to manage and have never seen ANSI A300, even from big companies.

I found something very important to me that was not mentioned in the article. I can use ANSI A300 to develop the specs for my contractors rather than waiting for them to set the specs for me. I also will now have a tool to measure the quality of their service.

John R. Davis III
john.davis.jd1@roche.com

Send letters to: Editor, TCI, PO Box 1094, Amherst, NH 03031. All letters are subject to editing for style and length.
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Assistance With Toughest Job in the Profession

Taxes, insurance, government regulations, profitability—all are vital in running a tree care business. But none of these are the source of the industry's biggest current headache—staffing.

Encouraging a steady flow of willing and competent employees through the door, both experienced and trainable, has become the hardest task in today's booming economy. Company owners can usually attract experienced personnel, but only at a steep premium that erases profits. Convincing teens and young adults of the truly rewarding careers available in tree care has never been more difficult. What's a company owner to do?

Wayne Outlaw, author of *Smart Staffing: How to Hire, Reward and Keep Top Employees for Your Growing Company*, offers some answers.

This comprehensive guide addresses the importance of:

**Determining what kind of employees to look for.** Employees in the tree care industry are front-line ambassadors who can make your life easier and your business more profitable ... or they can get you sued and drive clients away. Outlaw urges readers to look beyond the resume (while noting that 45 percent of resumes contain false information) to investigate attitudes and values. He stresses that you can train someone in the skills of your profession, but you can't teach strength of character or a positive outlook on life.

**Understanding the legal responsibilities involved with staffing.** You don't need to be a lawyer to run a tree care business, but sometimes it sure feels as if you should be. Outlaw walks readers through the process of creating customized, legal job applications. After all, the skills you are looking for in a salesman are different from a crew leader. Best of all, Outlaw includes specific language on "certification and agreement clauses" that employment lawyers recommend for your application documents.

**Developing an aggressive recruiting plan to attract top performers.** From defining the job to finding the applicants to scheduling the interviews, Outlaw helps readers develop a recruiting plan that can be changed to fit specific needs. If you have ever wondered how to write a classified ad, how specific you should be regarding salary levels or how often to change the words of an ad, he offers tips on the best way to proceed.

**Preparing for the interview to ensure vital information is addressed.** Just as you don't want to waste your time interviewing applicants who are unsuitable, you also don't want to lose a potentially great employee because you or your employees made a bad impression. Screening, preparing for an interview, conducting the interview and rating the candidates are all discussed.

**Implementing strategies to keep top employees and reduce turnover.** Once you have assembled your team, how do you keep it together and motivated? Retaining good people and creating a work environment which reinforces a team concept may be the most important factor in the success of a small business. Outlaw details training, communication and financial tactics that keep a company moving forward.

One nice feature of the book is the "Frequently Asked Questions" section at the end of each chapter. They help summarize the message presented in the chapter, while recognizing that broad advice often brings to mind very specific, real-life "Yeah, but what if ..." situations. Among the questions are:

* How much turnover is too much?*
* What's the difference between orientation and training?*
* How can I conduct orientation in a small business when I need all my employees to do their jobs?*
* How much should the pay increase for certification be?*
* If the problem [someone leaving] is because of money, should I increase the salary to keep the departing employee?*

Perhaps the most valuable section of the book is the appendices, which contain 40 pages of easily copied forms. (Not a surprising design from a former Xerox branch marketing manager.) The forms follow along with the chapters, starting with Job Definition and Hiring Criteria sheets all the way to an Exit Interview form. If your idea of record-keeping is scribbling notes on the margins of a resume or job application, these forms are for you.

*Smart Staffing: How to Hire, Reward and Keep Top Employees for Your Growing Company* won't make you an instant personnel expert. The author does a good job, however, in assembling easy-to-use advice from a wide range of experts in the field. The book is available from Upstart Publishing Company at 800-829-7934.
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### Brush Chipper Knives

<table>
<thead>
<tr>
<th>Knife Size</th>
<th>Price Each</th>
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<tr>
<td>7¼&quot; x 4&quot; x ⅜&quot;</td>
<td>$22.00</td>
</tr>
<tr>
<td>7¼&quot; x 4&quot; x ½&quot;</td>
<td>$26.75</td>
</tr>
<tr>
<td>8&quot; x 3½&quot; x ⅜&quot;</td>
<td>$24.10</td>
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<tr>
<td>10½&quot; x 5&quot; x ½&quot;</td>
<td>$33.50</td>
</tr>
<tr>
<td>12&quot; x 3&quot; x ⅜&quot;</td>
<td>$20.85</td>
</tr>
</tbody>
</table>

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Still Time for Cabling, Bracing, and Guying Comments

ANSI A300 (Part 3)-DRAFT 07 Tree Support Systems a. Cabling, Bracing, and Guying had a public comment period of Jan. 15 to March 16, 1999. The text of this important draft was included in the January issue of TCI magazine. The new forward to ANSI A300 was included in the February issue of TCI magazine. Annex A of the Part 3 draft, Size, strength and application tables for support system hardware, is provided on this page for your examination. Take a moment to read it and submit comments. The committee will accept comments on the Annex A drafts after the public comment period has ended.

Annex A -
Size, strength, and application tables for support system hardware.

Table A-1:
Minimum hardware size for cabling trees. N/A indicates not an acceptable application.

<table>
<thead>
<tr>
<th>Maximum Limb Diameter at point of attachment in inches</th>
<th>Estimated Load in pounds</th>
<th>Lag Hook diameter in inches</th>
<th>Eye Bolt diameter in inches</th>
<th>Aman nut / Loop nut Threaded-rod diameter in inches</th>
<th>Common Grade Cable (galvanized, 1 x 7) diameter in inches</th>
<th>Extra High Strength Cable (1 x 7) diameter in inches</th>
<th>Aircraft Cable (galvanized, 7 x 19) diameter in inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>100</td>
<td>1/4</td>
<td>1/4</td>
<td>1/4</td>
<td>1/8</td>
<td>3/16</td>
<td>1/8</td>
</tr>
<tr>
<td>3.5</td>
<td>200</td>
<td>5/16</td>
<td>1/4</td>
<td>1/4</td>
<td>3/16</td>
<td>3/16</td>
<td>1/8</td>
</tr>
<tr>
<td>5</td>
<td>300</td>
<td>3/8</td>
<td>1/4</td>
<td>1/4</td>
<td>3/16</td>
<td>3/16</td>
<td>1/8</td>
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<tr>
<td>8</td>
<td>600</td>
<td>1/2</td>
<td>5/16</td>
<td>1/4</td>
<td>3/16</td>
<td>3/16</td>
<td>1/4</td>
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<tr>
<td>10</td>
<td>900</td>
<td>3/8</td>
<td>1/4</td>
<td>3/16</td>
<td>3/16</td>
<td>3/16</td>
<td>1/4</td>
</tr>
<tr>
<td>15</td>
<td>1000</td>
<td>N/A</td>
<td>3/8</td>
<td>3/16</td>
<td>1/4</td>
<td>1/4</td>
<td>1/4</td>
</tr>
<tr>
<td>18</td>
<td>1200</td>
<td>N/A</td>
<td>3/8</td>
<td>1/4</td>
<td>1/4</td>
<td>1/4</td>
<td>1/4</td>
</tr>
<tr>
<td>20</td>
<td>1400</td>
<td>N/A</td>
<td>3/8</td>
<td>1/4</td>
<td>5/16</td>
<td>1/4</td>
<td>1/4</td>
</tr>
<tr>
<td>24</td>
<td>2200</td>
<td>N/A</td>
<td>3/8</td>
<td>1/4</td>
<td>5/16</td>
<td>1/4</td>
<td>1/4</td>
</tr>
<tr>
<td>28</td>
<td>3300</td>
<td>N/A</td>
<td>5/8</td>
<td>1/4</td>
<td>7/16</td>
<td>1/4</td>
<td>1/4</td>
</tr>
<tr>
<td>30</td>
<td>3700</td>
<td>N/A</td>
<td>5/8</td>
<td>1/4</td>
<td>7/16</td>
<td>1/4</td>
<td>1/4</td>
</tr>
</tbody>
</table>

Table A-3:
Minimum hardware requirements for bracing trees.

<table>
<thead>
<tr>
<th>Diameter at Brace (in inches)</th>
<th>Brace Rod Diameter (in inches)</th>
<th>Minimum Number of Rods w/ Split</th>
<th>Minimum Number of Rods w/o Split</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;5</td>
<td>1/4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5-8</td>
<td>3/8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>8-14</td>
<td>1/2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>14-20</td>
<td>5/8</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>20-30</td>
<td>3/4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>30-40</td>
<td>3/4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>&gt;40</td>
<td>7/8</td>
<td>4 min. with one additional for each 8&quot; in excess of 40&quot;</td>
<td>3</td>
</tr>
</tbody>
</table>
Porter-Ferguson’s Forester brand of brush cutters are designed for comfort during heavy pruning. The 0290F is 27-inches long, weighs 4 pounds 10 ounces, and has a cutting capacity of 1.5 inches. The 0390F is 34-inches long, weighs 7 pounds 12 ounces, and is designed to cut 2-inch material. Because both blades cut, there is more precision to insure against damage to bark and cambium and promote healing. Both models feature a slide power shift, providing maximum leverage to cut through hard metal or branches as thick as two inches. For cutting heavy material as well as small shoots, the Point Cut Pruner can handle material up to 1.25 inches thick. For smaller cuts, it cuts right down to its tips with minimum handle spread. Like the brush cutters, the pruner also has dual cutting blades. It's 24-inches long and weighs 3 pounds. For more information, call (800) 456-9355.

Announcing the release of ArborGold 2000 Software, Version 8.0. The business management software is designed specifically for tree care companies. ArborGold 2000 is fully compatible with all Microsoft Office Products. Users with Microsoft Office 97 can customize their own reports, and easily export information to other Microsoft programs, i.e., Excel, Word, Scheduler, and Outlook. For more information, contact Tree Management Systems, Inc. at 800-933-1955 or download a free demo at http://www.turftree.com. E-mail: tms@turftree.com

Gempler’s new 64-page comprehensive guidebook, “How to Avoid an OSHA Nightmare,” has been written for agriculture and horticulture employers by safety, employment and OSHA law experts. The book includes tips and checklists on how to reduce your chances of inspections, what an inspector looks for, how to prepare for an inspection, how to reduce the proposed fine and contest an OSHA citation. For more information, call (800) 382-8473.

The TreeTop II speeds inspection times and reduces the need for climbing trees. It is a color video camera mounted on a 50-foot telescoping fiber-optic pole. High-resolution images are displayed on a 3.8-inch diagonal ground level LCD monitor mounted on the base of the pole. The cable spool with rotary electronic feed-through manages 50 feet of camera cable. With the low weight (16 pounds) and ergonomic design, it is feasible for one arborist to conduct surveys that previously required two people. The total carry weight includes the battery and 50-foot pole. For more information, call (800) 928-9111.
Morbark recently introduced the Model 7600 Wood Hog, nicknamed "Boss Hog," its largest, most productive horizontal grinder ever. Weighing 90,000 pounds, it is the first of three new models slated for introduction in 1999. With options ranging from 860 to 990 hp, a 49-inch diameter grinding drum mounted on an 8.5-inch shaft and an aggressive feed system, the Model 7600 is capable of continuous product output of up to 400 yards an hour, depending on the material being processed. A full-size hinged door permits access to a spacious area behind the grinding drum and grate with no bending or crawling required. A swing arm mechanism equipped with a one-ton capacity lifting device makes it possible for one mechanic to remove and change rates. A secure safety yoke locking system lets one man safely access the front of the grinding drum for changing hammer inserts and other routine maintenance. Catastrophic damage protection for the engine, clutch, drive train and drum is provided with a full breakaway torque limiter system. This technology is designed to stop the drum on impact and allow the engine to free wheel in the event that large pieces of steel, rock or other contaminants are encountered. For information, call Morbark at (800) 233-6065.

Cleary Chemical Corporation recently received EPA approval of several important label amendments for its 336 F turf and ornamental fungicide. These amendments provide additional uses and benefits for the ornamental market. The fungicide is a flowable suspension of thiophanate-methyl and remains the industry leader in formulation and use technology. For more information, call (800) 524-1662.

SwapLoader has announced the all-new SL-145 to replace the SL-125 Hook-Lift Hoist. The SL-145 retains the benefits built into SL-125, and adds 2,000 pounds with a 7-ton lift capacity with no increase in price. For more information, call SwapLoader at (515) 266-3042.

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MTI Buys TECO

Colorado-based Mobile Tool International, Inc. (MTI) has acquired the assets of TECO, Inc. and formed a new, wholly-owned subsidiary, MTI Insulated Products, Inc. The announcement was made by Van Walbridge, president of MTI.

"TECO and Holan insulated aerial lifts and digger derricks have been brought together through this new subsidiary to further broaden and strengthen MTI's ability to provide a complete line of aerial lifts, both insulated and non-insulated, to be sold domestically and worldwide," said Van Walbridge.

Due to overlap between product lines, redundant lifts will be eliminated; however, parts will continue to be available for discontinued models.

LandCare Acquisitions

LandCare USA, Inc. announces additional acquisitions. Since its most recent announcement on Nov. 10, 1998, LandCare USA has completed eight acquisitions with total annual revenue run rate of approximately $36 million. Three of these acquisitions represent entry into new geographic locations including Nevada, Oklahoma and Indiana. The other five acquisitions expand the company's existing position in Arizona, California, Georgia and Texas.

On Nov. 2, 1998, LandCare USA and ServiceMaster Company jointly announced the execution of an agreement through which ServiceMaster will acquire LandCare USA in a stock-for-stock merger.

Shindaiwa Promotion

Shindaiwa Inc. names Dave Dahlstrom as director of marketing and business development. In his new position, Dahlstrom, who has been with Shindaiwa in various capacities since 1991, will lead the company's investigation of new products and distribution channels.

"The focus of this job is twofold," Dahlstrom said. "One, I'm to investigate new distribution channels, like construction or highway maintenance, for our existing product lines. And two, I'm to seek out new products to expand Shindaiwa's line in our existing channels."

Dahlstrom has over 20 years experience in sales, marketing and communications for businesses ranging from financial services to computer software to power equipment.

Husky Hits the Road

Husqvarna Forest & Garden Company rolled out a fleet of fully-equipped mobile training units in February, which will travel a quarter of a million miles each year across America. More than 2,000 dealers will benefit from the on-site training program.

The 34-foot-long mobile training units feature eight student workstations and a big-screen terminal for instruction by video and computer display. Each of the training centers is stocked with special tools and equipment to train students on product use and repair. In addition to holding full three-day schools year-round in each training unit, Husqvarna plans to host product update classes, new dealer training and regional dealer meetings on an ongoing basis.

One dealer in Montgomery, Ala., has invited many of his utility worker customers and had an excellent response. In addition to selling more saws, one of the goals of the program is to train customers, so they can make minor adjustments to equipment in the field.

New Lift Company

Have you heard the forecast?
There’s a storm on the horizon.

A new line-up of hand-fed chippers from Morbark, coming in 1999
1-800-362-9010
Rinse & Recycle

Don’t throw away those plastic pesticide containers piling up in your shop. Recycle them instead. An innovative and growing program funded by the Agricultural Container Research Council (ACRC) is making recycling easier for arborists and landscapers.

How the program works

The ACRC is a non-profit organization formed in 1992 to promote safe handling and recycling of crop protection product containers.

The ACRC grew out of experimental programs in the late 1980s, when partnerships between industry and the public sector demonstrated that HDPE container collection was feasible. The council has focused its efforts on plastic pesticide container collection and recycling. Member companies, who are major pesticide producers and distributors, pay an assessment to fund container collection programs and support research to find uses for returned containers.

While farmers are by far the largest users, the program is of interest and benefit to arborists in several ways:

- it reduces the burden on local, solid waste disposal facilities;
- it aids commercial applicators concerned about residue build-up on their property;
- it prevents incineration or dumping of empty pesticide containers;
- it conserves a non-renewable resource that can be recycled into other products.

The ACRC does not own recycling equipment, but pays independent companies to run collection sites and ship the recovered plastic to recycling facilities. [See map on page 26 for center nearest you.]

Since the program’s inception, participation has increased dramatically. Today, more than 6 million pounds of plastic, or about 10 million containers, are collected annually through the program. This amounts to almost one-third of all the 2.5 gallon HDPE containers entering the system each year.

The vast majority of HDPE containers subject to this program are filled with professional products that are essentially non-toxic or of extremely low toxicity. For instance, most agricultural users are large consumers of adjuvants.

Approximately 35 percent or more of containers at collection site are known as “stickers, spreaders (like detergent), vegetable oils” and other products that make the crop protection chemical work better. Of course, there are some pesticides that are toxic if humans are exposed at sufficient concentrations, but the numbers are a tiny fraction of the containers that are recycled through this program.

Fate of collected plastic

Most collection programs, like those run in many urban locations, result in a mixture of plastics. To find a use for this plastic the broker must find a client who can use unsorted plastics, one who can sort and use all of the plastics, or the broker must first sort the plastic and then find buyers for the different streams. In many cases, such mixed streams do not have sufficient economical value and they become just another waste that is burned or buried.

The material from ACRC-sponsored collection programs is desirable, but there are barriers to finding customers. Some restrictions have been imposed by the ACRC. There are also restrictions created by the purchaser, such as cleanliness, odor, color and percentage of cross contamination of other plastics.

If everyone does his job, then the material available from collection is an attractive source of plastic, but this is a relatively fragile chain. The contractor is hoping that the containers have been properly rinsed and inspected and most of the non-HDPE containers have been removed.

The broker will try to find a market, but he has to honor the ACRC’s environmental and site concerns about the manufacturer’s facility, which mandate that design of the operation of the site should not permit the introduction of the material into non-approved uses. This restriction significantly reduces the number of outlets available to the broker.

Contractors who collect these materials must rely on the integrity of the individual returning containers to collection sites. It is perhaps hard to believe when viewing a pile of containers destined for recycling that the presence of a couple of non-HDPE containers or a few unrinsed containers could impact the entire collection program, but they could.

The contractor can only put so much effort into sorting containers prior to grinding, so the final burden falls upon the individuals who return the containers. As long as relatively pure streams of HDPE are gathered at collection sites, environmentally sound markets can be found.

The mandate of the ACRC from its inception was to assure users, regulators and sponsoring industry that HDPE can be recovered and utilized in a manner that poses no undue risks to humans and the environment. Once plastic containers are removed...
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• Cooperative Tree Manager For Windows
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• Tele-Time
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  ACRT contract urban foresters can supplement staff, provide specialized expertise or function as the city forester on an as-needed basis.
• Tree Manager For Windows
  ACRT’s popular Tree Manager program now uses Windows 95 or Windows NT for the demanding task of managing urban trees.
• Community Tree Manager
  This version of ACRT’s Urban Tree Manager for Windows is for smaller communities.

• GIS/GPS
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  Workshops and courses are taught on a regular basis at the ACRT Institute of Arboriculture & Urban Forestry in Ohio. Dates and costs are listed in our free catalog.
• Job Corps/JTPA
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from the environment, the immediate question is what to do with them. Chipping and granulation reduce bulk but do not address the question of ultimate reuse.

To address this challenge, the council assembled a Technical Committee of scientists, engineers, and policy analysts charged with evaluating reuse options. As you would expect, because collected plastic was once in contact with a pesticide, there will always be concerns for potential effects on the environment and human health. The Technical Committee is funding programs to evaluate alternative cleaning procedures for plastic and whether there are detectable residues of pesticide in the plastic. Information from these programs will obviously affect which recycling uses remain viable.

There are a range of products made from collected HDPE. Of utmost importance is that the resin be utilized in such a way that any residues on or in the resin will have no adverse affect on the environment or the user. The Technical Committee evaluates both processes and uses.

In the early 1990's many felt that the ideal disposition for recovered plastic would be the production of "new" pesticide containers: virtually a closed loop. Although it is technologically possible to manufacture containers from collected resin, recycle-content pesticide containers have not been an attractive alternative to date for a variety of reasons.

On the other hand, the recovery of energy from collected plastic has proven an environmentally viable disposition. High-density polyethylene has one of the highest releases of energy when ignited. It also burns cleaner than any fossil fuel except natural gas. Since HDPE is com-
posed of almost pure hydrocarbons and contains far fewer contaminants than coal or unrefined oil. PCR from properly rinsed pesticide containers burns cleanly in utility and cement production combustion chambers.

By the mid 1990's, the Technical Committee established a risk assessment model for evaluation of proposed end-uses. Full approval for any project would take months or even years, yet certain end-uses appeared so promising and were inherently of such low risk that monitored and controlled uses could potentially be allowed while research, testing, and model development were finalized.

A "Conditional Use" status was created, allowing limited production—even though additional research was required. As of Nov. 1, 1998, end-use recycled products deemed acceptable are: pallets, construction site mats, commercial truck/manure spreader decker boards, field drain tiles, speed bumps, parking stops, fence posts, hazardous waste drums, scaffold nailing strips, commercial truck sub-floor support members, plastic pesticide containers, and energy recovery.

With the exception of the last two uses listed (plastic pesticide containers and energy recovery), all of the approved list are conditionally approved while additional studies are underway. All other processes and products are deemed unacceptable at this time.

Proper rinsing is the key!

Acceptable end-use products can be manufactured in a safe manner as long as certain safeguards and routinely recognized procedures are followed. The procedures guaranteeing safe use start in the field. Most products, even with standing liquid, will not trigger "hazardous waste" classification or regulation as defined by EPA. Despite this, the ACRC requires its granulation contractors to enforce a standard that is considerably more restrictive for cleanliness than either the regulations implementing the hazardous waste laws or those regulating pesticides. In fact, the ACRC publishes training videos and literature that prescribe a level of rinsing for containers as restrictive as the rinsing requirements proposed by the EPA—

even though those standards have never been adopted.

Eleven studies, summarized in an EPA Report to Congress, indicate that over 99.99 percent of the pesticide residues are removed when recommended rinsing practices, or even less stringent standards, are followed.

Observers sometimes doubt this efficacy when stains or odors are detected in the granulate collected from the ACRC program. These false indications are often the result of plastic container exposure to certain intense coloring or odor-producing agents, detectable by sight and smell at incredibly small fractions of a percentage point (part per hundred), actually at the part per billion level.

The first step is to thoroughly rinse all residues from the containers immediately after use. Only dry, properly rinsed containers are accepted at collection sites.

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Checklist for Federal OSHA Compliance

By Steven R. Semler

Why me?

As far as the tree care industry is concerned, OSHA is a prosecutor responsible for enforcing occupational safety and health regulations on the job, affecting you and your employees. You may wonder how you become the subject of an OSHA inspection. There are many reasons that would prompt OSHA to target your company.

1. Drive-by inspection. An OSHA compliance officer driving down the road sees your crew and decides to stop. Maybe somebody who should be wearing a hard hat isn’t. That would be enough for him to stop and inspect.

2. Programmed inspection. The government may compile a list of employers in an industry and place a special emphasis on those employers. In some states, tree care companies have been specifically targeted by OSHA offices, or criteria may be based on accident rates and workers’ compensation statistics. You rise to the top of the list.

Under the Fourth Amendment of the U.S. Constitution, you are protected from unreasonable searches and seizures, which means there must be a search warrant before the government can inspect your premises. However, when you work out in the open as tree crews do, the government does not need a search warrant.

3. Complaint inspection. A complaint inspection is triggered when an employee files a complaint with OSHA because the employee thinks he is working in unsafe conditions. You have a right to see the government complaint form, but you do not have a right to see the name of the employee who initiated it. You are also statutorily barred from taking any retaliatory action against an employee who initiates a complaint against you.

4. Fatality. If you a have a fatality or if three people are injured who require hospitalization, you have to report the incident to OSHA. If there is a fatality, you have 24 hours (irrespective of weekends or holidays) to report that fatality. Failure to report an on-the-job or a job-related fatality is, in itself, a violation.

What happens during an OSHA inspection?

OSHA inspectors must show you identification. They have a right, without an unreasonable delay, to start their inspection. They have the right to interview rank-and-file employees without you standing nearby. They cannot unreasonably interfere with your operations, but you do not have to continue working during the inspection. In fact, you may want to shut down. By then it might be too late, however, since the inspector might have been watching your crews for an hour or so beforehand. OSHA inspectors do not drive marked cars, and they do not wear uniforms.

They have the right to inspect your operations, review records such as the OSHA 200 form or training materials, and they may want to interview employees. Employees do not have to give statements. Supervisors, managers and fore-
men can wait until company counsel is present to give a statement. It is their option to insist on representation, because they are your agents on the job. Just as you have a right to counsel, by extension as your representatives, they do too.

After inspection, the OSHA officer may not issue citations on the spot. Instead, he or she will review findings against regulations. An inspector will draft a proposed violation, which will be reviewed a supervisor, and ultimately reviewed and signed off on by the area director.

Before a citation is issued, the government will call or visit to give you a heads-up as to what is coming down. During this closing conference, the inspector typically will not tell you what the proposed fine is. A few days later, a citation will arrive in the mail. It will list the specific regulation you are alleged to have violated. For instance, 1910.269b—you did not have someone trained in CPR on your crew under circumstances in which you were obligated to have someone. The citation will have a proposed penalty, depending on the gravity and circumstances, from zero to $70,000.

Basis for citation

With one exception, every citation will begin with the number 1910. If the citation references anything other than 1910, you should inquire further. Another set of standards, beginning with 1926, cover requirements for the construction industry. Virtually all of your operations are not covered by construction industry standards, yet occasionally a compliance officer makes a good-faith mistake. In almost all cases, tree removal incident to residential, commercial or line clearance work is a general industry, not a construction issue.

If the inspector can't find anything for which to issue a citation in industry standards, there is a "kitchen sink" category called the general duty standard or a section 5(a)(1) violation. The general duty standard enables the compliance officer to issue a citation for something that they believe is unsafe—even though it is not covered by a regulation.

You may ask how you are supposed to avoid something that isn't covered by a regulation. That is a fair constitutional claim. The answer is: one of two things must happen before a general duty citation can be issued.

1. The industry must recognize that an activity is unsafe. And what source of knowledge does the industry recognize? Typically, it would be the ANSI Z133 standard. If the industry recognizes that a practice is unsafe or a safe practice is required—and you did not conform to that practice as outlined in Z133—that failure will be the basis for a general duty violation, even though it is not covered by a specific regulation.

2. Suppose nothing in ANSI Z133 covers a practice, but you have reason to know it is unsafe because something happened before. A previous incident or accident should have given you independent knowledge that the practice is unsafe. If OSHA can show that you knew and you did nothing, they can come after you based on what you should have known.

Classification of alleged violations and proposed fines

There are at least seven different classifications of penalty. They all have extreme significance, and they should not be disregarded as simply a word on the citation. You must consider each of these classifications of citations so you can evaluate your course of action accordingly. Briefly, they are:

1. "Di Minimis," which is Latin for "a trifle, an insignificant thing." A compliance officer who wants to justify his time at your job site, or who has found a small violation but considers it a good-faith error, can issue a Di Minimis citation. It could have no monetary penalty attached to it. If you have to get a citation, this is the one you want.

Compliance Tips

✓ Have a safety program.
✓ Train your employees.
✓ Keep records of training.
✓ Keep records of discipline and enforcement.

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2. "Other," which is short for "Other Than Serious." The most important thing to know about this type of citation is that the statute caps the potential penalty at $7,000.

3. "Serious." For this citation to be issued, the government must believe the violation could give rise to serious bodily harm or death—even though nobody has been injured. A Serious citation has a potential penalty of up to $7,000.

4. A "Willful" violation is one that the government feels that you committed, even though you knew that the practice was improper. For instance, if you know that your people are supposed to wear hard hats and you universally ignore the requirement, that is a flagrant disregard for a safety requirement. The fine for a Willful violation can go as high as $70,000.

5. A "Repeat" violation is the reoccurrence of a violation for which you have been cited within the last three years anywhere in the United States. For national or regional operations, this would include violations by any branch office committed in a federal OSHA state.

6. "§17 (unclassified). This is a citation for which none of the above classifications is stated. It avoids the stigma of a Willful or Repeat violation and carries a penalty of up to $70,000 per violation.

7. "Willful with Fatality" is a Willful citation (as above) resulting in a fatality and carries a penalty of up to six months in jail plus a fine.

The seductive trap of settling

At this point, you must decide what

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OSHA Hears Your Concerns

By Paul Cyr

OSHA is listening to the concerns of the tree care industry, and we are solidly committed to addressing your concerns by working with you, not against you. We hope you will also work with us to address OSHA's concerns about safety and health issues.

At TCI EXPO, a woman on the trade show floor saw my badge and asked if I were really with OSHA. When I told her I was, she said, "When you folks at OSHA compare arborists with loggers, it's a lot like comparing brain surgery with mortician work."

What she said made an impression on me. We need to get to know each other better. OSHA needs to understand your industry, learn about your industry, and we are committed to doing that.

I am serious about this project, because we have a rare and unique opportunity to make an impact on safety and health issues that affect tree care. I also challenge you to learn a little more about OSHA. There is a new thinking within OSHA that stresses ways other than citations and penalties to achieve meaningful reductions in injuries, illnesses and fatalities in the workplace. We have a big job ahead of us, but we are serious about this commitment to work with you on this endeavor.

For those of you who may not have heard, with the cooperation of the National Arborist Association and my superiors in Washington, we have set up two committees to address your concerns.

One will engage in a dialogue on coverage: How do OSHA standards in general industry impact you and your industry? Only by learning more about tree care will we be able to make intelligent decisions together about coverage of OSHA regulations. This effort will also clarify standards for you and for our field compliance officers.

More importantly, the second committee will address ways to reach out to your industry on training and information about safety and health issues. We need to work cooperatively to address the hazards faced by working arborists. How do we eliminate those hazards so that people do not get hurt? In my mind, that is more important than coverage of regulations. OSHA is going to visit very few workplaces, but together we can impact that injury, illness and fatality rate, which I think is still too high in a lot of industries around the country.

It is important for us to focus on these two committees. First, we need to learn about each other. Then, we can engage in dialogue to effect meaningful changes in our safety and health programs, so that if OSHA does visit you, there are no problems to be found.

I hope to accomplish this task outside of the regulatory process, which I view as the last resort. The folks that OSHA has participating on these committees are going in with an open mind. We have not made any decisions yet, and we are not going to make any until we sit down with you and listen carefully and work with you. I look forward to listening to you. I look forward to your ideas. I look forward to hearing your thoughts. I look forward to some meaningful dialogue. Let's make this happen.

Paul Cyr is a technical specialist with OSHA's Directorate of Compliance Programs in Washington, D.C. This article was excerpted from a speech at TCI EXPO '98.
you are going to do about the citation. Let’s suppose a citation arrives in the mail detailing a violation of 1910.130 that deals with personal protective equipment. Fine: $1,000. You have a business to run, you do not have time to chase OSHA, let alone pay a high-priced lawyer to defend you. So, you are inclined to pay.

More seductive still, the government may invite you in for an informal conference to work things out. They offer to cut the fine 25 percent to 50 percent. You are tempted to write a check and go on your merry way.

You have just agreed to a conviction! The payment of an OSHA citation, whether you agree to the entire amount or a smaller fine after negotiation, is still a violation. This is vitally important because you will now be subject to a Repeat citation if you have the misfortune of a similar violation in the future. When you settle or pay off a citation to get rid of it because it is seductively cheap to do so, you are laying the basis for a future Repeat citation. A better way is to prevent the first one from becoming a violation.

Appealing citations

The first chance you have of avoiding the citation is at the informal conference. After the citation is issued, you will have an opportunity to meet with the compliance officer and the area director. This is not a hearing or a trial, but a good-faith exchange of views with an eye toward trying to remove the citation. You may be able to point something out that the officer was not sensitive to when the citation was issued. OSHA may withdraw the citation at that time.

Even if you get nowhere at the informal conference, you have learned something from it. If you feel you are being wronged or treated too harshly, you can file a Notice of Contest, which must be done within 15 working days. Do not fall into the trap of thinking that your 15 day Notice of Contest period is extended when you schedule an informal conference with OSHA. It isn’t. You must file within 15 days from the time you get the citation. You do not need a lawyer for this, since it can be a one-line letter to the area director.

“Dear Mr. Area Director,
I hereby contest citation number such and such, which was issued to my company on such and such a date.”

Filing a Notice of Contest changes the equation. It grabs that citation off of the area director’s desk and puts it in front of the attorney for the U.S. Department of Labor, who is called the Solicitor. The Solicitor has your citation, added to sev-
Several thousand cases are pending. Then, you or your attorney have the opportunity to negotiate and put your arguments before the Solicitor.

If you still get nowhere, you can ask for a hearing before an administrative law judge who works for an independent agency, not OSHA, called the Occupational Safety and Health Review Commission. The Commission hires judges who hear the evidence and issue a decision. If the judge rules against you, you can appeal to the Review Commission, which does not take every case. If you do not like their decision or they decline to take your case—and you do not mind paying a lawyer—you can appeal to the U.S. Court of Appeals.

When you exercise these rights, approximately half of all citations are thrown out.

Settlement and mounting a defense

If you choose to settle, you can offer to trade one item for another or state the violation so narrowly that it will not likely recur as a basis for a Repeat violation.

If you decide to fight, there are numerous defenses, of which the most frequently used are:

A. The wrong standard is cited.
   ♦ The employer is not covered by the standard cited. Make sure that the number is 1910. In most cases, 1926 is not applicable to you.
   ♦ The activity is not covered. By this I mean that the standard does not cover what you were doing. It may cover what others were doing on the site.
   ♦ Wrong industry is cited.

Take the issue of Cardiopulmonary Resuscitation, or CPR. If you are covered by the general industry standard 1910.151, which covers first aid, it does not say anything about CPR. There is a vigorous debate underway as to whether a first aid requirement that does not say anything about CPR obligates training in CPR. My opinion is you are not required to have CPR under 1910.151. On the other hand, line clearance tree trimming is covered by a different standard, 1910.269, which says that you must have two people on a crew trained in CPR. The logging industry standard, 1910.266, requires everybody on the crew to have CPR. The construction industry standard, 1926.50, requires one person to have CPR. Neither of these standards should apply to tree trimming. The point is, your violation may be determined not by whether the person has CPR, but under what standard they come after you. There are four specific standards that deal with CPR, each potentially yielding a different result. Review the standard.

♦ Another defense may be that you complied with the standard. Present your evidence to OSHA. They may agree with you, since they may have overlooked something.
B. Preemption by a more specific standard. A specific standard dealing with the guard over the opening of a chipper, for example, may preempt application of a more general machine guarding standard.

C. Statute of limitations. You may be guilty as sin, but if the government takes more than six months in issuing a citation, that may bar the citation—no matter how guilty you are.

D. "Unpreventable" employee misconduct. This is the most important argument, because not only does it give you a defense, it improves employee safety. Three elements are necessary for you to be able to invoke that defense:

- There must be a company rule addressing the hazard. I am not talking about a certificate with a slogan on the wall but an employer safety program that has in it, for instance, the rule that employees must wear hard hats during all tree trimming operations.
- You must show that the rule is communicated to employees and regularly reinforced through weekly tailgate sessions or in some other way.
- A history of enforcement of that rule through discipline. If you can show that employees have been written up with warnings, suspensions or discharges for violating a rule, or the safety program in general, you can show enforcement of the rule. You are only liable for that which you could have prevented.

On the other hand, if the government can show that you have safety requirements alongside a history of disregarding those requirements, you will not be able to demonstrate unpreventable employee misconduct. You can’t afford as responsible managers not to have a written safety program that you communicate and enforce. You owe no less to your employees and yourselves. Make sure everyone gets home at the end of the day, and build a defense for yourself in the process.

E. Defense to a general duty citation.

- Argue that you are being cited for something that is not general industry practice. I remember defending one general duty citation where a state OSHA program took the position that arborists had to run a metal detector over the tree to make sure that there were no hidden nails or pieces of chain link fence embedded in the tree. We showed that the industry does not regard that as a hazard and the company had no knowledge it could be a hazard.

NAA members: should you receive a complaint or a citation, do not forget the NAA hotline. They are there to help you. They will work with you through problems that you may encounter.

Steven Semler is a partner in the Washington law firm of Semler and Pritzker. He is the labor law counsel to the National Arborist Association. This article was excerpted and adapted from a lecture at TCI EXPO ’98.
Patterns of Tree Failure

By Ed Hayes

On Sunday, March 29, 1998, an F-3 class tornado ripped through St. Peter, Minn., population 9,420, devastating the community and destroying an extensive, mostly mature urban forest. This storm that hit St. Peter in the leaf-off season was one of the most severe to touch down in the state. Only 2.5 percent of all the tornados from 1950 to 1994 were class F-3.

It was estimated by the city that 8,406 trees blew down at the time the storm struck the community. Those toppled trees were removed in the first five days after the storm by an army of contractors, Department of Natural Resources crews and volunteers. On Friday, April 3, a tree inspection began to evaluate the safety and defect status of all the remaining standing trees throughout the hardest

<table>
<thead>
<tr>
<th>Defect Category</th>
<th># Trees</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Crown Damage</td>
<td>324</td>
<td>52</td>
</tr>
<tr>
<td>2. Wind Throw</td>
<td>123</td>
<td>19.9</td>
</tr>
<tr>
<td>3. Failed Unions</td>
<td>117</td>
<td>18.8</td>
</tr>
<tr>
<td>4. New Cracks with existing defects</td>
<td>13</td>
<td>2.1</td>
</tr>
<tr>
<td>5. New Cracks</td>
<td>9</td>
<td>1.4</td>
</tr>
<tr>
<td>6. Multiple Defects</td>
<td>37</td>
<td>5.9</td>
</tr>
</tbody>
</table>

Table 1. Number of trees removed by Defect Category.
When it comes to insurance, CNA looks at businesses from all perspectives. In fact, CNA has been designing customized programs for more than 25 years. We even have one that's pruned to the exact needs of the tree care industry. It's more than basic property protection, it offers coverages for underground storage tank pollution, transportation of designated pollutants, other limited pollution and pesticide/herbicide applicator.

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hit areas of the city. Ten trained DNR tree inspectors, working in pairs, inspected an estimated 3,500 trees in the following three days. A total of 1,083 trees were storm damaged, 623 were marked for removal, and 460 were saved and marked for pruning.

Criteria used for tree removal were based on the Minnesota DNR’s Risk Assessment Guidelines for Hazard Trees, (revised in Tree Care Industry magazine in April 1997).

Five criteria for defect assessment were given to inspectors. They were instructed to record the reason for all tree removal and estimate the tree size in dbh, (diameter at breast height). Trees with more than one defect category were recorded as multiple defects. All standing trees were inspected on both public and private property. On private property attempts were made to contact the homeowner for input.

The six failure categories (See Table 1) used for tree removal decisions were:

1. Wind-throw: Leaning trees with evidence of recent root lifting or soil movement.

2. Crown Damage: If greater than one-third of the crown was damaged, removal should be considered. If greater than one-half of the crown was damaged, the tree should be removed. Tree removal is preferred over severe pruning or topping for cultural reasons, aesthetics, long-term maintenance requirements and future safety.

3. Main Stem Failure: Failed, weak unions resulting in compromise of one-half or more of the stem circumference.

4. Main Stem Failure: New cracks associated with an existing defect that would otherwise have been considered less than threshold level (moderate risk potential) defects. These are decay columns, or canker and decay defects, with new cracks that affect one-third to one-half of the stem circumference.

5. Main Stem Failure: New cracks that compromise up to or greater than one-half the stem circumference.

6. Multiple Defects: If more than one of the above contributed to tree failure, the multiple defect category was used.

Patterns Of Failure

Crown damage: The most common mode of failure was crown damage, accounting for 52 percent of all trees removed. Significant crown damage occurred in the maples, elms, green ash, black walnut, locusts, black willow, and some conifers. A clear pattern emerged for branch breakage. Generally, trees greater than 16 inches that resisted wind-throw began to shed branches. Among the hardwoods,
boxelder sustained the highest amount of crown damage (68%). No surprise here, since the species is well known for significant branch breakage.

Among conifers, white pine sustained the highest amount of crown damage. There were only seven records on white pine, and all sustained crown damage. However, it is apparent that white pines shed branches rather than suffered wind-throw. For spruce species, this cutoff was 14 inches. Spruce at 14 inches and greater that resisted wind-throw shed their crowns.

**Wind-throw:** For the remaining storm-damaged trees, both hardwood and conifer, wind-throw was most common in trees up to 14 inches in diameter. Trees 14 inches and less failed as a result of wind-throw rather than shedding their branches. Wind-throw in conifers was much higher, which is not surprising since this was a leaf-off storm. In conifers with crown sails (foliage), wind-throw was 60 percent for spruce and cedars, and 80 percent for red pine. Spruce up to 14 inches failed primarily by wind-throw. Balsam fir were more resistant to wind-throw, with 36 percent suffering damage, as 64 percent experienced stem failure. In hardwoods, wind-throw was also most common in trees up to 14 inches diameter.

**Included bark/weak unions:** The most common pre-existing “defect” on these remaining standing trees that led to main stem failure was weak branch unions. Main stem failures originating from weak unions accounted for 18.8 percent of removals. Main stem failures resulting from pre-existing, non-threshold level defects with new cracks accounted for only 2.1 percent. These were existing decay columns and canker faces.

Overall, 20 percent of the maple species—sugar, silver and Norway—sustained main stem failures originating at the sites of weak unions. Additionally, weak union failures occurred in green ash, black walnut, boxelder, black willow, and an unusually high amount (43%) in hackberry.

In silver maple, most of the weak unions were shed or failed by the time the species reaches 20 inches in diameter. By contrast, weak unions in sugar maple continued to fail up through the 20-inch classes to the 30-inch diameter class. Weak unions in sugar maple were retained into larger diameter classes than for silver maple. These patterns support what we generally see for these two species.

**Multiple defects:** The only pattern that emerged for Norway maple confirms observations usually associated with the tree. Norway maple had the highest number of trees removed for this category, due to cracks associated with pre-existing wounds and decay columns. Norway maple are not well acclimated to the climate of this region, and it shows.

### Table 2. Percent Of Trees Removed By Failure Category.

<table>
<thead>
<tr>
<th>Species</th>
<th>Percent of Species Removed By Failure Category</th>
<th>Crown Damage</th>
<th>Wind-throw</th>
<th>Main Stem Failures</th>
<th>Multiple</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Unions</td>
<td>Defects</td>
</tr>
<tr>
<td>Ash, Green</td>
<td>53</td>
<td>27</td>
<td>20</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Basswood</td>
<td>36</td>
<td>50</td>
<td>7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Boxelder</td>
<td>68</td>
<td>9</td>
<td>9</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Cedar, Red &amp; White</td>
<td>40</td>
<td>60</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Elm Sp</td>
<td>70</td>
<td>10</td>
<td>11</td>
<td>0</td>
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<td>Fir, Balsam</td>
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</tr>
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<td>Hackberry</td>
<td>18</td>
<td>21</td>
<td>43</td>
<td>4</td>
<td>7</td>
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<td>Locust Sp.</td>
<td>33</td>
<td>17</td>
<td>42</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Maple, Norway</td>
<td>33</td>
<td>0</td>
<td>19</td>
<td>19</td>
<td>5</td>
</tr>
<tr>
<td>Maple, Silver</td>
<td>59</td>
<td>7</td>
<td>20</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Maple, Sugar</td>
<td>54</td>
<td>6</td>
<td>21</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Pine, Red</td>
<td>19</td>
<td>81</td>
<td>18</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pine, White</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Spruce Sp</td>
<td>38</td>
<td>60</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Walnut, Black</td>
<td>60</td>
<td>18</td>
<td>13</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Willow, Black</td>
<td>57</td>
<td>28</td>
<td>14</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Lessons in wind-throw.

Few structures, let alone trees, survive the force of an F-3 class tornado, which has wind speeds of 158-206 mph. F-3 class is defined in the Fujita scale as causing “roof and some walls torn off well-constructed houses; trains overturned; most trees in forests uprooted.” In such a storm’s main path, both massive wind-throw and the domino effect likely combine to level trees or stands of trees.

Even at wind speeds of 50 to 60 mph, the force can result in wind-throw, exceeding the threshold of failure for even structurally sound trees. This threshold is described by Claus Mattheck as the tree’s biological safety factor.

The biological safety factor for structurally sound trees is about 4.5 multiplied by the tree’s service load. The service load is the tree’s above-ground mass, which is its weight multiplied by the acceleration of gravity. For trees without defects and with full crowns, this normal load can be increased by a factor of 4.5 before the tree fails. Since the tree is a chain of links of equal strengths, the safety factor applies from the branches through the stem and through the root plate and into the ground.

To resist wind-throw, a tree needs to have a well-developed circular root plate. Trees with only 60 percent of this requirement are at threshold for wind-throw.

### Table 3. Number Of Trees Removed by Percent and Size.

<table>
<thead>
<tr>
<th>Species</th>
<th># Trees</th>
<th>%</th>
<th>Av. Size-dbh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ash, Green</td>
<td>51</td>
<td>8.1</td>
<td>15.6</td>
</tr>
<tr>
<td>Basswood</td>
<td>14</td>
<td>2.2</td>
<td>15.8</td>
</tr>
<tr>
<td>Boxelder</td>
<td>34</td>
<td>5.4</td>
<td>14.6</td>
</tr>
<tr>
<td>Cedar, Red &amp; White</td>
<td>16</td>
<td>2.5</td>
<td>12.2</td>
</tr>
<tr>
<td>Elm Sp.</td>
<td>63</td>
<td>10.1</td>
<td>19.5</td>
</tr>
<tr>
<td>Fir, Balsam</td>
<td>11</td>
<td>1.7</td>
<td>8.0</td>
</tr>
<tr>
<td>Hackberry</td>
<td>33</td>
<td>5.3</td>
<td>17.8</td>
</tr>
<tr>
<td>Locust Sp.</td>
<td>33</td>
<td>5.3</td>
<td>13.7</td>
</tr>
<tr>
<td>Maple Sp.</td>
<td>208</td>
<td>33.4</td>
<td>19.5</td>
</tr>
<tr>
<td>Maple, Norway</td>
<td>21</td>
<td>3.3</td>
<td>10.8</td>
</tr>
<tr>
<td>Maple, Silver</td>
<td>66*</td>
<td>-</td>
<td>18.8</td>
</tr>
<tr>
<td>Maple, Sugar</td>
<td>68*</td>
<td>-</td>
<td>21.5</td>
</tr>
<tr>
<td>Pine, Red</td>
<td>11</td>
<td>1.7</td>
<td>11.2</td>
</tr>
<tr>
<td>Pine, White</td>
<td>7</td>
<td>1.1</td>
<td>16.5</td>
</tr>
<tr>
<td>Spruce Sp.</td>
<td>42</td>
<td>6.7</td>
<td>10.5</td>
</tr>
<tr>
<td>Walnut, Black</td>
<td>35</td>
<td>5.6</td>
<td>18.8</td>
</tr>
<tr>
<td>Willow, Black</td>
<td>7</td>
<td>1.1</td>
<td>23.1</td>
</tr>
<tr>
<td>Other, 10 species</td>
<td>37</td>
<td>5.9</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>623</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
cies. Trees 16 inches and greater that branch breakage, whereas trees 14 inches resisted wind-throw experienced more allure. 

These thresholds at work in the patterns these trees that were still upright, we see one's life.” All depending, of course, on how much it costs.

In this sample of storm-damaged trees that were still upright, we see these thresholds at work in the patterns of failure.

The cutoff between wind-throw and branch breakage was generally 14 to 16 inches in diameter for most hardwood species. Trees 16 inches and greater that resisted wind-throw experienced more branch breakage, whereas trees 14 inches and less experienced more wind-throw than branch breakage. Larger trees would rather shed their branches than wind-throw—up to a point. If the load exceeds the safety factor of the root plate, the tree fails by wind-throw, no matter the size. For larger diameter trees, an adequate root plate to resist wind-throw need only be as much as three times the stem radius. For small diameter trees, the root plate would need to be as much as 15 times the stem radius.

The reason for this is easy to discern. As you increase weight, you increase the friction between the root plate and the surrounding soil, decreasing the need for a larger root plate. However, even in true wind-throw, it is the soil that fails first, not the tree roots. This is why we often see wind-throw in broad-leaf trees in the spring, following foliage development, and in wet soils. Wet soils have less cohesion and the “slippage” is dramatically higher, sort of like slipping on wet pavement after a spring shower.

The most common pre-existing condition predisposing trees in high-use urban areas to wind-throw is restricted root zones. Trees without adequately developed circular root plates, or with asymmetrical root plates, or with disturbed root systems, are predisposed to wind-throw.

In a practical sense, it is difficult to apply the Mattheck wind-throw model, and it can only be applied to trees with circular root plates. However, it may be another risk assessment tool for use by arborists interested in evaluating trees for defect. At any rate, it provides us with interesting insights into tree failure by wind-throw.

<table>
<thead>
<tr>
<th>Species</th>
<th>% Crown Damage</th>
<th>Sizedbh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ash, Green</td>
<td>53</td>
<td>16&quot;</td>
</tr>
<tr>
<td>Basswood</td>
<td>50</td>
<td>16&quot;</td>
</tr>
<tr>
<td>Boxelder</td>
<td>68</td>
<td>10&quot;</td>
</tr>
<tr>
<td>Elm Sp.</td>
<td>70</td>
<td>16&quot;</td>
</tr>
<tr>
<td>Fir, Balsam</td>
<td>64</td>
<td>&gt;10&quot;</td>
</tr>
<tr>
<td>Maple, Silver</td>
<td>59</td>
<td>16&quot;</td>
</tr>
<tr>
<td>Maple, Sugar</td>
<td>54</td>
<td>16&quot;</td>
</tr>
<tr>
<td>Pine, White</td>
<td>100</td>
<td>8&quot;</td>
</tr>
<tr>
<td>Willow, Black</td>
<td>57</td>
<td>16&quot;</td>
</tr>
</tbody>
</table>

Table 4. Percent of Crown Damage and Tree Size, When Significant Branch Breakage Began to Occur.

Suggested Reading


Table 5. Number of Trees Saved by Pruning, Percent and Size.

<table>
<thead>
<tr>
<th>Species</th>
<th># Trees</th>
<th>%</th>
<th>Av. Size-dbh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ash, Green</td>
<td>46</td>
<td>10</td>
<td>14.2</td>
</tr>
<tr>
<td>Basswood</td>
<td>14</td>
<td>3.0</td>
<td>14.8</td>
</tr>
<tr>
<td>Elm Sp.</td>
<td>23</td>
<td>5.0</td>
<td>17.0</td>
</tr>
<tr>
<td>Hackberry</td>
<td>22</td>
<td>4.7</td>
<td>15.7</td>
</tr>
<tr>
<td>Locust, Honey</td>
<td>43</td>
<td>9.3</td>
<td>11.6</td>
</tr>
<tr>
<td>Maple, Norway</td>
<td>43</td>
<td>9.3</td>
<td>12.9</td>
</tr>
<tr>
<td>Maple Sp. (Silver &amp; Sugar)</td>
<td>158</td>
<td>34.3</td>
<td>19.5</td>
</tr>
<tr>
<td>Walnut, Black</td>
<td>42</td>
<td>9.1</td>
<td>18.1</td>
</tr>
<tr>
<td>Other (&gt; dozen species)</td>
<td>69</td>
<td>17.6</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>460</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

The 16-inch rule

Sixteen inches should not necessarily be thought of as a diameter limit for tree replacement in urban forests. However, it points out the need not only for species diversity but also for size diversity. Size is an important component of age-class diversity.

A parting warning on white pine. Do not mix high-value targets with large white pines. Give them plenty of room. White pine branches can be easily shed during storm events.

Summary

Of the 1,083 storm-damaged, still-standing trees surveyed in St. Peter following the March 29, 1998 tornado, 623 or (57.5%) were recommended for removal and 460 or (42.5%) were salvaged by recommending pruning and or removing lodged and hanging branches.

Crown damage (branch breakage/branch shedding) accounted for 52 percent of the trees removed. Wind-throw (leaning trees with disrupted root systems) accounted for nearly 20 percent of the trees removed. Main stem failures (types 3, 4 & 5 in Table 1), where more than one half of the stem circumference was compromised, accounted for another 22 percent of trees removed, failed unions accounting for the highest. And finally, another 6 percent (multiple defects) were removed by combinations of the above failure signatures.

In addition to the 460 trees summarized in Table V, it is estimated that another 1800 trees located on both boulevards and private land survived. Their average size is estimated to be 9 to 10 inches in diameter.

Ed Hayes is a Forest Health Specialist for the Minnesota DNR, Division of Forestry. He is a speaker and does training sessions on how to detect tree hazards. His address is 2300 Silver Creek Road NE, Rochester, Minnesota, 55906, or ed.hayes@dnr.state.mn.us

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PRODUCT BULLETIN NO. 123

ASPLUNDH MANUFACTURED AERIAL DEVICES

FAILURE TO FOLLOW MANDATORY ITEMS CAN RESULT IN SERIOUS INJURY OR DEATH

This is a summary of Asplundh Product Bulletin No. 123 for publication only. If you are a dealer, owner, user or operator of an Asplundh aerial device, and have not received a certified mailing of the entire bulletin dated March 5, 1999, it is imperative that you contact the Asplundh Unit Identification Program immediately to obtain a copy of the full bulletin package at:
1-800-264-4564 or fax at 1-804-534-9686

MODELS AFFECTED:

All Models of Asplundh Manufactured Aerial Lifts
(Except as Otherwise Specifically Noted)

3. HYDRAULIC CYLINDER MAINTENANCE INSPECTION

4. UNIT OWNER IDENTIFICATION PROGRAM

5. DECALS, BULLETINS AND UPDATED MANUALS

In May of 1992 Asplundh Tree Expert Co. sold its manufacturing facilities and engineering designs and discontinued operations as a manufacturer of aerial devices and brush chippers. Although Asplundh is no longer in the business of manufacturing, we are publishing this bulletin summary to convey important information to Dealers, Owners, Renters and Operators of Asplundh Manufactured Aerial Lifts who may not be on our list of unit owners and would not have received a certified mailing.

The Summary Bulletin points are:

MANDATORY RETIREMENT AND MANDATORY REBUILD

DANGER!: Many of the early models of Asplundh aerial devices are well over 25 years of age and have exceeded a reasonable safe and useful life and either should be destroyed or otherwise rendered inoperative. These units can no longer be supported with factory parts, manuals or other services. ALL UNITS BUILT PRIOR TO 1975 SHOULD BE REMOVED FROM SERVICE IMMEDIATELY. The age of a unit is determined from the first two digits of serial number and not by the age of the chassis.

In addition to the other specific recommendations that follow, all units must be completely rebuilt at 15 years of age or less or be removed from service. This must include a thorough inspection and overhaul performed by trained and qualified aerial lift mechanics using factory replacement parts. Currently, factory replacement parts are available from Altec Industries, Inc. This requirement is in addition to any manufacturer’s recommendation for interim periodic inspections, maintenance, rebuilding or replacement of components. All units requiring mandatory rebuilds must be rebuilt within 12 months of the date of this bulletin.

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MANDATORY CABLE INSPECTION AND REPLACEMENT

DANGER!: ALL UPPER BOOM OPERATING CABLES MUST BE REPLACED EVERY TWO YEARS.

All upper boom operating cables must be replaced every two years. Our findings reveal that cable failures have been consistent with general overloading and abuse as well as failure to properly inspect and replace the cables according to recommended procedures. Although no one can guarantee that installing new cables every two years will eliminate all failures, we firmly believe that the incidence of failures will be greatly reduced. Two year replacement will not eliminate the need for regular interim inspections for wire breakage in accordance with the owner’s manual, operating instructions and all prior bulletins.

WARNING!: All units requiring cable replacement must have the cables replaced within 90 days of the date of this bulletin, provided that a daily visual inspection of the cables is done between the date of this bulletin and the date of replacement, in accordance with the manual. Should any wire breaks be noted during the inspection, the unit must be taken out of service immediately.

Whenever cables are replaced, careful inspection must also be given to the outer pivot sheave for dimensional integrity, condition of the grooves, tread diameter and finish as well as alignment with the operating cylinders. All discrepancies due to wear or damage must be corrected. Practices that cause premature failures such as overloading and lack of maintenance must be avoided.

HYDRAULIC CYLINDER MAINTENANCE AND INSPECTION

DANGER!: FAILURE TO PROPERLY INSPECT, MAINTAIN, REPAIR OR REPLACE CYLINDERS CAN RESULT IN SERIOUS INJURY OR DEATH.

The hydraulic cylinder is a critical structural component of the aerial device which must be properly inspected and maintained to avoid catastrophic failure and free fall of the boom. It is imperative that appropriate periodic inspection in accordance with the owner's and maintenance manuals be accomplished and that any necessary or recommended maintenance, repair, rebuilding or replacement be done. FAILURE TO PROPERLY INSPECT, MAINTAIN, REPAIR OR REPLACE CYLINDERS CAN RESULT IN SERIOUS INJURY OR DEATH.

DANGER! Any time a hydraulic cylinder is drained, removed and repaired or replaced, it must be refilled with hydraulic oil and tested by cycling the booms from the lower controls to fill the cylinders with hydraulic fluid. The upper boom must be cycled by raising and lowering the boom three cycles through 45 degrees of travel off the boom rest to insure filling the top cylinder of the boom. If an aerial device is operated with an uncharged or improperly charged cylinder DEATH OR SERIOUS INJURY will result from a free fall of the booms.

OWNERSHIP RECORDS

Many of the older units have been difficult to locate because they have been retired or sold by the original owner. If a unit has been sold, we must identify the current owners in order to pass on critical information regarding updated manuals, warnings, service and product bulletins and new repair and maintenance advisories as they become available.

If you have not received an owner's certified mailing, we do not have you listed as a current owner. Please contact the Asplundh Unit Identification Program by mail at 12580 E. Lynchburg Salem Turnpike, Forest, Virginia 24551-9725, or by phone at 1-800-264-4564 or fax number 1-804-534-9686. They will take your name and the serial number of the unit for our records and provide you with a copy of the owner's bulletin package at a nominal cost. The correct Lift Model Number and Serial Number is located on the equipment nameplate, which is customarily mounted on the turntable.

It is of vital importance that current owners receive this bulletin and all future safety related information.

MANUALS, WARNING DECALS AND BULLETINS

It is imperative that every owner and operator have available the appropriate Owners Manual, Operators Manual, Parts & Maintenance Manuals and a complete set of Maintenance, Engineering and Product Bulletins applicable to the units being operated. These may be ordered by contacting the Asplundh Unit Identification Program at the phone and fax numbers given in the preceding section and you will be provided with an order form to obtain the packages appropriate to your unit. Please have the serial number of your unit available when you call.

ASSISTANCE

It is our desire to locate all Asplundh manufactured aerial devices that are still in use and to share the above information in the interest of safe operation of these units. Please review this information and respond by calling or faxing us at the above numbers.

If you have any questions concerning any of the issues contained in this bulletin, please call the Asplundh Unit Identification Program at 1-800-264-4564 or fax at 1-804-534-9686.

ASPLUNDH UNIT IDENTIFICATION PROGRAM

For a complete transcript of this text, please visit our website at http://web.asplundh.com/bulletin

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Will the Ends Justify the Means?

Ergonomics Standard barreling forward

Two of the Occupational Safety & Health Administration’s highest priorities in 1999 are its proposed Ergonomics Standard and a workplace safety and health program rule. Will these proposed regulations help the employer to challenge and overcome worker safety issues, or will they distract the employer from addressing issues head-on in the workplace? That’s the big question any time a regulatory agency proposes something, but it has never been more relevant than with these two issues and their potential impact on employers.

Secretary of Labor Charles Jeffress says the Ergonomics Standard will move forward despite new pressure to wait for a congressionally-funded National Academy of Sciences study that will report on the best evidence with regard to the nature, causes and prevention of so-called ergonomics injuries.

In November, Jeffress stated that the $890,000 NAS study was not designed to prevent or delay the Agency’s work on the standard. According to Jeffress, the question of whether OSHA could proceed on its ergonomics standard before the study was completed had been carefully considered and extensively discussed. He claims OSHA will give careful attention to the NAS study when it is complete. OSHA plans to formally issue a proposed rule in 1999, but a final version is likely to take several years to complete.

The NAS study aside, safety professionals in the tree care industry don’t see that the proposed standard contributes any information or procedure for preventing musculo-skeletal injuries or disorders that is materially better than what is available to employers right now. Furthermore, the OSHA draft is silent, and therefore unclear, on how to determine if an injury or disorder is work-related. Since the proposal makes the employer financially responsible for the worker incapacitated by such an injury, it would seem reasonable to be able to demonstrate that the injury was indeed attributable to working.

Readers with Internet access may review and even download the proposed standard at OSHA’s Website, http://www.osha.gov.

Safety and health program rule

A draft version of a proposed OSHA rule, released in November 1998, would require employers to establish workplace safety and health programs to ensure compliance with OSHA standards, as well as the general duty clause of the Occupational Safety and Health Act.

OSHA is confident a safety and health program rule will benefit employers and their workers, but employers are skeptical that a federal regulatory agency can use a one-size-fits-all approach to prescribe and regulate how the employer creates a safe workplace. The agency is pursuing a regulation rather than a standard for the safety and health program, but it will be held to the same legal test that standards meet, according to OSHA official Marthe Kent.

OSHA’s safety and health program regulation would require employers to develop comprehensive safety programs for their work sites, identify workplace safety hazards, provide information and training to workers, and implement safety controls.

Employers are unhappy because the draft is so broadly written that any inspector could disagree with how an employer implements a program, serving as the basis for a citation and fine. Employers are concerned that even if they fight a citation and win, they will still have spent a lot of money in litigation. Employers don’t trust OSHA with that kind of broad discretion.

In addition, the agency’s approach to the rule seems to open the door for OSHA to avoid the usual rule-making process to regulate hazards, making employers responsible for identifying hazards that OSHA may not have identified.

An industry coalition led by the U.S. Chamber of Commerce encourages the development of workplace safety programs, but believes that each business needs a specifically tailored program unique to its industry. They don’t feel that it was what Congress had in mind when it passed the OSHAct. Most tree care employers would undoubtedly agree.

Peter Gerstenberger is director of safety & education for the National Arborist Association.

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1989 LT8000 Narrow Cab SteelHauler. Haul long logs from front to rear, 6 x 6 all-wheel drive, 7-8 diesel. Auto. 37k miles with 6.5 ton IMT Crane. 44,500.

1993 Ford F800, 5.9 diesel 6sp/ 2sp, 33 GVW, 49,000 miles with 14-ton RO Crane, Model L663. 73' hook height. $51,900.

1984 GMC 8.2 Diesel, auto a/b w/52 Hi-Ranger Bucket. $24,500.

'96 GMC Topkick 3116 CAT 6sp, 33,000 GVW, air brakes with 17-ton Manitex. 118' Hook Height. Super Clean. $76,500.

(3) 1994-95 Ford F800s; Cummins 6 Sp; A/B; 33,000 GVW w/15-ton JLG Cranes; 60' Hook Height. Call for info.

87 Ford F800 4x4; 7.8 Dsl; auto; 33k GVW; 14' Dump Body; Front Bumper & Rear Bed Winches; 31k Orig. Miles. Very Clean $29,500.


'82 Ford F700, V8, 5sp/2sp with 50' Altec double bucket $18,900.

1988 GMC; 8.2 Diesel: Auto; Chip Body w/Aerial Lift of CT 50-foot bucket. $37,500.

89 Ford F800 Crew Cab; 7.8 Dsl; Auto; 35k miles; Dump Body $19,500.

(4) Other Crew Cab Stakes in Stock!

(5) Fuel Trucks, Steel or Alum. Gas or Diesel $4,900 and Up

Prentice 120-yard machine. Diesel Pony engine, on gas Int'l. $12,500.

(3) HIAB; IMTCO; National; Etc; Knucklebooms Unmounted Or Mounted $4,500 And Up

1986 GMC Topkick, 3208 Cat. 5 spd, A/B, w/ 8-1/2 ton Pitman Crane, 47' Hook Height. $16,500.

'87 GM7 GMC, 8.2 Dsl. 6 sp, 30 GVW, A/B, 12' Stake Lift Gate. 22k miles. IMT Knuckle-boom, 25' Side Reach. $22,500.

(10) 32' to 42' Bucket Trucks; Gas & Diesel. Call for Sale Price

(10) Chip Body Dumps in Stock; Call For Prices & Descriptions

(30) 1 Ton Buckets; 28' to 36' In Stock Call For Price List

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A successful tree care company, like any other growing and dynamic business, must have talented people. To fill that need, there must be an effective recruiting plan that is implemented consistently, not just when a need is apparent.

An intelligent individual would not begin a large landscaping job without a plan, yet many companies go about the most critical task of acquiring the human capital for their growth and continued success in a haphazard manner without a clearly defined recruiting plan. As a result, these organizations, especially in low unemployment areas, tend to have an inadequate flow of candidates to ensure adequate candidate quality and fill key positions. This is especially true of companies that have seasonal needs.

If, for example, responsibilities in the hiring process are not clear, an important task—such as background checks or checking references—may be left undone. A sharp person may even slip through your fingers and be hired by a competitor because you're not actively looking when the individual contacts you.

A systematic approach to staffing will help to resolve these problems and provide the best opportunity to hire people who match the job and have the greatest chance of success. With the shortage of good candidates and high turnover in the green industry, it is in a company's interest to do the best job possible in recruiting.

Hiring targets

The first element of an effective recruiting plan is to establish hiring targets, which are detailed projections or estimates of future hiring needs for each position and location. They are arrived at by first identifying the specific positions where turnover is expected during the year. Based on past history and performance of current individuals, estimates can be made of the number that will need to be replaced during the year in each position.

Next, look at the additional positions to be added because of growth or promotions. Remember, some positions may have to be filled more than once during the year. Third, identify the number you will have to hire in each position and location to ensure that the organization is fully staffed. Based on feedback at seminars organized by the Outlaw Group, most companies do not become overstaffed, but fail to continuously recruit to ensure they are fully staffed. A company can always increase its performance by adding a top performer.

Once specific targets by position and location are established, determine the level of qualified candidate flow required to meet those targets. By reviewing recruiting history for a position, the average number of candidates needed to fill one vacancy can be determined. You can use this to determine the number of applicants needed to fill one job, and in turn, the total applicant flow required. It is very easy for an owner or manager to underestimate the need for candidates because they tend to remember only the candidates that are selected for final consideration.

Sources of staff

To begin the recruiting plan, identify sources of current and past staff members. Select the sources that have produced positive results on which to concentrate your efforts. Because of the intense competition for top people, it will
be necessary for you to develop creative sources. In today’s employment environment, you cannot simply run an ad and hope you will get the quality and quantity needed.

Many hiring mistakes can be eliminated by first clearly defining the job. This must be done before determining the hiring criteria for each position, such as education, physical capability, skills, experience and values. Unfortunately, some companies hire a person and then adapt the job to fit the person’s skills. Once the job is defined, determine which of the hiring criteria are “Musts” and which are “Preferreds.” Musts are those qualifications a person must have to be a candidate. Preferreds are the other criteria that you would like the candidate to have.

Assigning responsibility

Lastly, decide who will be responsible for each specific part of the recruiting plan. Most organizations exercise too little or too much control in the hiring process. Those responsible for the performance of the person hired should have a say in who is hired while upper management ensures quality and consistency.

If hiring is delegated to first-line managers, they have a vested interest in the success of those they hire, but the quality of hire may vary. First-line managers may not have the skills or experience to be effective. Often, good candidates may be missed because managers are looking only at their hiring needs or may even feel threatened by a top-quality candidate.

If hiring is handled centrally, the organization tends to do a better job of uniform candidate quality, but it tends to be slow and cumbersome. The best candidates may be lost because they tend to get other offers more quickly.

The first-line manager should be involved in hiring to speed the process and obtain commitment to the candidate’s success. Central control can be exercised to ensure uniformity, quality and adherence to legal requirements.

A well-developed recruiting plan will allow a tree care company to search constantly for high performing individuals with minimum effort. After the recruiting plan has been established, its effectiveness and candidate flow should be evaluated periodically to ensure it will support future hiring needs.

A tree care company depends on an ample supply of top-performing employees to meet customer needs. Acquiring this human capital is everyone’s responsibility.

Wayne Outlaw is author of Smart Staffing: How to Hire, Reward, and Keep Top Employees for Your Growing Company. In it, he presents solutions to the specific challenges listed above. Outlaw speaks and consults to help organizations increase their results through employee performance. He can be reached at 800-347-9361 or www.smartstaffing.net

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Firewood Processing Equipment

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<th>LOG SPLITTERS</th>
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<td>3-Point Tractor-Mount PTO - Powered Models</td>
<td>FROM $2,845</td>
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<td>FROM $1,465</td>
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<td>MID-SIZED PROFESSIONAL MODELS</td>
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<td>LARGE PROFESSIONAL MODELS</td>
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Lanesboro, MN
Contact: Tim Walsh (715) 346-4211

April 10, 1999
Washington State Historical Society
Celebrating Washington's Trees
State History Museum
Tacoma, WA
Contact: (253) 798-5879

April 10-13, 1999
Southern Chapter - ISA
Annual Conference and Trade Show
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April 24, 1999
MAC-ISA Tree Climbing Competition
Druid Hill Park
Baltimore, MD
Contact: Nancy Herwig (703) 753-0499

April 28 - May 2, 1999
Western Chapter - ISA
Annual Conference and Trade Show
Mandalay Beach Resort
Oxnard, CA
Contact: 916-641-2990

May 2-4, 1999
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Roanoke Marriot
Roanoke, VA
Contact: (804) 798-0045

May 10, 1999
MCFC Symposium:
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Wyndham Garden Hotel
Annapolis, MD
Contact: Mike Grant (410) 260-8595

June 13-15, 1999
ISA Florida Chapter
Westin Innisbrook Resort
Palm Harbor, FL
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July 1 - 3, 1999
American Association of Botanical Gardens and Arboretum
Annual Conference
British Columbia
Contact: Dorothy 610-925-2500 ext. 11

July 23 - 25, 1999
ALCA Masters in Management
Hilton Chicago O’Hare Airport
Chicago, IL
Contact: 703-736-9666

August 1 - 4, 1999
International Society of Arboriculture
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Stamford, CT
Contact: Lisa Thompson at 217-355-9411

August 31 - September 3, 1999
National Urban Forest Conference:
Building Cities of Green
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Contact: Cheryl Kollin (202) 955-4500

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American Society of Landscape Architects
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Boston, MA
Contact: (202) 216-2336

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1999 Annual Conference
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New Executive Vice President
Cynthia Mills, CAE, introduces herself to the membership at the Welcome Breakfast.

Business of Tree Care
in Cancun

The NAA’s Winter Management Conference in Cancun, which was held on Jan. 26-31, 1999, was a success from every perspective. A full slate of informative talks gave attendees valuable advice on running a tree care business. Adventurous water tours and intriguing visits to Mayan historical sites added an exciting side to the main focus of the conference—running a profitable tree care company.

Winter Management Conference always allows ample opportunity for attendees to network and discuss common concerns involved in managing a tree care business. Cancun provided an exotic flavor, making it the perfect getaway for everyone.

Winter Management Conference 2000 will be held on Feb. 15-20, 2000 at the breathtaking Southampton Princess in Bermuda. For more information, contact Carol Crossland at 603-673-3311.

In addition to tours, business meetings, and educational sessions, Winter Management Conference offers ample opportunity for networking. Company owners share strategies and successes in a relaxed setting.

Chris Nichols, product manager of Tree Products, Vermeer Manufacturing Co., presents Lauren Lanphear, president of Forest City Protection Company with a certificate representing an all-expense-paid, three-day trip to Pella, Iowa.

Jim Osborne, vice president of Industrial Engines for Cummins Michigan, Inc., congratulates Ron Cook of County Tree Preservation for winning one of the five discount vouchers, each worth $1,000 toward the purchase of a Cummins-powered chipper.
A visit to the ancient Mayan ruins at Tulum was among more than half a dozen exciting and educational tours as part of the conference.


Outgoing president Paul Wolfe (l.) transfers the gavel to John R. Wright.

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TREE CARE INDUSTRY - APRIL 1999
Melding Students With Arboriculture at TCI EXPO '98 Career Days

Terry Krafcik shows Lynn Schenkenberger from Milwaukee Area Technical College how to install a Preformed Line Tree-Grip dead-end.

Josh Tankersly from Arbor Care monitors student competitors in the work climb event.

ArborMaster Training, Inc.
Drawing Industry and Education Closer

In addition to the extensive training that Ken Palmer and Rip Tompkins of ArborMaster Training conduct throughout the world every year, they have also become arboriculture ambassadors, educating young people about the tree care industry.

In 1998, Palmer and Tompkins launched a pilot collegiate training program, sponsored by Husqvarna Forest & Garden Co., which included four colleges—University of Wisconsin, Stevens Point; Western Illinois University; Northeast Iowa Community College; and University of Minnesota—each with members of the Student Society of Arboriculture.

“The ArborMaster Collegiate Training program is designed to enhance existing curriculum as well as encourage students toward a career in the field of Arboriculture,” says Palmer.

ArborMaster Training conducted four-day training sessions at each school, including safe and efficient climbing techniques as well as safe use of a chain saw. Participants from each school will be invited to compete for top honors and arborist equipment at the 3rd Annual Student Society of Arboriculture Conference and Job Fair in Lanesboro, Minn., April 9-11, 1999.

“In order to make an even greater impact in 1999, we are focusing our efforts on training instructors,” explains Tompkins. “We hope to assist them by introducing the latest equipment and most current field practices which will, in turn, better prepare the next generation of arborists when they enter the workforce.”

In addition to the collegiate programs, Palmer and Tompkins share information about the arboriculture profession with high school students in the New England area, which is considered home base when they are not on the road.

Educators interested in attending the free training program this summer can call ArborMaster Training at 860-429-5028.
The NAA Student Career Days was sponsored by Arbor Care, Davey Tree Experts, Bartlett Tree Expert Company, SavATree, Treemasters, ArborMaster Training, and Bandit Industries. Additional support and assistance was provided by Preformed Line Products, Sierra Moreno Mercantile Company, Bishop Company, and Student Society of Arboriculture.

Dane Buell of Arbor Care took the lead in organizing the Arboricultural Skills competition, while Ken Palmer and Rip Tompkins of ArborMaster Training provided technical assistance, put on a climbing workshop for students, and managed the climbing segment.

The idea for an NAA Student Career Days was conceived three years ago as a way to bring together students of arboriculture, urban forestry, ornamental horticulture, and tree trimming technology with professionals from the tree care industry. Since then the event has grown and last year the Arboricultural Skills competition was added.

Student attendees were invited to TCI EXPO '98 as part of NAA Student Career Days, where they were welcome to attend all educational seminars for free. Bands of enthusiastic students roamed the floor of TCI EXPO, asking questions and trying out equipment. Many of the exhibitors commented on how refreshing it was to see young, bright faces and how they enjoyed talking to students who were excited about arboriculture.

What most of the exhibitors did not get a chance to see was the impressive skills competition and workshop on that Saturday at the Baltimore Zoo.

The students were hosted by Henry Bell, the Baltimore Zoo's staff arborist. Bell was the "behind-the-scenes guy" who gave invaluable assistance in planning the day's event. He gave a very informative walking tour of the zoo, discussing the intricacies of managing trees in an area that contain large and small animals of all types and behaviors, experience frequent new construction, and suffers from constant pedestrian traffic. One fascinating aspect of the tour was Bell's ability to contrast real examples between trees that were neglected (before the zoo established a tree care program) and trees that were managed properly (once sound tree care practices were established).

The competition started Friday afternoon with a written exam facilitated by Arbor Care and a safety equipment inspection test organized and facili-
tated by Joe Bones of Bartlett Tree Expert Company.

Many professionals from the tree care industry worked together to ensure the success of the Arboricultural Skills competition. A local Davey Tree Expert crew provided a crown cleaning to prepare the competition trees. Ken Palmer and Rip Tompkins of ArborMaster Training worked with Dane Buell to set up two challenging tree climbing courses, one in a medium-sized white oak and another in a large, mature red oak. Arbor Care

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List of Career Events and Employment Resources

- NAA Student Career Days ‘99 at TCI-EXPO ’99, featuring Arboricultural Skills Competition and Job Fair, in Indianapolis, Nov. 4-6th:
Call Bob Rouse at 800-733-2622, ext. 117, or e-mail: rjr@jlc.net.

- The 4th Annual SSA Conference and Job Fair.
The conference hosts the North American Professional ArborMaster Skills Competition and will be held in Steven’s Point, WI., on September 24-27, 1999.
Call Tim Walsh at 715-346-4211, or e-mail: twalsh@uwsp.edu.

- Classified Job Listings in every issue of TCI magazine.

To contact Job Corp students from Job Corp Centers in Arkansas, Illinois, Kentucky, and Oregon, call Lynn Kindsvatter of ACRT at 800-847-3541, ext.211, or e-mail: lynnk@acrtnic.com.

Bob Reeder from Trees, Inc. talks with a prospective employee at the Job Fair.

sponsored the “Arbor Care Shuttle” van to transport students between the Baltimore Convention Center and the Baltimore Zoo. Bruce Phillips of Treemasters and Don Becker from SavATree set up the Throw Line competition with multiple targets to add varying degrees of difficulty. Terry Krafick of Preformed Line Products facilitated a fun and informative cabling workshop/competition with donated TREE GRIP Dead-ends, and TREE-CROTCH Grips to which Sierra Moreno Mercantile’s Don Blair donated lag hooks and installation equipment.

Students attended NAA Student Career Days from the Maryland area and from as far away as Nova Scotia and Ontario, Canada. American students traveled from as far as Oklahoma, Wisconsin, Massachusetts and Georgia.

Job Corps students from ACRT’s Pine Knot Job Corps Center in Pine Knot, Ky., also competed in the skills competition, showing off what they learned during their training.

The skills competition was divided into collegiate and vocational. Vocational competitors competed in the same events as collegiate, minus the written exam. The overall results are as follows:
Vocational Arboricultural Skills Competition:
1st place Andrew Duffy Pine Knot Job Corps Center
2nd place Mike Vigh Pine Knot Job Corps Center
3rd place Andrew Rowan Pine Knot Job Corps Center

Collegiate Arboricultural Skills Competition:
1st place Mike Stanonik University of Wisconsin - Steven's Point
2nd place Tim Stabile University of Wisconsin - Steven's Point
3rd place Cory Gritzmaccher Milwaukee Area Technical College

Here are the individual event results for the collegiate competition:

Written Exam:
1st place Lynn Schenkenberger Milwaukee Area Technical College
2nd place Jen Zeier Milwaukee Area Technical College
3rd place Jesse Jablonski Milwaukee Area Technical College

Work Climb Tree “A”:
1st place Tim Stabile University of Massachusetts - Amherst
2nd place Mike Stanonik University of Wisconsin - Steven's Point
3rd place Matt Koepnick University of Wisconsin - Steven's Point

Work Climb Tree “B”:
1st place Aaron Hau Milwaukee Area Technical College
2nd place Leonard Laronde Nova Scotia Agricultural College
3rd place Dan Farvour Milwaukee Area Technical College

Throw Line Competition:
1st place Mike Stanonik University of Wisconsin - Steven’s Point
2nd place Tim Stabile University of Massachusetts - Amherst
3rd place Nick Philp North Metro Technical College - Atlanta

Cabling Competition:
1st place Leonard Laronde & Tim Stabile Nova Scotia Agricultural College / University of Massachusetts - Amherst
2nd place Matt Koepnick & Mike Stanonik University of Wisconsin - Steven’s Point
3rd place Cory Gritzmaccher & Mark Ockerland Milwaukee Area Technical College

Employment Projections

The result from Manpower’s Employment Outlook Survey for the second quarter of 1999 is in—and the news is encouraging if you are a job-seeker. Manpower Inc. is the world’s largest staffing-services firm. Four times a year they conduct an Employment Outlook Survey to gauge the short-term hiring plans of companies. More than 15,000 employers in close to 500 cities are surveyed.

The survey’s results for the second quarter of 1999 show that overall 29 percent of businesses are planning staff increases, while only 6 percent expect a workforce decrease. Although the survey is not sensitive enough to measure the tree care industry or even the green industry as a whole, it does measure construction and service industries. Job growth in these two industries is a good indicator of anticipated growth in the tree care industry. In the survey, 36 percent of construction and 31 percent of service businesses are planning to add employees, while only 4 percent in each category are planning to cut their

Congratulations to all the students

Each participant received certificates and gifts provided by the NAA, Bishop Company, Arbor Care and Bandit Industries.

Next year’s NAA Student Career Days will take place on Nov. 4-6, 1999, at TCI EXPO in Indianapolis, Ind. The primary events—Jobs Fair and the Arboricultural Skills Competition—will be held on Friday, Nov. 5 and Saturday, Nov. 6.

Plans are being laid to make 1999’s Career Days the best yet, including better and bigger awards, and interesting seminars. Students, advisors, Job Corps instructors and tree care professionals should put this date in their calendars now, so your professional training program or tree care company can benefit later!

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TREE CARE INDUSTRY - APRIL 1999
workforce. Note: the results are adjusted so that they do not reflect seasonal hiring patterns.

In the long term, the "good" news for job-seekers continues. The US Bureau of Labor Statistics (BLS) predicts long-term employment growth statistics for United States industries. They project a 10-20 percent employment growth in the overall green industry from the period of 1996 to 2006. Indeed, this is truly good news for all members of our industry, however, it does have a downside.

Many tree care businesses are already experiencing a labor shortage. Imagine what this could be like if the growth our industry is experiencing continues through the year 2006. The determining factor for the success of your business may not be how many contracts you are awarded, but instead, how many employees you can retain!

The BLS also makes projections on the growth of the labor force, defined as those persons working or looking for work. The overall labor force is projected to grow 11 percent from 1996-2006, this is down from the 14 percent growth rate during the previous ten-year period (1986-1996).

What does this all mean to the average tree care company? If you are not considering how to hire your next employee, you will be soon. It also means that those companies who can find and train good employees efficiently will have more success in the future.

What are your options?

Get your company name out there! Attend and support career fairs, such as NAA Student Career Days at TCI EXPO '99 in Indianapolis and the Student Society of Arboriculture’s (SSA) annual conference. Students will remember your name as a progressive company they would enjoy working for when deciding which of the many job offers they will accept.

Start a company training program. By using training materials from the NAA and ISA, you can establish your own company training program. In-house training helps lower job turnover by:
1. making your employees know you value their safety and knowledge;
2. keeping your employees interested in learning new techniques.

Put some "bite" into your training program by offering pay raises contingent upon completion of training.

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training programs in Spanish. Tailgate Safety, a complete safety meeting program, will soon be added to the list of videos and training programs available in Spanish. The ISA will shortly be releasing the new Spanish-English Reference Guide of Terms for Arborists.

Work on putting together a benefit package. Employees are often willing to accept lower wages for superior benefits. Managing benefit costs is a tricky issue, especially for small companies. Remember to expand your horizon if you are a small company. You may not be able to offer full medical, but you could try to offer catastrophic health insurance. These policies cost less than full medical by restricting coverage to serious illness and hospitalization. Housing is another benefit that may be an option. More and more companies are considering employee housing to attract younger workers with new families.

Support vocational and alternative employee training programs, such as local vocational high schools and Job Corps programs. Stay in contact with the school or Job Corps center. Offer to put on a seminar, demonstration or teach a class. This will give you the opportunity to give something back to your community while also making good contacts with teachers and training instructors. You will get to meet and observe potential employees in action. Many vocational high schools offer landscape technology courses but do little to inform students about opportunities in arboriculture. This is where you can offer assistance.

The NAA also thanks the following companies and persons for providing support and donating their valuable time to Student Career Days. Thanks to all for a successful event!

Preformed Line Products • Sierra Moreno Mercantile • Student Society of Arboriculture • Dane Buell • Tim Jackson • Joe Bones • Ken Palmer • Rip Tompkins • Bruce Phillips • Don Becker • Terry Krafick • Tim Walsh

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The accident occurred on a sunny, windless spring day in San Diego, Calif. My ground man, Chris, and I were working about a mile from the beach. From the top of the tall eucalyptus, I could see the glassy ocean and the swells rolling in from the horizon. It was the middle of the afternoon and we were in the final stages of lowering branches from the top of the last tree. We were hoping to finish in time to go surfing. Throughout the day, Chris—who couldn’t see the ocean from the ground—would yell up to me for surf reports. I would repeatedly tell him it was glassy, and I could see the swells stacked up all the way out to sea.

The neighbors marveled at my arboreal acrobatics and engineering skills. They came from around the neighborhood to get a closer look at the spectacle. Seeing the opportunity to meet some of her new neighbors, the homeowner set up a table in her driveway and served cookies and lemonade. It was a festive atmosphere and they all got to know each other better as they watched us work.

The eucalyptus tree was about three feet across at the base and stood about 20 feet west of the house. The client was having us trim branches that leaned toward, and in some cases over, her recently purchased home. She didn’t want to lose any during a storm and suffer damage to her new house. Because of the obvious risk to the house, we were roping down all major branches that could possibly endanger it as they came down. As I cut the higher limbs, the tips brushed the roof of her two-story house as they swung back toward the tree. Then we lowered them down in a safe manner.

About 30 feet from the tree I was in stood the stump of another eucalyptus we had cut down that morning. It was also about three feet across, and I had left the last seven feet, so we could use the trunk to rope down the branches from her sister tree.

With each large branch, I would send the bull rope through a crotch over my head, lower the end to the limb I was cutting, secure the branch with a knot, and signal Chris I was ready to cut. He would pick his end of the rope off the ground, pull it tight, walk it around the stump three or four times without losing the tension, and signal back that he was ready. I would then cut the branch and it would swing away from the house and back toward the tree. When it stopped swinging enough to be safe for the house, Chris would lower it down in a slow, controlled manner. Once the tips were on the ground, we would watch the butt to keep it off the house. If it swung that way, I would hold the rope (since the pressure was less because the branch was on the ground) and he would direct it in a safe direction. Chris would cut up the branch sufficiently to move it out of the way just enough to avoid tripping over it while he worked.

It was hot work, and during the day Chris removed his shirt and hardhat to relieve himself from the afternoon sun. About 30 feet from the tree I was in stood the stump of another eucalyptus we had cut down that morning. It was also about three feet across, and I had left the last seven feet, so we could use the trunk to rope down the branches from her sister tree.

We repeated this routine for over an hour without a hitch before coming to the last major branch. After tying off the limb, I signaled Chris to wrap the rope around the stump.

Chris’ job throughout the day had been somewhat easy. The stump had borne the weight of the heavy branches. To lower the limbs, he only had to undo a wrap or two and let the rope slide through his gloves. Because it had been so easy thus far, he must have forgotten the seriousness of the situation. Instead of wrapping it around the stump, he stood on the lawn, pulled the rope tight, leaned back on it, and nodded his head to indicate he was ready.

He was holding the rope tight in his gloved hands, but it was wrapped once around each bare forearm and in between made a trip around his bare lower back.

I repeated the command to wrap the rope around the stump as if he hadn’t heard me. He nodded again and leaned back on the rope even harder, as if to signify he was really ready. I turned away to give him a minute to think about it and saw the beckoning ocean. It was hot, we were tired, and we both desperately wanted to go surfing. I was losing patience. I turned back to look at him and said one last time, “wrap it.” Once again he nodded his head. I didn’t want to waste any more time arguing with him and figured it wouldn’t kill him, so I cut the branch.

The rope sailed through the crotch above me with no noticeable resistance except that the branch swung back toward the tree enough to miss the house. After

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the branch on its way down. Although it wasn’t necessary to take him to the hospital, he spent the rest of the afternoon blowing on his rope burns in an effort to cool them. They were big and nasty looking, especially the ones in his armpits. It was a miracle he wasn’t more seriously injured. He also didn’t surf for three weeks.

From this little incident there are a number of lessons to be learned and precautions to take so you can avoid a similar accident yourself.

1. Safety must always come first:
   ♦ Any body surface with a rope touching it should be covered to avoid rope burns.
   ♦ Ropes should not be wrapped around any body parts, such as hands, arms, waist, neck or anything else. They should always be wrapped around the base of some immovable object, such as a tree, or not wrapped at all.
   ♦ Hardhats and other safety equipment should always be worn. This is extremely important when working with trees because even the smallest thing, like a pinecone, falling from a great height can do a lot of damage. You have heard this stressed before, yet many take theirs off “once on a while” when it is hot. Accidents are not planned, which is why they’re called accidents. Unforeseen events happen almost daily. What prevents accidents from becoming tragedies is often the proper use of safety equipment. Being uncomfortable or hot is no excuse.

2. Don’t rush:
   ♦ Haste often means carelessness, which is a chief enemy of safety. In this incident, we rushed so we could finish in time to surf before dark. Ironically, because of our haste Chris missed three weeks of surfing instead of one afternoon.
   ♦ When you’re doing dangerous work, the end of the day when you’re tired is not the time to hurry up and finish. Instead, make an effort to concentrate more intensely on what you’re doing to avoid making mistakes that lead to accidents. Some of my worst mistakes came as a result of being tired and behind schedule. These blunders also led to my costliest repair bills. It wouldn’t have taken us more than five extra minutes to finish the job had we only followed the already established protocol. And Chris would have been far better off.

3. Communicate:
   This was both our faults. When working in trees, there’s often communication problems due to distance, ear plugs, chain saws, chippers and other things. Although in this case Chris clearly knew what I was saying, he obviously didn’t understand the seriousness of the situation. After three warnings, he should have obeyed anyway, but when he didn’t, I should have taken whatever measure necessary to make him understand—even if it did mean losing time. Some hazards are easier for the ground man to see, and some for climber. Each should respect the other’s opinion and take the safest steps to insure everyone’s safety.

Joseph Descans is an arborist in Oceanside, Calif.
Dear Max,

I own a small tree business with just a few employees. We work hard for every penny, and we go through rope like crazy. Every time I turn around, I'm buying more rope. Bull rope, climbing rope, lanyards, and tie-down rope. AAAHHH!!! Do you have any idea why my guys are going through so much stuff? What is your Rice on saving money and pe? There are so many different ropes to choose from (and different prices). Can you suggest a rope that will work best for a company like mine?

Signed,
Fed Up Fred

Dear Fred,

YOU ARE NOT ALONE! I can certainly understand your plight, having been employed by Big Al Fontaine for so many years. When it comes to climbing lines, what works within the owner’s budget might not always be what the climbers want. First, take some time and talk to your faithful companions to find out what their needs might be.

Some rope companies advertise their awesome tensile strength. Others offer a better “feel.” Then, of course, there are those rope products with a higher melting point, so when you repel down at lightning speed, your rope won’t melt and leave a hot gooey mess in your hands! With so many options, it can be difficult to decide on just one rope. Keep in mind, though, the rope must meet the ANSI requirements. The safety of your men is worth much more than the cost of even the most expensive rope!

Even though “every good rope has an end,” there are many good habits your men can acquire through training to extend the life of any rope.

- Change the snap clip from end to end daily. This will prevent hardware and prolonged “rubbing” from creating that “hourglass” effect, and minimize the risk of rope failure when extreme stress is applied.
- Tape and cut the ends of a rope. This will prevent unraveling. Melting the ends in addition to the tape works well, too.
- Store rope appropriately. Keep ropes away from hot or sharp objects. Oil and chain saw mix isn’t something you want your rope to sop up, either. Rope bags are a fine option. Simply feed your rope into the bag to reduce the “twisting” and “kinking” that occurs with the standard rope coil.

Remember, the primary issue here is safety. Be diligent and your employees will appreciate your efforts. Good luck!

Signed,
Max Bunyan

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Verticillium wilt is a disease everyone should be familiar with, but most ignore because it's nasty and elusive. Nasty because it causes trees and shrubs to die prematurely or become disfigured. Elusive because it's often difficult to confirm the diagnosis.

Verticillium wilt is caused by the soil-borne fungus, *Verticillium dahliae*. The pathogen persists from season to season in the soil in two ways: as thick-walled structures known as sclerotia and in association with planting stock. Sclerotia are hard, black flecks of fungal tissue designed for long-term survival. They remain dormant in the soil until the root of a susceptible host grows close. Secretions from the root trigger the germination of the sclerotia which penetrate the root tip. Once in the host plant, the fungus may be confined to the outer areas of the root, known as the cortex, or gain entrance to the vascular tissue, specifically the xylem. The outcome of this confrontation between the fungus and the root is determined by the resistance of the particular plant species, the virulence or pathogenicity of the strain of the fungus and the number of other fungi trying to get inside the root tissue. The more root infections there are the greater the probability for successful vascular invasion.

High numbers of sclerotia in the soil favor invasion of the xylem, the plant’s water conducting tissue. It's like a large army trying to attack the plant’s inner fortress (the vascular tissue) versus one or two soldiers. The larger the army, the greater the chances for infection of the vascular tissue.

Once the fungus enters the xylem, it multiplies and spores...
Wood chip, approximately one-quarter inch across, with streaking placed on an agar medium. The black specks are sclerotia.

Symptoms of Verticillium wilt on green ash leaves.

move up to the top of the plant with the transpirational flow of water. Like a straw, the stomata (air exchange pores in leaves) open, moisture flows out of the plant and the Verticillium spores are pulled upward with the movement of water. This movement up the plant is hindered by crosswalls in the xylem (picture these as man-hole covers with lots of holes in them) and defensive responses by the plant including tyloses (balloon-like structures which form to close off the xylem cells), gums, resins and anti-fungal toxins. Movement upward is greater and easier for the fungus than movement around the circumference of the tree. This explains the appearance of symptoms on only one side of the plant or leaf and the partial discoloration of the xylem in branch cross sections.

Verticillium has a very wide host range including annuals, herbaceous perennials, and woody perennials. Sinclair et al (1987), in Diseases of Trees and Shrubs, lists the following woody hosts as suscep-

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tible: ash, avocado, azalea, barberry, boxwood, brambles, buckeye, camphor tree, catalpa, ceanothus, cherry and other stone fruit trees, Kentucky coffee tree, cork tree, creosote bush, currant and gooseberry, daphne, elder, elm, erigonum, weeping fig, flannelbush, golden-rain tree, grapevine, guayule, heath, hebe, heicheus, honeysuckle, hop seed bush, horse-chestnut, India-hawthorn, jasmine, lilac, black locust, magnolia, maple, nandina, olive, Russian olive, osage orange, osmanthus, Japanese pagoda tree, peony, pepper tree, persimmon, photinia, pistache, privet, rabbit-brush, redbud, rock-rose, rose, sage brush, saltbush, sassafras, serviceberry, smoke tree, spirea, sumac, tree-of-heaven, tulip tree, tupelo, viburnum, wiegela, winter fat and yellow-wood.

Listed as resistant or immune by testing or practical experience are all gymnosperms (conifers), all monocots (palms) and the following dicots: apple and crabapple, mountain ash, beech, birch, certain species of boxwood, butternut, certain species of ceanothus, chestnut, citrus, dogwood, eucalyptus, firethorn, sweet gum, hackberry, hawthorn, certain species of hebe, hickory, holly, katsura tree, California laurel, linden, honeylocust, manzanita, mulberry, oak, oleander, pawpaw, pear, pecan, plane tree and sycamore, poplar, quince and flowering quince, rhododendron, certain species of rock rose, sugarberry, walnut, willow and Japanese zelkova.

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Pruning wound exposing the internal discoloration associated with Verticillium wilt. Close examination shows small arcs in the outer vascular ring.

Above ground symptoms resemble numerous other plant problems including canker and root rot diseases, production and landscape problems such as planting too deep, girdling or encircling roots, mechanical branch damage, construction damage to roots and trunk, poor soil water drainage, and drought stress. The disease can appear in a chronic mode (low level/non-dramatic symptoms) or an acute mode (dramatic symptoms often appearing suddenly).

Typical symptoms of Verticillium wilt in trees vary with the species but in general, look for a portion of the tree to turn yellow, reddish or brown, defoliate, or die back. Occasionally, leaves will wilt, but this symptom occurs infrequently on most tree species. Chronic symptoms include small, pale green leaves; little increase in stem diameter or branch length; early fall leaf drop. Investigate further. First, find out if the tree species is known to be susceptible to Verticillium wilt. Then, look for the “only a portion of the tree affected” symptom. Check these branches and the trunk for indications of other problems such as mechanical damage or cankers.

Next, check for a very important symptom: streaking in the vascular ring. Streaking of vascular tissue distinguishes this disease from other disease and non-disease problems but is not always present in small diameter branches. Limbs with symptomatic leaves and at least 2-4 inches in diameter should be checked. Since it is not always advisable to remove large limbs to make a diagnosis you can either observe...
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the cut surface from recent limb removals or peel back the bark to the sapwood in small areas on larger, symptomatic limbs. If the disease is present, you'll see a streaked or speckled appearance (not a solid brown or black color indicative of cankers) which varies in color depending on the tree species. Streaking on maple tends to be green to black whereas in cherry it is a yellow brown. Streaking may occur on only a small amount of the circumference of the branch or encircle it completely. In a branch cross-section you'll see specks scattered in rings or arc shapes. Unfortunately, ash species seldom have any vascular discoloration which makes a definite diagnosis without a laboratory culture impossible. To submit samples to a disease diagnostic lab send freshly collected living branches with symptoms of streaking. In the case of ash species, submit fresh symptomatic leaves.

Remember this fungus is soil-borne and invades the tree from the root, not above ground, as with the insect-vectored wilt diseases, Dutch elm disease and oak wilt. What this means is that the discoloration of the sapwood in the upper branches, while a good indication of Verticillium wilt, may result in negative cultures if the branches are submitted to a plant disease diagnostic laboratory. Why? When the fungus enters the xylem, the battle begins between the tree and the fungus. Chemical weapons may be used on both sides and the resultant discoloration of the xylem in distant locations occurs due to the movement of these chemicals. The soil-borne nature of the disease also means that removal of the symptomatic branches will not rid the tree of the infection as is sometimes done with Dutch elm disease. However, it will improve the appearance of the tree and reduce secondary insect and disease problems.

Soil-borne fungi are well adapted to life outside their hosts, and in the case of Verticillium wilt, the fungus forms the resistant structures, sclerotia, mentioned earlier, that persist for years in the soil. Sclerotia form in dying plant parts such as leaves and stems or recently dead materials, if moisture is available. This means the fungus can be spread in infected plant debris.

One of the keys to managing this disease is to prevent the buildup of sclerotia in the soil of nurseries, landscapes and gardens. To do this, infected plants of any type should be removed and de-stroyed by composting or other means. The fungus will not survive if infested material is correctly composted. All parts of the compost must reach at least 130 degrees Fahrenheit for several days.

Always buy healthy plants. Check new trees carefully for symptoms of wilt or other problems. Avoid, reject or return anything suspicious. Even a good deal on poor quality, possibly diseased, trees, is not worth introducing a long-term problem such as Verticillium wilt into the landscape.

Keep infected trees watered during dry periods to minimize symptom expression. Water infrequently but deeply as water cools the soil and cooler soils favor infection. Fertilizer applied at the recommended rates and time of year may be beneficial. Over application of fertilizers, especially nitrogen, may favor disease development. The application of potassium on potassium-deficient soils is important since adequate potassium is necessary for optimum host defense systems.

Tree owners often keep infected trees for many years while they decline. And, actually, some tree species seem to recover from the disease and only sporadically display symptoms. However, sclerotia do form in infected leaves and if those leaves end up in the garden, susceptible varieties of tomato, eggplant, other vegetables and flowers may be at risk of infection by Verticillium. Tree leaves are a good source of organic matter but composting before adding them to the garden is recommended.

What about using wood chips from infested trees as a mulch in the landscape? Wood chip mulches are very beneficial to trees and should be encouraged. But, remember, sclerotia can form in infected woody plant parts. Research has shown that wood chips from maples trees infected with Verticillium can transmit the disease to eggplant when the chips are mulched around the plants or incorporated into the potting mix. Studies using the same wood chips around trees are inconclusive to date. A continuing study at the University of Minnesota, Department of Forest Resources, is looking at the effects of using Verticillium infested mulches around trees.

Cynthia L. Ash, PhD., is a certified professional plant pathologist and director of scientific services for the American Phytopathological Society in St. Paul, Minn.
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TREE CARE INDUSTRY - APRIL 1999

87
Lost Technology

Did you ever come across cement in a tree? You were probably not happy to find it, but let me tell you about a time when I was excited about finding cement in a tree.

I once attended a meeting of the Massachusetts Arborists Association at which the guest speaker was an old-time tree man by the name of Henry Davis. The topic was the history of arboriculture. Davis has been in the business all his life and ran one of the more respected tree companies in our area for many years. He advocated some practices that were standard in the past but which are no longer considered valid—one of which was filling cavities with cement!

He claimed that this was a sound method of treating cavities, but since it was not being done properly in recent times, the practice had fallen into disrepute. (And probably also because of what a hidden pocket of cement does to a chain saw.)

Davis filled us in (pun intended) on the proper way to do a cavity. There is more to it than dumping wet cement in the hole. He claimed that if the cavity is properly prepared and the cement properly installed, the tree would be sound and decay limited. He also noted it was a lost art, which indeed it must be, because no one does that type of work today.

I remembered Davis’ talk some time later when we were clearing a lot to make way for a soccer field. Part of the lot was a garden that had long since been abandoned and was being reclaimed by forest. We had lamented we would have to cut down several large red oaks that obviously had received some care in the past. Several cables remained, and the trees had no deadwood or broken limbs, and no signs of decay or disease. We later counted the rings on one of them and found it to be about 137 years old. It did not make us happy to cut down such trees, so drelling several chains finding cement made it all the worse.

After we had topped the trees, we went to drop the butts but we kept hitting something when we tried to make the bottom cut. It happened in three different trees. I knew from the way the saws went dull that it was cement, but I could not understand why there would be cement in these trees, since there were no signs of any cavities.

We were working just ahead of the excavators, so we had them bring over a large machine to push over the butts. We figured that we had cut enough of the trunk that the machine could snap-off the rest.

We all stopped to watch. Not without some effort, the excavator was able to snap the trunk of the first one from the stump. There in the middle of the log was cement. Well, the contractor who hauled our logs did not want one with a big hunk of cement in it. This is where it got interesting. The excavator, in an attempt to get the cement out of the log, managed to split this 30-foot log in half lengthwise, revealing the cavity work inside. Had I not attended the talk, I am sure I could not have appreciated what I was looking at.

There was concrete laid into the cavity in horizontal sections, separated with tar paper (which gives it some flexibility and keeps the concrete from breaking up as the tree sways), and it was reinforced with large screw rods. All of this was completely intact and preserved within the log. Upon close inspection, I saw no decay in the wood around the concrete. It was all perfectly sound—even the area above the cavity, which is supposed to be the weakest wall in compartmentalization. The tree had completely callused over the original hole in the trunk, so that the tree showed no signs of the cavity or decay many years later. This condition was consistent in the three trees which had been repaired. And the effort it took to knock over these trees, even after cutting them as much as possible, gives witness to their structural integrity.

It was like finding a Van Gogh in an attic. What I found was the work of a master in a lost technology. That was exciting!

Robert C. Loree is the production manager and former owner of Boston Tree Company in Randolph, Mass.
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