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Do you have a crisis management plan in place to cover things such as:

- Weather disasters
- Loss of your office
- Technology
- Loss of communication capabilities
- Burglary
- Fire
- Death of key employee(s)
- Stolen equipment

Do your employees know what to do in any of these circumstances? Does anybody have off-site copies of items such as your database backup, your primary vendor contact information, and your customer rosters? What about an off-site copy of your crisis management plan?

What happens if a key employee or owner dies? Is there a succession plan in place? Who calls whom, and how are things to be managed?

What if you have a media crisis? Are you ready for the cameras to be rolling in your face? Have you ever thought about how you would handle a reporter – particularly one with a camera – when he or she just shows up on the spot, and it’s not to give you free publicity?

Are you sure that your books are in good shape? When was the last time you had an accountant do a review or audit your books? Have you grown a lot in the past few years; hired a new bookkeeper; or stopped doing any of these functions yourself? If so, it’s time you had someone else take a look for you. It’s money you cannot afford not to spend.

Have you double-checked for changes in wage-and-hour laws lately that could affect how you should be keeping records; paying people; etc? The last thing you need is a Wage and Hour audit. The fines connected to that can be staggering.

It’s so easy to go about your business on a day-to-day basis, because there is always plenty to do. However, you have exerted a lot of effort in building something that means a tremendous amount to you. There may also be people who are depending upon you to lead the way. Thinking ahead about potential liabilities that could cause serious rifts in your business is a responsibility of ownership and management.

Take some time to think through a few scenarios that, hopefully won’t, but could, wind up very costly if you don’t play it safe!

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Publisher

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Publisher
Cynthia Mills, CAE

Editor
Mark Garvin

Technical Editor
Peter Gerstenberger

Assistant Editor
Ariana Ziminsky

Graphic Designer
Martha Brisk

Marketing Communications Manager
Sachin Mohan

Accounting/Editorial/Sales Offices
3 Perimeter Road, Unit 1
Manchester, NH 03103
Phone: (603) 314-5380
Fax: (603) 314-5386
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www.natlarb.com

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TCI, PO Box 15907
North Hollywood, CA 91615-5907
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Canker Rots & the Heart Rot Myth
By Dr. Alex L. Shigo

Opposing Pendulums – Risk Management of Hazardous Trees
By Graeme McMahon

Implementing a Drug-Free Workplace
By Brian Farrington

Outlook
By Cynthia Mills, CAE
You are always looking out for the safety of your workers. But what about the safety of your business?

Washington in Review
By Peter Gerstenberger
OSHA recently launched its annual nationwide employers survey.

Branch Office
By Wayne Outlaw
How much is turnover costing you?

Cutting Edge
New products and news in the tree care industry

Arboriculture & Consulting
By Lew Bloch
Should you charge a fee for consulting? It might be worthwhile – for the customer.

Photos courtesy Alex L. Shigo. Hard, large masses of tissues called “sterile conks” can be seen on infected species of birch. Note the white or bleached area on the bark below the infection site. Bacteria are usually associated with the canker rot fungi. When bacterial liquids flow down the bark, the bark-inhabiting organisms are killed, resulting in a white or bleached area.

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Canker rots: I think I know what they are. But heart rots? I don’t know what they are. The fungi associated with canker rots produce wedge-like structures into the bark. The wedges then squeeze and eventually cause the death of the cambial zone. In a sense, it is as if the tree is being rewounded periodically.

Heartwood, heart rot confusion

Heart rots are defined as the rot of the heartwood in trees. It is implied that all trees have heartwood, which is supposed to be the dead non-responsive central core wood of all trees. Further, the heartwood is thought to be darker in color than the sapwood. The subject gets increasingly more confusing as you wade through the literature, as I have done. The major problem comes when wood that has discolored following wounding is called a type of heartwood: wound heartwood, pathological heartwood, precocious heartwood. The confusion increases as you search to find a definition of heartwood. When trees that do not have heartwood are used in studies that compare heartwood with discolored wood in the same tree, then it is time to give up or try to bring some sense to all of this.

It has been at least 30 years since I started writing and speaking out about this confusion in highly technical and non-technical journals and meetings. When I see new textbooks and hear some teachers, I know that very little clarification has come over the years. Science is supposed to advance as new ideas are presented and as old ideas are reconsidered and adjusted when necessary.

Wood in living trees is a highly ordered arrangement of cells that are all alive when first formed by the cambial zone. In time, some cells age and die and function for transport and support. Other cells live longer and serve as storage spaces for energy reserves and spaces for bodies that carry out the essential processes of life.

Is wood really dead?

A poor understanding of wood in living trees is a major part of the confusion. The great mass or size of trees is the next problem. To study wood, small pieces were taken into a laboratory and examined under the microscope. Wood anatomy was born; not tree anatomy! The information was valuable because products from wood were so important to economics. Further, because wood products were dead, and wood under the microscope was dead, soon wood was considered as a dead substance in living trees. Remember, in the laboratory the wood was fixed - killed and prepared - before being sliced for observation under the microscope. Forest products interests for economic reasons was so high because forests were thought to be endless. Products research and university studies and research on wood products were the major activities associated with trees. Tree biology never had a chance.

Trees are living organisms! As living systems, trees do respond in order to survive when their survival is threatened. So simple. So extremely difficult to get accepted! Why? Because if you accept this simple fact then you must throw out mountains of data and
treatments - really myths - based on trees that have dead wood.

Telescopes and chain saws: research tools

Canker rots is the subject, but to understand the subject, it is necessary to understand why there has been a problem. Canker rots have been and still are called the "true heart rots." They are called such because they appear to not fit the patterns of compartmentalization. I am very familiar with this problem. Some of my dear old research friends of years past did accept parts - but not all - of the compartmentalization theory. They still reserved the "right" to say that there are "true heart rots." The true heart rots do spread beyond boundaries, they said. And, they did, as easily seen on cross-sections of logs. Today there are still many people who believe in true heart rots. Galileo said his critics would not look through his telescope. My critics will not dissect living trees. (It’s great to think that the chain saw is in the same league as the telescope!) Still. Do these "true heart rots" spread beyond boundaries? No! These rots follow the theory of compartmentalization exactly, but to recognize this you must not only dissect trees but also understand compartmentalization.

Every time a living tree is wounded it will respond by first forming chemical boundaries and later anatomical boundaries, but boundaries to resist spread will begin to form as long as there are stored energy reserves. Canker rots are caused by fungi that have the genetic ability to produce wedges into bark. As the fungus wedges spread into the bark they "squeeze" the cambium zone from the outside inward. In time the cambial zone under the wedge wanes and dies. It is the same as a new wound. Then the struggle starts as the fungus “attempts” to grow into the newly declining wood tissues and the tree begins to respond in ways that resist spread.

Ring rots and canker rots

One type of canker rots, called ring rots, go a few steps beyond in their attack. These rot-causing fungi grow best in wood tissues that have been altered chemically as part of the tree’s defense. This is best seen in conifers and Eucalyptus species. I call this action “don’t throw me in the briar patch.” Remember in the Uncle Remus story where the Brer Fox caught the rabbit and wanted to be as mean as possible to the rabbit? The rabbit said to Brer Fox, do anything to me, but please don’t throw me in the briar patch. The fox, thinking this was the worst thing he could do to the rabbit, quickly threw the rabbit into the briar patch. You know the rest of the story. In a sense the same actions happen here. The fungus “says” please don’t form those awful defense chemicals, and the tree does. Then the fungus grows rapidly only in the wood that has the defense chemicals. No competition! The chemicals can only be formed in wood that still contains some living cells. The “rings” as seen on the cross-cut surface of logs then show the rot patterns that followed the tree defense. If all of this is so, why doesn’t the tree die? Simple. Time. It takes time for all of the tree response actions to take place, and it takes time for the fungus to spread. While time is going by, the tree (as a generating system) forms new cells in new spatial positions. So, we have a sort of seesaw going on as the tree responds, the fungus wedges form, the wood dies, the fungus spreads, and new tissues form. Because all these events do take time, both the fungi and the tree benefit. It is difficult for many people to understand the ways natural systems work where two “teams” are “playing” against each other, and both teams win! Trying to explain dualities goes far beyond the scope of this discussion. You either accept them or you don’t!

Armillaria spp. are canker rots

Armillaria species that incite rots of woody roots are canker rots. The fungi produce wedges into the root bark and thus keep expanding the volume of rot. As the rot...
Canker rots are common in many species of eucalyptus. Note the broken branch stub and the bands of decayed wood separated by sound wood in this eucalyptus species.

Heart rot or center rot

Back to old-fashioned heart rot. Again, heart rot is defined as the rot of the heartwood. Further, it was believed that all trees have heartwood, and that heartwood is dead wood, and that the heart or center of all trees is dead, and therefore back to all trees have heartwood. This is a perfect example of circle thinking that starts and finishes on premises that are thought to be correct, but really are not. First, all trees do not have heartwood. Heartwood does not have living cells, yet heartwood will discolor further or form boundaries when wounded. Next, central rots were common because trees have branches! As branches died and stubs were infected, the pathway was always to the center of the tree. Heart rots or center rots were common long before machines went into the forest! So-called saprots were rare because machine-caused wounding was rare. That has all changed in the last century, but the confusion started long before the last century.

If all of this is so, and it is so simple to understand the truth, why was the truth not known long before this? Mainly because forests were thought to be endless, and that...
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the major problems facing humans were problems of products. Trees were everywhere. Why worry about mere trees?

Tree biology still has acceptance problems

As a young researcher, I went to wood meetings all over the world. Those meetings were all aimed at products, not living trees. It is difficult to believe that tree biology is “a new kid on the block.” You will never learn about living things by studying dead things, or by calling living things by names that belong to dead things!

Canker rots are all too common. Ring rots are the most economically damaging defects in pine. *Fomes pini* and its variants have been called the most economically damaging fungi in the world. Of interest is the damage caused by ring rots and canker rots in *Eucalyptus* species. This fact is still not accepted. In 1980, I tried to publish a paper on compartmentalization in *Eucalyptus* species in Australia. The proposed paper was shot down in ways that made it impossible to fly again. The real problem there was not the acceptance of compartmentalization, but rather the fact that if they did, they would have to accept the cause – fire wounds.

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What should be done?

Once a canker rot is identified, the defect will only get worse. Trees do have ways to slow the process. The seesaw does go both ways. The pathogen gains some space and then the tree strengthens the newly injured area by producing not only more wood in the area of injury, but a type of wood that is much stronger than normal wood. The wood is woundwood. Woundwood is wood that forms about an injured area. The wood differs from normal wood in that it has more lignin and the cell types and arrangements are such that they favor long-term support. That is the good news. The not-so-good news is that woundwood is very “expensive.” Here we go back again to the benefits of health. And with health we go back to energy reserves. A tree that has high amounts of energy reserves will be able to form ribs of strong woundwood. A sick tree or tree under any kind of stress will not. We cannot get away from stress, health and energy. The arborist who understands this will treat all trees, including those with canker rots and other injuries, in ways that will increase health and energy reserves and decrease stress. Easy to say. Not so easy to do. Too often the decision comes to remove the tree.

How do canker rots start? (Remember, ring rots are types of canker rots.) Fungi and associates infect wounds and branch stubs in four basic ways:

1. annual cankers, where a shallow wound is infected and spread is limited to one growing period;

2. wounds where successions of organisms may or may not cause increasing columns of compartmentalized discolored and decayed wood;

3. perennial cankers, where wounds and stubs are infected and the pathogens invade bark first and wood later in a seesaw pattern;

4. canker rots where the organisms infect the wood first and then move to the bark.

Little is known about the early stages of establishment of the pathogens that incite canker rots. Here I give you my opinion based on research and observations. I believe the major infection court is dying, not dead, branch bases. At this point they may not be seen or recognized as stubs. I believe further that the most serious type of infection court, or individual, is one where there are still living cells but low or no defense system. (Examples with humans are easy to come by.) Next, at the crotch of branches where the trunk collar and branch collars meet, there is a gap that has been long recognized for annual plants. A similar gap occurs in woody plants. Further, for a brief time during leaf flush, the cells in the gap zone have little bark protection, even on healthy branches. When this area has stressed or dying cells, I believe this is the site and the conditions for infections that incite perennial cankers or canker rots. The major difference between the two is that with perennial cankers, the pathogens invade the bark first and later grow only slightly in the wood. With canker rots, the pathogens infect wood mostly and penetrate the bark only slightly with their wedges. I have never seen a perennial-type canker that did not have an old stub or branch core wood in the center. Most canker rots follow the same pattern, but I have seen a few that did obviously start at trunk wounds.

Most canker rots and perennial cankers will be located between the four to 20 feet above ground level on trunks. Be on alert for them as you climb. The fungus wedges can be verified by the swollen areas about old stubs, and by exposing the wedge by cutting into the swollen area. In conifers, the old branch core wood may be replaced by the wedge material. Such a wedge is often called a punk knot.

On angiosperms, the swollen areas rarely produce sporophores. Sporophores may form on some standing trees after they die, but usually the fertile fruit bodies do not form until the tree is down and in contact with the ground. The same situation
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occurs with some perennial cankers, though not all. A longstanding forestry practice has been to remove trees with canker rots and to do so in ways that keep infected trunks above the ground. In arboriculture I am all for the use of attractive trunk sections for landscaping, but great care must be made never to use a trunk section that has canker rot.

What about chipping trunks that have canker rots or perennial cankers? Can chips used for mulch support growth and fruit bodies of pathogens that incite canker rots or perennial cankers? I am not aware of research on these questions. I believe that as long as wood only is chipped there is little or no problem. However, if bark remains on some chips it is highly possible that perennial canker-causing pathogens could be disseminated. Perennial cankers commonly have fruit bodies on the bark about the canker.

Dr. Alex L. Shigo is the owner of Shigo & Trees, Associates in Durham, N.H.
requirements, which must be at least as stringent as OSHA's.

The rule remains particularly troublesome to small business according to a letter signed by Rep. Charles Norwood (R-Ga.), chairman of the House Subcommittee on Workforce Protections, and Michael Pence (R-Ind.), chairman of the Subcommittee on Regulatory Reform and Oversight.

The chairmen added that lingering concerns remain over how the revised recordkeeping rule would require employers to record musculo-skeletal disorders and other ergonomic injuries.

They noted that the issue is complicated by the fact that Congress earlier this year overturned the OSHA ergonomics rule, which the agency had intended to work in tandem with its recordkeeping rule. Also, the Labor Department is currently holding a number of public forums on ergonomics, in part to gather information on some of the same controversial issues — such as how ergonomic injuries should be recorded — that are also raised by the recordkeeping rule.

The nation's employers have had to keep records on job-related injuries and illnesses since the early 1970s under the Occupational Safety and Health Act, which directed the Labor Department to create a national system for collecting and reporting injury and illness data.

The information recorded by employers on OSHA forms provides the basis of an annual report card on the nation's workplace injuries and illnesses, published by the department's Bureau of Labor Statistics, as well as the aforementioned annual survey conducted by OSHA for enforcement purposes.

Resolution Needed on Lawsuit

A decision by the Bush administration on whether to allow the rule to go forward was complicated by an industry lawsuit filed in March that challenged the new requirements. The suit, filed by National Association of Manufacturers, called on the U.S. District Court for the District of Columbia to rescind the rule in part due to provisions governing the recording of musculo-skeletal disorders on the OSHA forms.

NAM argued that OSHA’s definition for what employers should consider a “recordable” MSD case was written so broadly that it would lead to an explosion in the number of cases of carpal tunnel syndrome and other injuries related to repetitive motion.

Those and other issues in the lawsuit, which has since been joined by the AFL-CIO, will have to be resolved in order for the entire rule to go forward.

Peter Gerstenberger is vice president of business management, safety & education for the National Arborist Association.
Turnover

Your unseen profit drain
By Wayne Outlaw

How much does it cost to lose an employee? Recently, while waiting to start a staffing program for a commercial construction company, I heard the director of safety review the accidents for the past quarter and stress the importance of eliminating accidents to reduce their insurance costs. It struck me that of all the employees who had accidents, all had less than seven months with the company. The company had not made the observation that their high cost of accidents and insurance coverage was directly caused by inexperienced personnel due to turnover.

Studies by various groups show the cost of turnover varies, depending on the position, from as little as a month's salary to one and one-half times the annual salary. This variation is so wide because of the diversity of situations and jobs even within companies. In the tree care industry crewmembers are expensive to lose and foremen even more costly, not to mention the cost of losing anyone higher in the organization.

Most people look at these estimates of the "real cost" of turnover with wonder, disbelief and amazement. Until they take the time and effort to truly calculate their own cost they don't realize the effect it is having on the organization and its profits. Most people don't even think about all the costs, whether direct or hidden, when they think of turnover. Let's get a true picture of what turnover is costing you.

Turnover cost is divided into two distinct portions: direct costs and hidden costs. The direct costs are those identifiable costs that can be quantified by examining records and making good-faith estimates of time and resources. Even these costs are sometimes difficult to measure because of lack of, or inaccurate, record keeping, but nevertheless, are very real.

Whether we know the exact figure or not, the cost and loss are still very real.

Direct cost consists of the cost of terminating an employee, the cost of the position being vacant, replacement cost, and training cost. These costs are usually what everyone sees, but they are only the tip of the iceberg.

What is not seen is the hidden cost. It, like the part of the iceberg just under the water, is the dangerous part. You may feel you are steering clear of the iceberg because you are not near the water line of the iceberg, but ships like the Titanic find out only too late the danger.

The hidden cost of turnover is said to be much greater than the direct cost. Studies indicate that as much as 80 percent of the total cost of turnover is hidden. The factors to consider in hidden cost are reduced productivity or speed, inefficiency, loss of cash and assets, loss of customers or orders, lower sales efficiency, equip-

Direct Costs

Termination Costs:
- Additional administrative time required due to termination
- Separation or severance pay due to departure
- The cost of time conducting and tabulating exit interviews
- Increase in unemployment tax due to added turnover

Vacancy Costs:
- Additional employee overtime
- Additional temporary help
- Additional work outsourced
- Less the wages/benefits not paid due to the vacancy

Replacement Costs:
- Attracting and recruiting
- Screening applicants
- Conducting employment interviews
- Pre-employment evaluations
- Drug testing/credit/criminal checks
- Checking candidates' references
- Additional staff time to process hiring paperwork
- Travel or moving expenses
- Permits, fees or licenses for new employee
- Post-employment information gathering

Training Costs:
- Orienting employee
- Training literature and materials
- Formal class training, fees and employee's time
- Time in informal training or coaching by manager
- Certification on equipment, systems or skills

Hidden Costs:
- Reduced productivity of employees that remain after turnover
- Accidents, safety or increased insurance premiums
- Cost of inefficiency while replacement is learning
- Potential loss of cash and/or assets
- Damage to equipment and assets
- Loss of customers
- Lower sales effectiveness. The lower morale and lack of focus on aggressive sales can reduce overall sales per customer and take away from selling higher profit goods and services
- Lower morale of employees left behind

Set-up of benefits for employee
Uniforms or special equipment

20 TREE CARE INDUSTRY - AUGUST 2001
Helpful Hints While on the Jobsite

By: Jeffrey Lee, Branch Management, Riverside, CA (909) 276-8060
Sponsored by The Bishop Company for the advancement of our industry.

In the past, we introduced you to veteran tree guy, Big Al Fontaine, and his number one man, Max Bunyan. The following are a few of Al and Max’s favorite helpful hints while on the jobsite.

Safety First - Keep orange vests handy and ready to go. Store them behind the seat or in the glove box. That way, you see, there is no reason to get out of the truck without them. Once out of the truck and the tires are choched, get the orange cones and “tree-work” signs placed around the jobsite. This task should be completed first and foremost, to create a “barrier” between you and the innocent folks passing your job.

Job Walk - Have a quick pre job walk with Bunyan. The salesperson, and the crew leader. This will clarify any questions of scope and expectation of work to be done. Take this time to point out any special considerations such as electrical hazards, structural hazards and don’t forget the management of pedestrians or vehicular traffic.

Game plan - Okay, the cones and signs are out, the truck is in place, the crew is chomping at the bit and ready to go. Take this time to present a well-organized game plan. Information such as emergency procedures, individual job responsibilities, and time tracking (goals). These “bits” of information will help improve efficiency, communication and above all, safety. It’s nice to know what everyone on the job is doing and have a good feel for when the work will be completed.

Pre Climb Tree Inspection - This is a biggee folks. It seems to be easiest if you make a routine method of inspection. For example, staring from the roots and inspecting everything to the crown or vice versa. Regardless of the method, we are looking for things like conks and/or mushroom growth, dead, broken and hanging branches, electrical hazard or existing cables/braces. Don’t overlook the hidden hazards such as hollowed out trunks and branches and remember, if there are hollowed areas, check for the presence of bees, wasps and other critters with teeth or stingers. This will relieve us of most worries of working aloft, and get the job done without incident.

Final Walk - Before we run off and call it a day. Let’s take a thorough gander and make sure we have an excellent clean up. Tools, ropes, chunks of wood (mostly stubs) and other tree pieces scattered around should be picked up and put in the proper place. Even if the most awesome pruning job has taken place, poor clean up can leave a bad taste in one’s mouth. Let’s avoid that!

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OSHA Mandatory Employer Survey

The Occupational Safety and Health Administration the week of July 2 launched its annual mandatory survey of more than 80,000 employers nationwide, gathering injury and illness data that it uses to better target high-hazard employers. Tree care employers with more than 40 employees should be receiving surveys.

The 2001 survey program "improves OSHA's ability to identify and target our efforts on the more hazardous workplaces," Acting OSHA Administrator R. Davis Layne said in announcing this year's effort. OSHA has surveyed employers each year since launching the program in 1996, and uses the data for its Site Specific Targeting program, which sends job safety inspectors to sites that report far higher-than-average injury and illness rates.

The survey requests calendar year 2000 data. The information provided in the survey should be consistent with the information from the employer's OSHA 200 Log of Occupational Illnesses and Injuries.

OSHA inspections based on the 2000 data will not be launched until January or February of 2002.

Employers have already begun receiving the OSHA Form 196 next week and must provide the information to the agency within 30 days, either through the mail or by Internet. The survey requests figures for average employment, hours worked, and a summary of the job-related injuries and illnesses that occurred at their work sites in 2000.

Inspections, Other Data Uses

Wall-to-wall inspections triggered by the employer surveys comprise roughly 4,000 or so of the total 34,000 job safety and health inspections conducted each year. Most OSHA inspections are triggered by employee complaints, referrals from other government agencies, and fatalities and other serious injury reports.

The surveys must be returned even if a surveyed employer recorded no occupational injuries or illnesses for 2000, the agency said. Firms that do not respond to the survey will receive a telephone call reminding them of the data request. Those companies that do not respond to the survey can be subject to OSHA enforcement actions.

OSHA has a variety of uses for the data beyond its enforcement efforts. It also uses the site-specific figures to help focus its outreach, consultations, and technical assistance programs.

For example, in addition to inspecting the most hazardous of the 80,000 firms, OSHA also sends warning letters each year to about 13,000 firms that report a lost workday rate nearly triple the national average of three cases per 100 workers. The letters urge employers to seek assistance to reduce their specific hazards, such as outside safety consultants or through OSHA's consultation program.

Employers can request a free hazard survey from an OSHA consultation expert, who can conduct a walk-through of the site that includes a detailing of specific hazards and a final report outlining a plan for addressing hazards. Companies also can be provided training from the consultant in future visits, OSHA said.

Additionally, OSHA reviews the data to measure whether its consultations and inspections of work sites had the effect of reducing injuries and illnesses. Measuring the impact of OSHA's programs is a requirement under the Government Performance and Results Act, which requires federal agencies to develop ways of measuring their effectiveness.

Completed forms can be returned by mail, fax, or via the Internet, using a secure electronic version of the form. The electronic form can be accessed at http://www.osha.gov/form196/cy00.htm.

Recordkeeping requirements to change

The Labor Department announced July 3 that it will allow a Clinton administration rule that will change the way some 1.3 million work sites are required to record their employees' injuries and illnesses to take effect.

However, the department has proposed delaying two important provisions in the rule: A more stringent criteria that had been set for recording workers' hearing loss and a new definition for determining whether musculo-skeletal disorders are work-related and thus must also be recorded.

The department is proposing to delay both of those provisions for one year while it collects public comments on the issues. Thus, those two provisions would not be implemented until Jan. 1, 2003. The remainder of the rule will go into effect as originally planned on Jan. 1, 2002.

The department had to issue some decision on the fate of the recordkeeping rule, promulgated by its Occupational Safety and Health Administration, to ensure that employers have adequate time to implement the new requirements for recording work-related cases for calendar year 2002. Also, state job safety programs also need six months to prepare their own version of the federal
ment damage, and accidents. It even lowers morale and productivity.

In doing research into turnover in the tree care business we found one large, progressive utility, through research, determined that a stable crew with an experienced foreman is 30 percent more productive. That 30 percent improvement makes a big difference in profit. If a new employee makes a mistake, or one who is leaving causes a problem with a customer and you lose the customer, that is in addition to the difference in productivity.

If a foreman or crewmember treats a customer poorly, customers are lost. It is difficult to determine the cost of losing a customer that will not return. Not only is it difficult to calculate the cost of losing a customer, it is difficult or impossible to calculate the number that are lost, however, it is a real loss. The loss may vary depending on whether the company does residential, commercial or utility work. This hidden cost does not take into account the damage an unsatisfied customer could do to future business by telling others about being treated poorly by an unhappy or unknowledgeable employee.

Some question if there really is a cost in lowered morale and productivity when an employee leaves, especially if he is on an experienced crew. But it's true. The Journal of Social Psychology published an article titled, "The Effects of Turnover on the Productivity of Those Who Stay," that reported on the laboratory investigations into the effects of employee turnover on productivity. When test groups were doing a proofreading task and one of the members quit during a break citing illness, dissatisfaction or a desire for greater rewards elsewhere, there was a change in productivity for the next task. In the next proofreading task, those who were exposed to the dissatisfied group member proofread significantly less material. Losing employees not only affects the organization by putting a greater workload on the remaining employees, it also slows down the remaining ones. This loss of productivity and profit cannot be recovered. Since the profit from a crew is determined by how much the workers do and how well they do it, their loss of focus and attention is costly. This does not consider the value of the teamwork and speed that is destroyed with an inexperienced crew and must be rebuilt to build back production.

People constantly ask what turnover costs. While you must evaluate it for yourself, our experience and from what we know, it is approximately $1,000 of direct cost just to put a crewmember on a truck the first day and probably twice that for a foreman. With 80 percent of cost being hidden, that brings the real cost of turnover to $5,000 for a crewmember and $10,000 for a foreman. Your cost may be more or less depending on the situation. What do you normally do to protect a $5,000 or $10,000 asset?

To get an idea of what it costs annually to lose employees in your organization, begin by estimating the cost if a person is lost for each position. Estimate both the direct and hidden costs of losing an employee. Now determine how many people, in each type of position, you have lost in the past year. Multiply each position's estimated turnover cost by the number lost and get a total. While situations vary, with some people who leave costing less and others costing more, the average will be very representative. The sum of the turnover cost for each position is the annual cost of turnover for the entire company.

If, after you make this calculation, you realize that you don't like the amount of money that's leaving your business with each departing employee, it's time to invest some of that money in improved hiring and retention. Imagine how much you would save if your turnover drain was $69,950, as in the example, and if you were able to save half of the crewmen and two-thirds of the foremen. You would save $40,055, and most of it would flow directly to the bottom line.

In an industry where the turnover can be as high as 100 percent, the question is, what should it be? While even the most turnover-prone industries have examples of companies where turnover is miniscule, some turnover is uncontrollable, due to retirement, medical leave, or relocation. The real culprit is the controllable turnover, which may not be able to be fully eliminated, but can be reduced and managed. There is no absolute for turnover, but there are industry averages and norms. What is more important is what your turnover is and what you can reasonably reduce it to. Your management practices, policies, compensation and corporate climate are big factors in when good employees leave. Some turnover is preordained because an employee never should have been hired because he or she can't do the job, doesn't want to do the job, or will not fit in the tree care environment.

Many companies think the cost of running background checks, investing in higher pay, conducting attitude surveys or even hiring an employment consultant is prohibitive. But in reality, it's the cost of investing too little in hiring and retention that is prohibitive. Examine your turnover. What is it costing you and how could you eliminate that costly profit drain? These are important questions to ask.

For further information on determining your real turnover and more importantly reducing its profit drain, contact Wayne Outlaw, OUTLAW GROUP, Inc., (843) 844-9361 or e-mail Wayne@OutlawGroup.com.
Plastic Composites Corporation has created a product to remove rainwater from bucket trucks. PCC's solution is to mount a plastic manually-operated water pump to a backboard that hands from the lip of any bucket or bucket with liner. A tube extends from the pump to the bottom of the bucket. The pump removes water one pound per stroke; this means it can pump an accumulation of 2 inches of water out of a two-man bucket truck in less than three minutes, keeping a bucket dry in a downpour. Because the pump system is small, it can be left on the bucket and be pushed out of the way when not in use. Since it is made of plastic, it is dielectrically safe. It is easily removable, and can be used in both trucks of a dual bucket truck. For more information, call (800) 747-9339, e-mail INPCC@aol.com or visit www.buckettruckparts.com.

Western has introduced a new snowplow attaching and removal system. The key highlights of the system include: a simple drive-in attachment; the UltraMount® System, which incorporates a pivot bar that rotates, allowing the drive-in points to remain level even when the blade is not; and an optimum off-season clearance, offered by two receiver brackets on the vehicle that are easily removable for better off-season ground clearance – no tools required. For more information, contact Western at (866) 334-3850 or visit www.westernplows.com.

Morbark’s new 2400XL is a versatile machine that can be used both as a loader-fed and a hand-fed chipper. Morbark used the same design built onto its Models 20/36 and 30/36 Whole Tree Chippers while building the 2400XL. It can be equipped with the Mor-Lift Model 150 hydraulic knuckle-boom loader and grapple, which has a lift capacity of 2,000 pounds at 10-feet. The grapple rotates 360 degrees. This 18-inch diameter chipper recycles wood waste, including brush, logging slash and orchard prunings. It has either a 250-BP John Deere or 260-BP Cummins engine. Two rear hydraulic stabilizers are standard features for added stability. All controls are located in the operator’s station, including a hydraulically controlled joysticks for loader operation. The joysticks are mounted on the safety guard for operator safety. The operator’s station folds in for easy transport. For more information, contact a Morbark sales representative at (800) 831-0042.
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Harter new executive director of ISA

Paul A. Harter has been chosen as the new executive director of the International Society of Arboriculture (ISA). The Society’s 14,000-plus members include researchers, educators, commercial, municipal, consulting and utility arborists, urban foresters, foresters, landscape architects, and other disciplines that share a passion for trees.

“We feel that his combination of business acumen, operations management experience, and down-to-earth demeanor will provide excellent leadership to the staff, and will play a nurturing role with the diverse interests of our members and regional chapters,” stated ISA President John Hendricksen, announcing the appointment.

Harter has worked with ISA since January 1999, and has served as its Interim Executive Director since August 2000.


DynaMotive Technologies Corp. changes name

Richard Lin, chairman of DynaMotive Technologies Corporation, has announced that the company’s shareholders approved the its name change to DynaMotive Energy Systems Corporation at the last annual general meeting and extraordinary general meeting in Vancouver, British Columbia, on June 26. The new name, DynaMotive Energy, was chosen to reflect the focus and direction of the company.

DynaMotive Energy develops technology that converts forest and other agricultural residues into char, non-condensable gases and BioOil, a renewable and environmentally friendly liquid fuel that is capable of replacing fuel oil, diesel oil and natural gas in power and heat generation plants and other applications.

DynaMotive Energy’s corporate headquarters are in Vancouver, BC, Canada and it also has operating subsidiaries in London and in the United States, in Los Angeles, Calif.

Bobcat Acquires Czech Company Superstav

Bobcat Company of West Fargo, N.D., has purchased Superstav, s.r.o., a manufacturer of compact loader-backhoes based in Dobří, Czech Republic, and its subsidiary, Earth Force America Inc. of Charleston, S.C. Bobcat is a business unit of Ingersoll-Rand Co.

The acquisition includes Superstav’s line of compact loader-backhoe products marketed under the EarthForce® brand and its Dobří manufacturing plant located outside Prague. Company founder Chris Nielsen will continue as president of Superstav, which employs 200 in its design and manufacturing operations.

Since he started the company five years ago, Nielsen has focused on developing and manufacturing a range of six fully hydrostatic, compact loader-backhoes with digging depths ranging from 9 to 13 feet.

NBSPA Becomes Mulch & Soil Council

On July 1, Mulch & Soil Council (MSC) became the new name for the former National Bark & Soil Producers Association (NBSPA). This latest change is the second time in 29 years that the association has updated its identity to match its expanding membership and growing market audience.

The MSC’s current name change grew from the development of a voluntary national product certification program in 1997. After defining product quality guidelines and uniform industry labeling practices, the Standards and Certification Committees recommended that a name change would help build public recognition for the organization and its members.

In selecting its new name, the Board of Directors broadened “Bark” into “Mulch” in order to recognize the variety of quality products available in the current horticultural mulch market. The Board of Directors also discontinued using the word “Producer” to give better recognition to the many different member interests serviced by the organization. Finally, “Association” was replaced with “Council” to emphasize the public-information function of the group.
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Consulting for a Fee?

By Lew Bloch

Many tree service contractors advertise and offer free consultations. The reason for this is obvious — to sell tree work. There is nothing wrong with this practice, and it is a good marketing tool. By making a free inspection trip to a prospective client’s property, a sharp salesperson can find numerous things to sell to the client. I purposely emphasize the term salesperson, because in order to stay in business, tree contractors need good salespeople more than they need good arborists calling on the public. I have often thought that it might be better for a company to hire people with a successful track record in sales, then train them in arboriculture rather than hire good arborists and train them to sell. This statement is sure to raise the hackles of many old-line tree people, but no matter how well a company is staffed with good arborists, if they can’t close a sale, they may soon be out of business. Why not have an excellent sales force and an excellent arborist staff?

I fully realize that many of my colleagues cannot accept the premise that we need good business minds — in sales, personnel, finance and management — not just good tree people. The president of General Motors need not know anything about cars and the president of Dupont need not be a chemist, so why does the president of a tree service have to be a tree expert? A sharp president who knows how to run a business can certainly surround himself or herself with knowledgeable tree people. Maybe this is why the tree industry does not command the respect that it really deserves in the business community. Some look at our industry as a bunch of tree skinners or chain saw jockeys rather than savvy businessmen and businesswomen.

I once received a letter from a “professional tree person” regarding an article of mine in which I stated that in order to be respected as professionals, we must act and dress more like professionals. His reply was that it is not important how we look or act as an industry, only that we do good tree work. He insisted his customers do not care how he dresses or acts. It is obvious that his is a one man, out-of-the-garage operation, and will stay that way.

In my humble opinion, if we want to be treated as professionals, we need to be professionals. In the above-mentioned article I related an incident in which I was retained to visit a construction site at a townhouse development to investigate and appraise damages from an accidental hydraulic line that burst and sprayed on some plantings. I went to the site dressed in a nice sweater, shirt, slacks and shoes. The construction superintendent and I went to meet the development’s representative to discuss the problem. The superintendent had on a hard hat, checkered flannel shirt, dusty overalls, and dirty work boots. When we approached the site, representative walked up to the superintendent and said, “Oh, you must be the arborist.”

Does this send a message? Yes!

Many years ago, when I worked as a landscape contractor, old-timers ran the landscaping and nursery industries. When large businesses started to take an interest, the old codgers thought the newcomers would be ruined. They didn’t think that pencil pushers could understand the industry of plants and their care. Of course, garden centers and landscape contracting companies flourished, and the industry is well managed with numerous successful and large operations. This is happening in the tree care industry, and it is good, not bad!

Is there a market for consultation for a fee? Of course there is! Free consultations can be a valuable tool for selling tree work, building up the client list and promoting one’s company. But if a company does nothing but give free advice and does not close a certain amount of sales, it will soon be out of business. Therefore, there could be a certain amount of pressure on these salespeople/consultants to sell some tree work. Further, the client might not necessarily be getting the best advice.

Some of us are full-time consultants who sell our knowledge and advice but never our contracting services. There are not many of us, as most of my colleagues who hang out the consultant shingle do both consulting and contracting. At one time I did own a contracting business and also did consulting for a fee. At that time, however, I always told my consulting clients that they could not engage my contracting company if they retained me as a consultant.

I have another “humble” opinion that some of my colleagues do not like. If an arborist is going to do a consultation for a fee, he or she should not also give an estimate or proposal for contracting services. On several occasions I have been involved in court cases in which a tree company has provided an appraisal of a tree’s value when it is obvious that tree would become the subject of a lawsuit.
The tree company also provided an estimate for services to “save” the tree or to remove it. Trust me, such an appraisal may be worthless to the client as it is considered biased. Further, it is not serving the client well to give a hazard tree evaluation for a possible lawsuit, as well as a proposal to remove the tree or to save it.

Photo No. 1 is from a lawsuit in which the homeowner sued three defendants because the new construction allegedly killed her 46-inch oak tree. The photo was taken in June, at the time excavation started. You can see the subject oak with little foliage, while the surrounding trees were in full foliage. In July, four tree contractors gave appraisals as to the tree’s value, as well as estimates to save or remove it. In August, two others concluded the tree was dead. Most of those called in to look at the tree agreed it had armillaria. Two consulting arborists made appraisals of value in August and September, even though the tree was dead or dying. The description above is a brief synopsis. The parties eventually settled for $10,000 from two of the three defendants. My client refused to take part in the settlement offer, after my report, and paid nothing.

Many times I have been retained because homeowners had received differing opinions as to whether they should remove a tree or spend money trying to save it. The situation often goes beyond monetary considerations, since the tree could present a hazardous situation.

How much risk is tolerable is a difficult decision, but one should remember the decision as to how much risk to take is up to the client. I have been involved in more than 50 cases involving fatalities or severe personal injuries, and I know how stressful and sad these can be. We can predict tree failures, but we cannot predict when they will fail. Some of my clients are new homebuyers who want an inspection of the trees before they buy. I have given opinions that have nullified contingent sales contracts. Sometimes my clients want a one-time inspection. Others want annual inspections, which is refreshing since it seems like most of our business involves solving problems, not preventing them.

I was retained a few years ago to inspect some trees on an upscale property. The owner had already received inspection reports from seven certified arborists and was confused with each one. The client had lived on this 12-year-old estate for a little more than a year, and the trees were sad looking. Some of the tree experts cited the drought, some wanted to implement a spraying and/or fertilizing program and some just did not have an answer.

The problem was evident as soon as I got out of my car. Landscapers had been applying mulching annually, and the trees had over 22-inches piled on their trunks. The azaleas and other shrubs were covered with over 12 inches of...
mulch. Why was this a difficult diagnosis? Sometimes I think arborists spend too much time looking up when they should be looking down. Actually, I don’t know the percentages, but most of the tree problems I visit are abiotic rather than caused by an insect or a disease.

Photo No. 2 is of a “sick” tree that an arborist wanted to spray and fertilize in order to save it. It almost looks like this Japanese maple is frowning and saying, “roots, stop strangling me!”

If one desires to become a consulting arborist, there is no better haven for learning the trade than the American Society of Consulting Arborists (ASCA). Whereas the requirements for membership are much simpler than in the past, they still require a high level of competence to become a Registered Consulting Arborist, particularly when it comes to communications, ethics and practice management. Whereas the society is a really great learning experience, membership is not a necessity to becoming a good consultant. I have learned the trade from my ASCA associations and friendships, as well as lectures and publications, and just by going out and doing it. Although there are more and more “pure” consultants like me, many are still involved in contracting businesses along with their consulting practices.

It is my (never-to-be) humble opinion that there is certainly a place for the free consultation by tree contractors. However, there is also a place for consultation for a fee for homeowners. I know some of my colleagues do not promote the homeowner clientele, but I do. I advertise this service in the Yellow Pages and offer all of the clients who have retained me free, unlimited telephone consultations. No one has ever abused the offer, and I certainly would never hang up on any of them or send a bill for the few minutes of a telephone call. It’s just a marketing tool. Whether a consultation is free, or is paid for, it certainly should be done professionally, with class, and by a professional.

Lew Bloch is a registered consulting arborist and licensed landscape architect. He is author of Tree Law Cases in the USA.
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<td>Ohio Turfgrass Foundation</td>
<td>August 15, 2001</td>
<td>Ohio Turfgrass Foundation Turfgrass Research Field Day</td>
<td>OTF Research &amp; Education Center Ohio State University West Campus Columbus, Ohio Contact: (888) 683-3445 or visit <a href="http://www.ohioturfgrass.org">www.ohioturfgrass.org</a></td>
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<td>California State University, San Bernardino</td>
<td>Southwest Palm Seminar Richard M. Nixon Library Yorba Linda, Calif. Contact: Karen Yates, (909) 880-5977 or fax: (909) 880-7065</td>
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<td>September 13, 2001</td>
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<td>Summer Workshop &amp; Tree Climbing Championship Olin-Turville Park Madison, Wis. Contact: Jesse Zieminski, (262) 542-0404; email: <a href="mailto:atetrees@aol.com">atetrees@aol.com</a></td>
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<td>The Floral &amp; Nursery Plants Research Unit of U.S. National Arboretum</td>
<td>Open house Beltville Agricultural Research Center Beltville, MD. Contact/Preregistration: (301) 504-6570</td>
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<td>The Pacific Northwest Chapter</td>
<td>September 23-26, 2001</td>
<td>International Society of Arboriculture</td>
<td>&quot;2001: A Tree Odyssey&quot; Annual Training Conference Harrison Hot Springs, British Columbia. Contact: Paul Ries, <a href="mailto:pries@pnwisa.org">pries@pnwisa.org</a> or (503) 874-8263 or visit <a href="http://www.pnwisa.org">www.pnwisa.org</a></td>
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<td>Rocky Mountain Tree Care Workshop University Park Holiday Inn</td>
<td>Fort Collins, Colorado Presenter: Dr. Claus Mattheck Contact: ISA-RMC, Diane Page (303) 756-1815</td>
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<td>Washington Landscape Trade Show &amp; Field Day</td>
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<td>10th Annual Conference “Sustaining Our Urban Forests” Knoxville, Tenn. UT Conference Center Contact: (615) 352-8985, fax: (615) 352-6762 visit <a href="http://www.tufc.com">www.tufc.com</a> or e-mail <a href="mailto:tufc@wave3online.com">tufc@wave3online.com</a></td>
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TREE CARE INDUSTRY - AUGUST 2001 31
Removing hazardous *Eucalyptus regnans* trees from confined sites requires the use of sound rigging techniques implemented by a well-coordinated team. The requirements of such tree removals and hazard reduction become compound if the intrusive works are to have maintained the delicate environmental balance of the remaining forest, between the upper-canopy, understory and surrounding forest. In addition, the late William Ricketts’ life work of delicate sculptures adorn much of the forest floor of the William Ricketts Sanctuary in Australia. Completing the tree works for public safety while maintaining the spiritual atmosphere of the sanctuary demanded a degree of control not previously justified. The use of accurate measurements, special rope and a laptop computer enabled the calculated control of the blocks of wood, some weighing 1.25 tons, with precision.

The Parks Victoria are custodian of many of the gardens and reserves in the Dandenong ranges, east of Melbourne, Australia. None are more noteworthy than the William Ricketts Sanctuary, named after the man who devoted his life to creating the sculptures that are set among the trees on the forest floor. The majestic *Eucalyptus regnans* forest where he lived and worked becomes the living stage, enhancing the spiritual atmosphere of his themes of Mother Nature, Aboriginal people, being at one with the environment, and white man’s influence.

Increasing public visitation to the sanctuary, coupled with many branch and tree failures, raised concerns for public safety and the works themselves.

The Centre for Forest Tree Technology (CFTT) was engaged to undertake a study to establish the causes for the general decline in tree health and identify associated hazards in the forest. A detailed document, called “Ecology, Safety and Silviculture in the Mountain Ash Forests of the Sanctuary and Surrounds,” contributed to the vegetation management plan. The forest trees in the sanctuary were mapped and 10 were selected for a detailed risk analysis. Of these, seven were identified for prompt removal, the remaining three to have the hazardous dead limbs removed. The reasons for the tree removals were from two main areas:

1. There were exhibiting obvious trunk/root ball defects with bias to or directly over high visitation areas.
2. They were suppressed or becoming suppressed by the more dominant trees around them. The signs of this were easily seen as the tree struggled to maintain foliage on a crown that consisted mostly of dead wood. Trunk defects were numerous, providing easy penetration of ants, grubs and water, which further diminished the structural qualities of the trunk.

The position of these trees was also considered in relation to areas of high visitation or over a large concentration of sculptures.

The trees to have the limbs removed had high concentrations of dead limbs above an area of high visitation and/or a large concentration of art works.

The contract was tendered and parameters set regarding the end product.

- All to be lowered down onto the narrow path winding through the sanctuary (2 feet to 3 feet wide).
- Minimal impact on ferns, mosses and remaining trunks as they combine together to provide the atmosphere around the works.
- All debris to be removed.

The removal of the limbs and heads went ahead as they had in the past: rigged, cut off and lowered without causing sudden loading or impacting against itself or the surrounding trees. The dead limbs ranged between 10 feet and 66 feet long. These could not be treated roughly, as they could easily break and the sections would have fallen away, leaving the rope tied to a small remaining piece. The consequences of even a small limb falling 200 feet onto a delicate sculpture could have resulted in irreparable damage. Sudden movements while climbing around in the crown of the tree could also cause dead wood to wobble dangerously near breaking point.

The 165- to 200-foot high standing trunks presented difficulties in removal, even when using specialized dismantling techniques. Dropping any piece, no matter how small, was out of the question. Lowering pieces from the trunk being removed, nearby tree, or multiple trees was also discounted as shock load-
ing could result in dead limbs or chunks of bark being dislodged and falling uncontrolled. The basal 20 to 33 feet of trunk presented its own set of difficulties because of rope elongation (even with pre-load applied), pendulum lengths, and pendulum rates with retarders could not offer calculated, guaranteed results.

The test case to either side of any pre-load pendulum technique is:

A. Not enough pre-load applied:

The block would fall onto the rope past the desired pre-load, causing an increased loading on the rope as its fall was arrested. This momentary increased loading (shock) would be transferred to the high point by the rope. The sudden changes in tension of the rope could cause the crown of the tree supporting the high point to be given a violent shake. This reaction could cause dead limbs to break off and fall uncontrolled to the ground. The results could be damage to sculptures, a struck-by injury or exceeding the safe working load of the system.

B. Too much pre-load applied:

The block may be pulled back sharply by the rope, causing a sharp reduction in line tension. The block would continue to rise up past the desired pre-load until the force of gravity prevented its continuous rise, causing it to fall back onto the rope as previously described. The initial direction of movement of the high point would be in the opposite direction as in example A, however the possible results would be the same.

Using any of the conventional lowering devices with the lowering point at the point of cut created obvious problems. At elevated positions the impact of the block of wood could pulverize a chunk of bark, causing it to fall uncontrolled. The smooth parallel sides of the mountain ash would require extra precautions to ensure the block cannot escape the rope. Close to the ground would mean that the pendulum down could be too close to the objects to be avoided. In addition, the ratio of log diameter to the length of section being removed (given
the limitations of the safe working load of the system) created more difficulties of the rope grasping the section during the dynamic movement of being transferred to a hanging position below its lowering point.

The method devised

For the method of dismantling of the trunks to be suitable it was required to be reliable and cost effective. Gravity is constant in this context and costs nothing to use. The 26,400-pound lift of the “sky-crane” helicopter was considered, as it is rigged for helicopter logging. However, a cheaper method was devised.

Essentially the technique uses two opposing pendulums. The two lowering (high) points are above, either side of and in line with the load to be supported. If we consider the two ropes rising from either side of the load as vectors, the sum of the vertical components equal the load to be held. The two horizontal components equal zero. The result of pre-loading each rope accurately is that the load stays exactly where it is released. When the angle of each vector is the same, the solution to the required magnitude is straightforward trigonometry.

For example, if we need to hold a 2,200-pound load, each rope needs to support 1,100 pounds. If each rope rises at an angle of 45 degrees, the required tension (T) for each rope can be calculated. (See Fig.1)

The horizontal components of the two vectors are 500kg (1,100 pounds) each and in opposite directions, hence they cancel out while holding the opposing rope and preventing its pendulum.

For this concept to work practically, we needed to be able to calculate the line tensions for any combination with a variable load, that is 0 degree to 90 degrees with any combination of the same. This required building a relationship between the two vectors, and deriving the formula.

\[
T_2 = \frac{W \sin \theta_1}{\sin \theta_2 \cos \theta_1 + \cos \theta_1 \sin \theta_1}
\]

\[
T_1 = \frac{W \sin \theta_2}{\sin \theta_2 \cos \theta_1 + \cos \theta_1 \sin \theta_1}
\]

With the above formula it was now possible to calculate both the line tensions required given any angles of the supporting pendulum or load to be held. Pulleys set at the high points; either side of the trunk being dismantled enabled the friction at that point to be considered zero. Where possible the rope continued in the same vertical plane to reduce the side loading on the lowering point. (See Fig. 2.)

The rope continued down to the ground where another pulley was used to give the final change in direction. The rope would now present in a horizontal fashion to the anchor point, thus making it easier for the ground crew to perform the necessary tasks. (See Fig. 3.)

The two functions at the anchor point were to:

1. Accurately pretension the rope. A dynamometer (crane scale) was attached to the anchor point. The other side to a 1,500 kg (3,300 pound) winch, the winch hook onto a Prussik loop, which grasped the main lowering line. The winch could now be used to give the exact pre-load required.

2. Control the lowering of the loads. A single “Goldtail” (large friction device) was used to control the loads less than 750 kg (1,650 pounds). Lines were required to control blocks of up to 1,250 kg (2,750 pounds) that had a large steel friction device used in series with the Goldtail. The steel device, which was a similar design to the Goldtail and crudely fashioned by myself, was attached to the anchor point and the Goldtail attached in series to it. Friction could be added and reduced during the lowering operation. Because of the changes in load share, it was essential to have this flexibility. At times a rope may be controlling a 1.25-ton load when the...
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When it comes to arborist supplies... the block to pendulum entirely onto one rope it could be pulled/pushed around the base of the tree and laid over. Because of the 60-meter (200-foot) plus pendulum length, the work required was minimal. For one of the trunks, the wood was bought to the ground 10 meters (33 feet) outside the above range. A tag line was attached to the section. Prior to it reaching the ground, a horizontal force was applied to the tag line in the intended direction. This enabled the load to be displaced the required distance. Prior to the lower end of the block of wood touching the ground, it was found that applying a force in the opposite direction to the direction you wished to lie the section down made the task of laying it in a precise direction easier. When the block touched the ground, this displacement ensured its base of support was well outside its center of gravity. Thus the section would, due to gravity, tend to lie down exactly in the intended position. By controlled lowering between the two ropes successful placement was ensured.

One of the trunks was displaced horizontally in sections 35 metres (115 feet) using the controlled pendulum. This was possible only because of the height of the lowering points. Using these rope pendulums only for the descent meant that sometimes the section was too low to clear some sculptures, buildings, plants etc. With the winch in place, it was little fuss to raise the section up the small amount. For higher lifts, there are many other winches more suited to that task.

### Rope selection

Over 300 meters (1,000 feet) of the main lowering lines had to be handled off the ground at any one time. There were many other ropes and slings used during the operation for a range of other tasks. The lowering lines needed to have specific characteristics if the system was to be cost effective and efficient. They were:

- High breaking strength for a low weight of rope (kg/m or lb/ft)
- Good “knotability” (retention of knot characteristics)
- Very low elongation throughout the loading spectrum of the fiber type.
- Minimum length of 180 meters (590 feet).

One fiber type, Vectran, stood out from the rest. It is a polyester derivative, produced by Kinnears ropes and used in the core of ropes in the Challenge Braid range. Challenge Braid was developed for the America’s Cup yachts and available through Kinnears ropes in Melbourne. With vectran core and polyester multi-fila-
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<td>1/2”</td>
<td>7.9 lbs.</td>
<td>8,100 lbs.</td>
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<td>TRUE-BLUE SPECIFICATIONS</td>
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Computer

The formula was derived, and subsequently programmed into a laptop computer in a spreadsheet format. The computer was run on battery power for some of the trees, but for most we had a power source in William Ricketts’ old residence. The building was central to a number of trees, of which we passed two right over to the other side to reduce the work of extraction. The building also provided an environment conducive to operate the computer, away from dirt, moisture and the continual shower of sawdust.

**Measurements**

Measurements that were necessary up the tree required the use of an inclination meter, tape measure and log volume tables. The inclination meter sat on the rope and because of the internal pendulum gives an accurate angle measure from the vertical. Log volume is easily calculated with the tape and tables. Timber densities increased

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<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Price</th>
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<td>P1450</td>
<td>20&quot; Special Lightweight Loppers</td>
<td>$37.95</td>
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**SOURCE:** TC2K

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The 335XPT arborist saw by Husqvarna. Powerful, balanced, and more reliable than ever. It boasts an unbeatable power to weight ratio, snag free shape, and the industry exclusive ArborGrip™, our textured handle with thumb and throttle finger supports for greater control and to get you to those tight, high places with ease.

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Use of chain saws in trees should only be done by professionals with specific training. Price and availability vary by dealer. ©2001 Husqvarna

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due to increased amounts of water retained as we progressed down the trunk. This meant juggling (guesswork) the densities from under 1,000 kg (2200 lb) to the cubic meter to over 1,250 kg (2,750 lb) to the cubic meter. One good indicator that the density was going to increase was when the preceding section being lowered started to run water out, after being cut off. This indicated that the next section to be removed would contain more water than the previous, and an increase in density would follow. Working down the trunk the increasing density soon became constant when the section could retain no more water for its volume.

Conclusion
The result of this system was that even with minor deviations in measurements and estimates, an extremely high level of control was maintained. The main reason for this is the extremely low stretch rope selected for the task. It gave direct control of the sections being lowered to the anchor point, where the rope was being fed through the friction device. The positive control achieved meant that 10 cm (4 inch) of rope allowed through the friction device gave exactly 10 cm (4 inches) of “down” at the other end without any bouncing. With around 140 meters (460 feet) of rope between the friction device and load, this control enabled confident lowering of over 1,000 kg (2,200 pounds) of wood at a time between the sculptures.

The only uncontrolled movement possible was that initiated by the head of the tree used as the high point. Small air currents passing through the crown could result in the high point oscillating one to two meters. Stronger winds can result in excessive displacements of the high point.

Most of the blocks being cut off lifted 6 mm (1/4 inch) or just sat gently where they were. By rigging the high points slightly out of line of the trunk being removed, the sections didn’t have to be pushed manually off the stump. The cutting was started from the compression side of the section until it started to close, then from the tension side just below the previous cut. When the cuts overlapped, the block would slowly drag off to the side away from me. The high points seemed unaffected by this refinement, as the pre-load was precise.

When lowering mid-trunk sections the limiting factor was the length that would fit onto the narrow winding path under the fern canopy. That section would then have to be extracted to create enough space for the next one. While I had difficulties keeping up with the efficient extraction team, the system overall is productive enough to be worthwhile in this case. There is room for improvements on the raising and lowering equipment that was used. The concept of opposing pendulums may be transferable into other work applications, such as tree transplanting, extracting material from a confined site or extending the system to three high points.

Acknowledgements
I wish to thank Alan McMahon for his assistance in deriving the formula, placing it in a useable format on his laptop computer and its subsequent use; Bill Rouse for the use of one dynamometer and as a tireless source of information regarding ropes and their applications; Paul Maroney from Kinnears Ropes for sourcing the ropes and backing my endeavor with advice from the technical and research sections; Mick Herrick from Crux Rescue, Australia, for designing and making the pulleys to fit the rope; my crew on the ground who functioned as a team, overcoming any problems created by the new procedure; and Peter Roweth from Enth Degree Photographics for continuing to pursue a high standard of plates under very difficult conditions.
THANKS
To The Companies That Will Make
the Tour des Trees a Success in 2001!

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Please circle 72 on Reader Service Card
Join the fun at Student Career Days ...

where students compete and employers meet the next generation of arborists

This year's Job and Internship Fair at NAA Student Career Days, which is held in conjunction with TCI EXPO, is expected to be the best ever. The quality of the event and the number of student attendees increase every year. More and more students rely on NAA Student Career Days to find employers, and, with a tight employee market, many students can choose where they want to work. Students use this event to size up employers just as much as employers use the event to size up the students!

In addition, the NAA continually works to improve the event. Some changes have been made, including moving the Job and Internship Fair to Thursday afternoon, and providing a late lunch and meeting place for students as they arrive. The Job and Internship Fair (Thursday, Nov. 1, from 12:30 to 4:30 p.m.) will also be the orientation point for the Tree Care Skills Competition later in the afternoon.

NAA Student Career Days 2001 Schedule

Join the fun at Student Career Days, where students compete and employers meet the next generation of arborists.

Thursday-Saturday, Nov. 1-3
TCI EXPO 2001 Trade Show Floor, Seminars, and Live Dems Events held at the Greater Columbus Convention Center, including:
♦ Tree Care Business workshops - Get a head start on your managerial skills!
♦ Numerous Technical Seminars - see TCI EXPO brochure
♦ Live Arborist Demos in climbing, safety, rigging, and more, right on the show floor!

Thursday, Nov. 1
Job and Internship Fair at the Hyatt Regency Columbus - Union Ballroom

Friday, Nov. 2
Field Day and Tree Care Skills Competition - Goodall Park, Columbus, OH. Refreshments and Lunch provided. Events include:
♦ Tree Care Skills Competition for vocational and collegiate students.
♦ Workshops by Bob Phillips (Former Western Chapter ISA tree climbing champion)
♦ Student Career Days Welcome Reception.

Saturday, Nov. 11
Tree Care Skills Competition Awards Ceremony - TCI EXPO trade show floor.

For more information on attending or to exhibit your company to students at the Job and Internship Fair, call Bob Rouse at the NAA at 1-800-733-2622.
Columbus, Ohio, here we come!
November 1-3, 2001

TCI EXPO 2001:
Exhibitors

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Customized classes and certification in urban forestry and arboriculture, line clearance tree trimming, electrical hazard recognition, equipment operation and general tree care safety at the client’s location or our training facility.

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Aerial Equipment, LLC
Distributor of arborist climbing and rigging equipment, hand tools, cabling, power equipment, Woodsman chippers, Rayco stump cutters, Timberwolf log splitters and full service repair facilities.

Aerial Lift, Inc.
Manufacturer of Aerial Lifts of Milford, Connecticut since 1958. Lifts range in height from 38 to 75 feet.

Agape Designs
Custom Tree Tee Shirts: Visible messages will help to heighten tree awareness when you wear a Tree Tee. What better way to say what you mean than to wear what you believe in! For work or play.

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Altec Industries, Inc.
Altec is exhibiting an LRIII-55, an LB650A and a Whisper Chipper.

Allturnamats, Inc.
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American Standard Company
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The Professional BioBarrier.

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Brush Technology
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As You Like It

By Rick Howland

ike relationships, there's truly a saw for everyone. The power pole saw is a must-have tool for arborists because of its low-profile ability to probe into tight spaces. Its cutting stability – even with longer bar length, gives it versatility from the ground and the air.

Chain bars are typically offered in 8, 10, 11, 12 and 13-inch lengths, with others running to 16 inches.

When an arborist makes a power pole saw selection, the name of the game, in order of importance is: safety, cutting capacity, speed, quality of the cut, durability, ease of use, maintenance and service.

In the early evolution of the tool, the most important criteria was bar length. That was quickly followed by the major difference between products: gas vs. hydraulic power. (Lately, electric versions have appeared sporadically, but for limited and light-duty uses. This is primarily because the battery types have yet to show up, due to capacity limitations, torque and recharge issues. Also, the hardwired types continue to pose source and safety problems, such as access to a power source and the shocking potential for cutting the supply line.

Arguably next on the pole saw's scale of evolutionary importance came the telescoping shaft, followed by practical improvements in the overall units such as dielectric (electrical insulation) properties and interchangeable heads for some.

Each technology comes with its own set of benefits and limitations, yet both continue to undergo advancements in performance and user-friendliness. Ultimately, the arborist is the one who rules, by encouraging manufacturers to offer enough technologies so buyers can select from a host of brand-name leaders, each courting the customer with some very attractive attributes.

Selecting a "chain saw on a stick" flows from two main questions arborists must ask: First, how am I going to use the saw? Second, what does my existing tool inventory look like? Answers to these questions determine specs such as capacity and speed and whether existing tools can support hydraulic power over gasoline.

Gas-powered units remain popular because they are more portable, especially working from the ground and in remote or tight areas where truck or portable hydraulics are hard to access. The result is that gas units are faster to get running and are more mobile, making them free to operate independently of the "hydraulic mother ship."

Hydraulic-powered units, on the other hand (depending on the manufacturer one talks to) are quieter, lighter, tend to last longer, and offer less kickback. But they require a remote, typically low-pressure hydraulic source. And the tethered nature of the technology limits range of movement on the ground and in the air.

Costs between the two can be deceiving. Before making a purchase, remember that overall operating comparisons – not just product capabilities – are a must. Gas-powered units come with their own power source, which you pay for and maintain, but hydraulic tool pricing doesn't factor in the cost of available hydraulic circuits. With gas, long-term durability sometimes falls short of the hydraulic competitor, and gas units are...
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WO# 6707
Pole Saw Checklist
Before you shop for a pole saw, make sure you know what you want in regards to ...

- Interchangeable components
- Options
- Adaptability to/range of hydraulic sources
- Safety features (anti-kickback, dielectric properties, trigger guards ...etc.)
- Self-oiling chains
- Warranty
- Field/shop repair capability
- Fuel economy
- Total operating cost
- Price

Interchangeable components

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- Fuel economy
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On the gas-powered side of the ledger, for example, STIHL offers units such as the Model HT-70 Pole Pruner, a fixed-length pole pruner designed for simple trimming and pruning of trees that can be reached from a bucket or the ground without need of a telescopic shaft. The HT-70 utilizes the popular 25.4cc gas engine found in other units. At just under 12 pounds with its cutting attachment in place, this model offers guide bars of 12 and 14 inches. (Available only in California at this time is the 16.3 pound Model HT-73 Pole Pruner, which features a telescoping shaft that reaches branches up to 15 feet above ground. It also has a California emissions-friendly stratified charge engine that meets CARB II regulations. For hard-to-reach places, STIHL offers the Model HT-75 Pole Pruner. The 15.8 pound HT-75 adjustable shaft telescopes to 11.5 feet.

Redmax Komatsu Zenoah America Inc., headquartered in Norcross, Ga., offers the PSZ2500S, a gas-powered pole saw run by a 25.4 cc clean burn engine. According to company officials, this is the only engine approved for use in California that does not use a catalytic converter. Even so, the engine cuts emissions by up to 73 percent yet improves fuel usage by as much as 34 percent. The engine will soon be found in all Redmax Komatsu power products, according to Diana Matos, marketing manager. The PSZ2500S is available in one length, 7 feet, 9 inches, and weighs 12.3 pounds.

Shindaiwa also offers a pole pruner in its line of equipment, the P230. Its 2-cycle engine is the lightest of the lot, weighing in at 12.1 pounds for the standard unit. With its standard bar length of 10 inches, the engine cranks with a displacement of 22.5 cc power.

The final major gas-powered pole pruner maker is Husqvarna, which in 2000 introduced its new 325P4 pruner with a more powerful engine and softer grip handles. This 8-foot long model is weighted and balanced for pruning up to 13 feet without a ladder. Interestingly, the exhaust on this 11-pound unit is directed behind the user.

Tol Inc. champions hydraulic technology via its lines of ADI Pruning Tools. Scott Hermann, general manager for the ADI line, goes beyond making the argument for hydraulics over gas. He’s unabashed in his view that ADI’s main advantage over others in the hydraulic-
powered chain saw industry is ADI’s utilization of a patented hydraulic system that eliminates heat generation in the tool for both the power saw and lopper lines.

Hermann explains that ADI has resolved the problem of “tools set up in such a way that they generate heat and can become so hot that an operator will have to wear gloves to prevent from getting burned.”

ADI hydraulic-powered units, Hermann maintains, also are durable and less costly to operate because ADI is the only power pole saw on the market that utilizes flexible hoses within the handle. “Competitors use fiberglass tubing. That means if the outer handle or extension tube is broken on a competitor’s model, most likely the tubing and fittings inside also would break, resulting in oil leaks and spillage and a much more expensive replacement cost. “With ADI,” he said, “the flex hose won’t be hurt if the outside gets broken. There’s no oil on the ground, and it’s cheaper to get the repaired units back in the field.”

ADI promotes its tools’ abilities to be run from various hydraulic supplies and that tool heads can be interchanged from chain to circular saw models with only four bolts.

Recent advancements for ADI involve improved chain speed and a 360-degree inline hose swivel. The hose swivel allows an operator to twist the whole tool without binding the hose.

Higher chain speeds mean cleaner and quicker cuts. Hermann says that ADI’s own research within in the past six months shows the company has “one of fastest chain speeds for hydraulic-powered chain saws.”

An international supplier, ADI offers four lengths of pole saws ranging from 132 to 225 cm, as well as a small, towable power unit.

Rival FCI Racine’s claim to fame is its gerotor motor with high torque and a lifetime warranty. Unlike the speed of ADI, this tool is differentiated by its lower speed but higher torque, allowing for heavy cutting at slower speeds, according to FCI. “We’ve had some pretty big operators put all their weight on a running unit, and they fail to bind or slow it down,” said FCI Racine product manager Bob Poirier.

He said all Racine-branded hydraulic tooling comes with this motor and all carry a dielectric rating of 75KV per foot. That means Racine hydraulic tools meet OSHA and ANSI standards.

Like ADI, Racine offers related pole-type cutters like the hook pruner and circular saw.

Racine also offers an anti-kickback chain made possible by a .325 inch chain pitch (popular among utilities or arborists working near conductors) and automatic oilers.

At Racine, all pole saws are discrete (non-interchangeable heads), self-oiling units comprising differing bar lengths, typically 11- and 13-inch with 16-inch specials available. Overall length is 73 to 88 inches.

Poirier champions the fully dielectric rated external fiberglass tube with internal fluidic as contributing to the overall safety of each tool.

Gas or hydraulic, the ultimate benefit of these machines is the freedom to prune more while climbing less. That’s the type of time-saving cost benefit that should be factored into any purchase equation. TCI
Implementing a Drug-Free Workplace

By Brian Farrington

There are two fundamental questions concerning implementing a drug-free workplace – should you do it and how? The subsidiary question is to look at what risks you run in enforcing such a policy.

There are a number of reasons why an employer might choose to have a drug-free workplace. The most obvious one is the government requires it under certain circumstances. For example, in tree care, people who are required to have a commercial driver’s license (CDL) must undergo drug testing. Similarly, companies that work on government contracts over $25,000 must comply with the federal Drug-Free Workplace Act. Although the act does not require drug testing, it does mandate that employers:

- maintain a drug-free workplace;
- have a written anti-drug policy that employees accept as a condition of employment;
- have some sort of awareness or training program for employees;
- must be informed by employees if they have been convicted of a drug offense. Within 30 days, employers have to take the appropriate personnel action or send the employee to a rehab program.

Should you have a drug-testing program?

If employees need CDLs, which is the case with most tree care companies, the answer is yes. What about a program for employees who don’t hold a CDL? Here are some factors that factor into your decision-making.

Reduction of liability

Employees who use dangerous machinery or work in areas where the public could be injured pose significant liabilities. If one of your employees under the influence of drugs drops a limb on someone, you would be in a tough spot. If it turns out that you have absolutely no program in place for detecting and preventing drug use, I can’t imagine a more difficult liability question.

Reduction of costs

Drug use is expensive for employers in terms of absenteeism, breakage, damage and more. Employees who are under the influence of drugs are not very productive. They also interfere with other employee’s ability to do their jobs. They affect morale, and people worry about working with someone who is under the influence.

Employee honesty

Studies show that people who are addicted to drugs almost inevitably steal from their employers. Even if they don’t handle cash, there is plenty of valuable equipment and supplies to take home.

Fitness for duty

You may simply decide to implement a drug-free workplace to make sure your employees are physically and mentally capable of doing their jobs.

Public confidence

This is an underrated reason by most employers. Your business depends on your reputation in the community with your potential customers, other employers, suppliers and with general contractors. If you don’t have a drug-free workplace program, people who have any knowledge of your operations are going to wonder what kind of company you run. A program sends the right kind of message to your community.

Societal issues

You may feel an obligation or willingness to contribute to the overall good of society by helping fight the problem of drug abuse. That is an individual decision that everyone can make.

Drug testing

It is relatively easy to decide to implement a drug-free workplace program. It is much harder to decide to implement one that involves drug testing (beyond those covered by U.S. Department of Transportation regulations).

Beyond federal law covering CDLs, each state has laws that regulate testing. Two states, Massachusetts and California, have individual rights to privacy under their state constitutions. Their courts are very strict in enforcing those rights. Employers have to balance a right to privacy with some pretty strong reasons for invading that privacy.

Most other states have laws that we would call permissive. They allow drug testing and they reduce liability. If you have a drug-testing program, in many states it will reduce your work-
ers' compensation insurance premiums, because it would restrict the employee's entitlement to workers' compensation benefits if he is injured on the job under the influence of drugs or alcohol. It also may restrict or eliminate eligibility for unemployment benefits if he gets fired because he has violated your policy. These are all pretty good reasons for wanting to have a drug-free workplace program that includes testing.

Drug-testing laws differ a lot from state to state. Procedural laws in various states cover the content of the policy and what you have to tell employees. They may go into great detail about split samples, how to seal the samples, what sort of lab you have to use, and what sort of procedures the lab has to follow. It may cover the timing, how often you can do it and when. It may give them a right to a retest and may tell you that you cannot discipline them based on a positive result unless you retest the sample. It may even tell you that they have a right to reinstatement if they take certain steps, such as going through rehabilitation and staying clean for a stated amount of time. You also can't make an employee pay for his or her tests. State law is very important, and you have to make yourself familiar in every jurisdiction in which you operate. Most of the questions involving the conduct of the test can be handled by the company you hire to perform the tests, but I would recommend hiring a labor law attorney to review your procedures for when and how someone is required to submit to a test.

How to implement a drug-testing program

Below are some of the things that the law may require or you should think about anyway. If you are going to have a program that includes testing, these things are absolutely critical. I don't care whether you are covered under DOT regulations or not, you ought to use a lab that has been certified by DOT to provide drug testing.

Chain of custody

This is principally the responsibility of the lab. They will tell you exactly what to do from the moment that the sample is taken. You have to be able to demonstrate to the courts, if challenged, every step of the chain of custody.

Split sampling

I strongly encourage clients to do split
 Civil rights laws

You might have a situation in your company where you test an employee because you think he is acting strangely. You have the authority under your drug policy to test based on "reasonable suspicion."

What if the employee you test happens to be Hispanic? The next employee that you test for the same reason also happens to be Hispanic and the same with the third employee. It does not matter whether any of them turn out positive or negative. That third employee, who might have been fired when he tested positive, heads down to the Equal Employment Opportunity Commission (EEOC) and tells them his employer uses drug tests to get rid of Hispanic employees. The EEOC looks at your records and notices that every employee tested lately has been Hispanic.

The EEOC is going to look around your facility and see a lot of white male employees. It is real easy for them or any state anti-discrimination agencies to tell you that you are stereotyping Hispanic employees as more likely to use drugs. Therefore, you are quicker to test these people than you are to test your white employees. How do you defend against that scenario? The best way is to train your supervisors how to recognize the symptoms of drug use. They must document their reasons for suspicion. One of the best sources for training is your local police department. Many have community officers who come out and train people for free. I would love to be able to defend a case where I could say, "No, your honor, we didn't have a problem with discriminatory testing. The employee exhibited the following symptoms of drug abuse, which my client's supervisor recognized after training from our city's

CDL Drug/Alcohol Testing

The licensing provisions in Part 383 of the Federal Motor Carrier Safety Regulations (FMCSRs) are intended to help reduce accidents by setting standards that:
- Require commercial drivers to be properly qualified;
- Require Commercial Driver's License (CDL) drivers to hold a single valid license;
- Disqualify drivers who do not operate commercial motor vehicles (CMV) safely.

The DOT regulations have provisions to help assure that drivers currently disqualified are prevented from obtaining a CDL. Employers can obtain access to license records through their state's vehicle licensing agency.

Vehicles requiring CDLs

Drivers must hold CDLs if they operate in interstate, intrastate, or foreign commerce and drive a vehicle:
- With a Gross Vehicle Weight Rating (GVWR) or Gross Vehicle Weight (GVW) of at least 26,001 pounds, whichever is greater, or a lesser GVWR or GVW that the Secretary of Transportation prescribes by regulation, but not less than a GVWR of 10,001 pounds;
- Designed to transport at least 16 passengers including the driver;
- Transporting a quantity of hazardous materials requiring placarding.

Because the CDL is a state-issued license, you should check with appropriate state officials regarding particular license classes and specific exemptions.

Drivers required to have a commercial driver's license (CDL) are subject to the controlled substance and alcohol testing rules. The testing requirements are spelled out in Part 382 of FMCSR.

Types of alcohol and controlled substance tests

Pre-employment: No employer shall allow a driver to perform a safety-sensitive function until the employee has received the negative controlled substance test result.

Post-accident: As soon as practicable following an accident involving a commercial motor vehicle operating on a public road in commerce, the driver must be tested if:
- He/she was performing safety-sensitive functions with respect to the vehicle, if the accident involved the loss of human life;
- He/she receives a citation under State or local law for a moving traffic violation arising from the accident, if the accident involved bodily injury to any person who, as a result of the injury, immediately receives medical treatment away from the scene of the accident;
- One or more vehicles incur disabling damage as a result of the accident, requiring the vehicle to be transported away from the scene by a tow truck or other vehicle.

Random: Companies are to randomly test drivers at a minimum annual percentage rate of 10 percent of the number of drivers for alcohol testing, and 50 percent for controlled substances testing. The random alcohol test must be performed immediately prior, during or immediately after a driver is about to, or has performed a safety-sensitive function as defined in Section 382.107 All drivers must have an equal chance of being selected.

Reasonable Suspicion: An employer shall require a driver to submit to an alcohol and/or controlled substance test if he has reasonable suspicion to believe that the driver has violated the prohibitions concerning alcohol and/or controlled substances. The employer's determination of reasonable suspicion must be
Random testing does not carry these pitfalls, as long as you can certify that it is truly random. Post-accident and post-incident testing is also clear of bias charges.

Americans with Disabilities Act (ADA)

The ADA says that you cannot discriminate against qualified individuals with a disability. A disability is defined as a physical or mental impairment that substantially limits one or more of a person’s major life activities. Drug addiction and alcoholism are considered disabilities under the law.

That doesn’t mean employees get a free ride, just that employers cannot discriminate based on a disability. You can hold people with a disability to the same standards of behavior and performance as every other employee. If you have somebody who is currently using illegal drugs, such a person is outside the protection of the ADA. You can fire them without any procedural issues. ADA gives you broad latitude when they are using illegal drugs.

The ADA protects recovering addicts, who are defined as people that are currently not using illegal drugs. That means that there has to be some reasonable evidence that the person has not used drugs in quite a while and preferably has been through a rehabilitation period before he or she can claim the status of being a recovering addict. Employers cannot refuse to hire applicants who have been through drug rehabilitation. That would be discriminatory. The ADA does not limit testing. It says

based on specific, recent, describable observations (i.e., not feelings or hunches) concerning the appearance, behavior, speech or body odors of the driver. The required observations shall be made by a supervisor or company official who is trained in accordance with 382.603.

Return-to-Duty: Before a driver returns to duty requiring the performance of a safety-sensitive function after engaging in prohibited conduct involving alcohol or controlled substances, the driver has to undergo a return-to-duty alcohol test with a result indicating an alcohol concentration of less than 0.02, or the driver has to undergo a return-to-duty controlled substances test with a result indicating a verified negative result.

Follow-up: If a substance abuse professional has determined that a driver needs assistance for the misuse of alcohol or controlled substance, the employer must ensure that the driver is subject to follow-up testing. A minimum of six tests must be conducted in the first 12 months, and the driver may only be subject to this test for a maximum of 60 months.

Record-keeping

All required records have to be maintained in a secure location with limited access, and be available for inspection by an authorized representative of the FMCSA. The following is a records retention schedule:

5 Years
- Alcohol test results indicating a breath alcohol concentration (BAC) of 0.02 or greater
- Verified positive drug test results
- Refusals to submit to required alcohol and drug tests
- Required calibration of evidential breath testing (EBT) devices

2 Years
- Records related to the collection process and required training
- Negative and canceled controlled substance test results
- Alcohol test results indicating a BAC of less than 0.02

Inquiries to previous employers

The employer, with the driver’s written authorization, must inquire about the following information on a driver from the driver’s previous employers for a period of two years preceding the driver’s date of application:
- Alcohol tests with a result of 0.04 alcohol concentration or greater
- Verifiable positive controlled substances test results
- Alcohol test results indicating a breath alcohol concentration of less than 0.02

Driver training

Every motor carrier shall provide educational materials explaining the requirements of the regulations as well as the employer’s policies regarding alcohol misuse and controlled substances abuse. At a minimum, detailed discussions should include:

- The identity of the person designated to answer drug and alcohol questions;
- Which drivers are subject to these requirements, what behavior is prohibited, and a clarification of what a “safety-sensitive function” is;
- The circumstances under which a driver will be tested, and the procedures that will be used for testing;
- Explanations of the requirement that a driver submit to the testing, as well as what constitutes a driver’s refusal to submit to testing;
- The consequences for drivers who have violated the testing requirements;
- Information concerning the effects of alcohol misuse, and controlled substances abuse on health, work and personal life.
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because he or she has a hangover can be fired because he or she is always late.

**Family Medical Leave Act (FMLA)**

Employers with more than 50 employees are subject to the Family Medical Leave Act, which entitles covered employees to up to 12 weeks of unpaid leave for a serious health condition with a right to return to their jobs. What qualifies as a serious health condition? It is any impatient treatment or any medical condition that incapacitates them for more than three days provided that they have seen a doctor and they are under a continuing regiment of medical care.

How does this work? An employee walks into your office and tells you he has a drug problem and is going to check into a rehabilitation facility for six weeks. You don’t have to pay him, but he has an absolute right to return to his job. If you fire him first for lousy performance or for testing positive, then you do not have to abide by those rules. But if the employee comes to you first, then FMLA will protect that employee.

While that employee is out on rehabilitation, you have to continue health benefits. Never let any employee’s insurance lapse while he is out on the FMLA.

**State contract and tort law**

Contract damages are typically lost wages and reinstatement. Tort damages can total millions. I always worry about employment torts. The general rule in the United States is that employment is “at will,” meaning that employees can be fired at any time for any reason. There are rare exceptions, but most employers shouldn’t have to worry about them. Here are the ones that I worry about.

**Negligent testing**

Normally, when an employee has a claim against his employer for bodily injury it is covered by workers’ compensation. What if they have a claim against you for injury to their reputation? What if you say an employee has failed a drug test but it isn’t true? If you are negligent in the way that you test, employees can sue. There are four elements to negligence. There must be a:

1. duty of care to a foreseeable plaintiff;
2. breach of that duty;
3. causation of damages;
4. damage to the individual’s reputation in the community.

You have a duty of care that you act in the way that a reasonable prudent employer would act in administering your drug-testing program. There could be negligence with the procedure (maybe it wasn’t administered properly), or there could be negligence in the interpretation of the results. To avoid negligence, rely on the testing company and the person with the degree. A reasonable and prudent employer would not try to interpret the results himself; allow a doctor to do it.

**Emotional distress**

The intentional or negligent infliction of emotional distress can be another lawsuit filed against you. Essentially, if your conduct is outrageous and you treat an employee so badly that no one in a civilized society should have to put up with this kind of behavior, then that would be infliction of emotional distress. The best example that I know was a case in Texas where the employer decided that he wanted to get rid of an employee. He put a bunch of checks in her purse and when she left at the end of the day, he had security stop and arrest.

In the drug-testing arena, it would be very difficult for me to imagine outrageous conduct other than public
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Defamation

If you announce to the world, or other employees, or anybody else that an employee has a drug problem – and it turns out you are wrong – you have some major liability issues. Defamation is a statement that a jury would view as slandering. Normally a statement like that has to cause actual damages, but if it injures a person’s reputation or accuses him of a crime, then he doesn’t have to show damages.

How do you avoid the situation? First, the odds are high that a good lab can establish that its testing positive was due to medical fact, which is a violation of privacy. You could also be sued for making somebody appear to be a drug addict in the eyes of the community. The point is that you must keep information confidential. Defamation and privacy issues are your biggest concerns in drug testing.

Finally, the ADA requires that you keep medical records separate. Any personnel records with medical information, whether it be an insurance claim form or a workers’ compensation accident report, has to be kept in a separate file away from normal employment files. And it must have limited access. Only the human resources and supervisory people should have access to the files.

Implementation

You have learned about what kinds of benefits you can maintain. You have learned about what kinds of laws govern. And you have learned about what kinds of actions people can take against you. What do you have to do to implement a drug-free workplace policy? First, define the behavior. What is it you are going to regulate? The use of drugs? Possession? What drugs? What about alcohol?

Your policy must first define exactly what behavior you are going to prohibit. Usually, policies cover possession, under the influence, use of, and everything else in those categories. Second, choose your monitoring technique. Bio-chemical, psycho-motor or monitoring. Bio-chemical is testing of urine, blood or hair samples. When people are afraid of putting employees through bio-chemical testing – or they don’t want to spend the money – they may simply test whether functioning is impaired.

A variety of tests exist, including giving the employee a list of numbers to memorize and read back to you. There is pattern-recognition testing, where you see if the employee can recognize a pattern. There is a short-term memory test. There are also physical tests you can put them through.

Obviously, you have start with experts to implement a plan such as this one. The biggest advantage of this type of plan is that most of the things that people can sue you for don’t include this type of testing. The biggest drawback to this plan is that you won’t find out what it was that caused them to have problems with the test. It could be another physical condition. A person who can’t recite a sequence of numbers is not necessarily a drunk or a drug addict. These types of tests are an interesting alternative to bio-chemical testing, but unless they are done under the correct circumstances, I am not sure they are anywhere near as effective.

The first part of implementing a drug-free workplace policy is to define and then find the behavior that is unacceptable. The second is to choose the technique. The third is to determine the basis upon which you will test. Pre-employment screening is an easy one. There is almost no privacy interest implicated in pre-employment testing. Post-employment testing is more difficult in a lot of states.

The easiest tests to defend are tests for cause or after an accident or incident. The ones that are a little bit more difficult to justify are tests done at regular intervals or random testing, which falls under the highest level of scrutiny. People look at you carefully when you test people for no reason at all. I am not saying you can’t do it, I am just saying that is where you have to be careful. You can’t defend yourself...
Offering References

What happens if you have an employee who tests positive and leaves you, and a competitor asks for a reference? Do you mention the drug use?

No. Never give any reference other than dates of employment, name, rank and serial number. Former employees can't sue you for giving out their dates of employment. They can sue you for giving bad references or for even saying that you would not rehire them. You would probably win in court, but it will cost you $30,000 to $50,000 in legal fees to get to the point where you win. Give a neutral reference only.

Here is an extreme example. Allstate Insurance Company fired an employee because he was nuts. They found out that he had a gun in his briefcase. He told people that he was an alien from another planet and he had a list of co-workers that he wrote awful things about next to some of their names. After they fired him, he went to work for Fireman's Fund Insurance. At Fireman's Fund, he shot a bunch of people and killed himself. The survivors sued Fireman's Fund for hiring him, but they also sued Allstate for failing to warn. Allstate won. I know of no case anywhere in the country that found you have a duty to warn the next employer. If I had a situation where there was a real serious problem, I might discuss it one on one with my lawyer to see if there might be some way to pass the information on. I would be very reluctant to do it, and there are very few, if any, circumstances I can imagine where I would give nothing but a neutral reference. A neutral reference is never a defamatory statement.

when it comes to the operation of hazardous equipment as part of a crew. It is less easy to say the secretary or sales manager needs to be tested.

The last question you need to answer is whether you should allow rehabilitation. Some companies do and some don't. What are the factors to be considered? The first is the need to save a good employee. You might have a great employee who has a problem. Especially in today's economy where it is extremely difficult to find and keep good employees, you both could benefit with a rehabilitation plan.

On the other hand, rehabilitation doesn't always work the first time. At some point, you have to have a policy that says enough is enough. There has to be a point in which you can't condone the revolving door. Rehabilitation gives users more FMLA and ADA rights than they had to begin with.

This is going to seem extremely cynical, but some companies in states that require rehabilitation for positive tests have decided not to have a drug-testing program. When you put somebody through rehab, you actually increase the claims that they have against you. Under the ADA, a person who is currently using illegal drugs is not protected. A recovering addict is protected. You take somebody that you can fire under the ADA and you turn him into somebody who at least has a potential defense under the ADA or a right to unpaid leave under Family Medical Leave Act.

I know that the politically correct thing to do is to push for rehabilitation, but I would think very carefully before implementing a drug-testing program that would require rehabilitation.

Summary

There are a number of reasons why an employer might choose to have a drug-free workplace. The government might require it, or you, as the employer, might decide that drugs and alcohol have no place in your business. Whatever the reason, bear in mind that employees have rights under state and federal law. Remember, also, that the penalties for not protecting those rights can be steep. The best place to start is with an attorney who is familiar with the intricacies of labor laws in your state.

Brian Farrington spent 12 years with U.S. Department of Labor Wage and Hour Division. He was the assistant district director of the Dallas District Office, directly in charge of the wage and hour enforcement in the Dallas area. He supervised 5,000 investigations. Since 1989 he has worked for Harry Weisbraud Associates assisting employers with a host of employment issues.
Generational Customers

By Robert Tucker

How can we stay on top of generational changes, and how can we profit from them? By doing a better job of marketing to generational customers.

Most commercial tree companies use a variety of marketing vehicles – Web sites, cable television, radio, newsletters to current customers, and educational semi-

What do they want and need?

How do you market to each generation?
nars. All those things are great. But if you think about it, there are five basic generational cohorts in our society today. Each of these generations manages differently and leads differently based on who they are, how they came of age, and where they are in their lives. I will review each generation, but focus most attention on the baby boom generation because that’s where the numbers are. This is your customer base. They’re going to be around for a while, and they are changing, adapting and moving. We have to keep up with them.

There are some simple do’s and don’ts with the different generations. You need to develop generational sensitivity. If you don’t use the words Mr. or Mrs. when talking to somebody 75 or older, you are making a mistake. If you waste the time of someone from the baby boom generation, you are making another mistake. They are time-starved to the highest degree. They are trying to do everything and they can’t; therefore they want to shift work off to you. Their entire focus is going to be on figuring out ways to shift their work onto others so they can get on with their lives.

Where are these five generations today? What do they want in terms of products, service and services?

Let’s begin with the GI generation, age 75 or over. What do people from this generation want from your tree care company?

- Trust with a capital “T.” Trust is absolutely critical with this generation.
- Value. They want a lot for that dollar.
- Advice. They want to relate. They are not concerned about the clock. They may have to ask a question four or five times to really get it straight. Where we have young people on the phones or on crews trying to relate, they have to take the time.

The silent generation is composed of the folks between 55 and 75 years old. They are significantly different, since some are still in the workforce while others have retired. They are concerned about maintaining the status of their home and the proper treatment of their property. They want quality service and can be a bit skeptical because they want to make sure you are doing the job correctly. They may be reluctant to spend money on tree care because their parents cut down their own trees. This generation holds a lot of this nation’s wealth.

The boomer generation is starting to age. Every eight seconds another boomer turns 50. This is the most educated and affluent generation in the nation’s history. Many if not most have a college degree. They are in their prime earning years. These people are in management. They are accumulating wealth in anticipation of retirement. They are time-impo\n

vation. Their “things to do list” far exceeds the time that is allotted for a 24-hour day. Leisure time for this group is down by 30 percent, according to people who study that sort of thing.

Generation X, age 26 to 37, counts 17 million Americans. They are setting up households and starting to buy. This group is your growth opportunity. This generation is going to be calling you and experiencing you for the first time. It will be interesting to look at how they get attached to the tree care industry.

Let’s contrast what we were saying
about the GI generation and the silent generation with folks from generation X. What are you finding? In some parts of the country we are seeing instant millionaires among this generation. Some are literally leapfrogging over previous generations in terms of affluence. How do they want to be treated and what is different about them?

We spend a lot of time fixing what they try to do themselves. They expect free information from people, because they are used to getting free information in the Internet. They have been very difficult for marketers to get a handle on. We call them X, and we ignored them for years because the boomer generation was so large and attractive. Only recently have we begun to see the potential with the X generation.

Generation Y probably isn’t among your customer base yet. They number 60 to 65 million born between 1976 and 1994, but most are too young to have set up households in the suburbs. They are the first fully interactive generation. Keep your eyes on this generation for future marketing ideas.

Marketing to boomers

In terms of products and services, boomers want a nice home in a secluded area. First and foremost, this generation wants your tree care business to make life easier for them – or else. They won’t even stay on hold for 30 seconds to learn about your services. They will move on.

We all know the power of convenience. If your tree company is in the suburbs of a large metropolitan area, do a convenience audit of your company. Where are the pressure points where the customer has to wait on you instead of you waiting on the customer? Where does the customer get frustrated? Get your staff involved and sensitize your people – especially those taking the calls and doing the scheduling. Sensitize them to the generational cohorts that they are dealing with daily.

If you have time in America today, then you probably don’t have money. If you have money, then you probably don’t have time. If you have both, then you probably won the lottery.

Tree companies often deal with an affluent population that has time poverty. Any time that you can talk in terms of timesaving, or any time a fully staffed tree care company can immediately respond to a need, that will be a competitive advantage for your business. You must be able to mobilize faster to meet the demands of these customers. They want to get it done now, rather than later. Survey after survey of service companies similar to tree care have found that the customer’s biggest pet peeve is making them wait – on hold ... at their
house for a consultation ... while having an invoice corrected.

Boomers like things that are unique. Get your staff together and ask them what it is that you do that is unique. Maybe it's that you have a specially trained person doing a certain service, or maybe you have a service that nobody else offers. With the boomer generation, this sort of thing really gives you a leg up in the bidding and estimating process. Anytime that you are able to differentiate, their ears perk up. If you go out and tell them that you provide the same exact service as everybody else does, and for the same price, you won't have a chance. This generation has been raised on having a competitive advantage and showing uniqueness.

Boomers also value personal enrichment. How can you tap into that desire? From a customer's perspective, what is personally enriching is learning something about the trees on their property. The clients want to be able to talk knowledgeably about the trees on the property with friends and neighbors. But time is short, so the fastest way to learn is to ask a tree care specialist. That is personal enrichment. This type of marketing works well when someone has just bought a new home and wants a specialist to come out and identify the different types of trees. Will it take some of your valuable time? Yes, but it will also help establish a long-term relationship with a new homeowner in your town.

Boomers value status. You see it in the cars they drive and the coffee they drink. How can you improve the feelings of status of your customer? These folks are very competitive and they want their yards to be maintained so everybody notices and comments. Convince them that the value of their house is determined to a significant degree by the trees on their property. Status is also derived from hiring the most professional-looking tree care company in town.

This is a conflicted generation. It talks about the environment, yet drives huge SUVs that guzzle gas. They profess to be concerned about materialism, but they spend more than their parents could have imagined.

How do you reach them? Unconventional means, such as involving yourself in the community, advertising on local cable, or even a small ad in the local theater can be a wise investment. You have to think about where these people are. You may or may not like opera or the symphony, but that might be the perfect place for you to advertise because that is where your potential customers go.

In one sense, marketing to boomers is easier than marketing to succeeding generations because they are the last monolithic generation with common expe-
The mass media has splintered into a thousand sub niches and sub markets. We are all watching different channels and listening to different music depending on who we are and what we like. Seventy percent of the country isn’t watching CBS on Saturday night anymore.

The more you track this generation and try to anticipate where it is going the better off you will be. The boomer generation will live longer and own property for much longer than previous generations. You’ll be selling to these people for a lot longer. This generation, because they have not saved and put money aside, will have to work longer.

A Roper Starch study says that 84 percent of boomers expect to work in retirement, or to mix the two.

The boomer generation is the most critical generation for you watch in order to succeed in business over the next 20 years. Begin to take note when you are talking to people of boomer age. Conduct some surveys with current customers of boomer age. Tune in to more of their likes and dislikes. Obviously you will find a great range of responses, but you will also inform yourself. Then take your findings to your staff. Figure out how you want to treat boomers. Try some different things in how you market to the different generations.

Robert Tucker is an innovation expert whose clients include Kraft, Maytag, Hewlett Packard and Duracell. He is the author of Customer Service for the New Millennium, Winning the Innovation Game, and the recently re-released Managing the Future. This article is excerpted and adapted from a presentation at TCI EXPO.
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... continued on page 68
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...continued on page 72
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According to a story in the Daily News of Newport News, Va., that city’s vice mayor moved to stop a tree care company from operating out of an industrial park where it has been located since 1995 because neighbors had reportedly complained of loud noises.

The company, Hubbard Brothers Tree Service, had received a variance to set up shop in the park, which abuts a residential neighborhood ironically known as Green Oaks. A slew of complaints from a small number of residents have been levied, most generated by a stump grinder and wood chipper used on the site. The controversy is nothing new to Hubbard, which was the focus of a special grand jury called in 1998. That grand jury refused to order a trial on charges that the company and its sounds were a public nuisance.

The company’s attorney says the tree company plans to stay put: “It’s a perfectly legal operation,” he told the newspaper.

Maple Captures Mayor’s Fancy

Most big-city mayors talk the talk about re-leafing their cities. For instance, the city council in Austin, Texas, is pushing to plant more trees as a way of cooling off the summer swelter. But Seattle, Wash., Mayor Paul Shell put his own money where his mouth is. Shell plunked down $35,000 for a lace-leaf Japanese red maple that he saw while strolling through the Northwest Flower and Garden Show in his city, according to the Associated Press. Though the initial layout came from the city’s till, Shell said he plans to raise the money to pay Seattle back through private donations.

Shell said as soon as he saw the tree he knew it belonged somewhere in the city’s new $225 million Civic Center, where a new city hall is being built. The 12-foot-tall tree is said to be 80 years old.

“I saw it as a great opportunity for a gift tree to the city,” Schell said.

What Would Martha Say?

Greenwich, Conn., is well known as one of the wealthiest towns in the country. And the residents there have no shortage of opinions. So it’s probably no surprise that like some of the town’s residents, “good life” mogul Martha Stewart is one local celebrity who regularly raises questions about the line-clearing work being done by the local utility, Connecticut Light & Power.

Residents in Greenwich, as in many other cities and towns, complain that tree trimming crews hired by the utility are cutting too deep. Greenwich is believed to have more street trees per mile than any other community in the state.

According to a story in the Greenwich Times, Peter Malkin, founder of a group called Greenwich Green & Clean, crews regularly “overcut, overprune and take down trees that are not necessary to take down.”

Town officials say the situation is improving, but acknowledge that more communication is needed to help residents understand the need to keep power lines clear—and to find common ground.

“We have people who want to see virtually all trees preserved and none removed until they fall down,” said one utility official. “They fail to look at the liability involved.”

Hack Attack, New York Style

Billboards and trees don’t exactly mix. But there are few places where billboard space is as valuable and the few existing trees as precious as in New York’s Times Square. So in a way, the inevitable is what happened when a tree crew (following orders from a billboard owner) sharply pruned back and topped several trees blocking the view of a billboard.

According to the New York Post, whose pun-inclined writers had a field day with the story, city officials were “barking mad” about the unauthorized pruning, which was done to make way for a Comedy Central ad promoting a show called “That’s my Bush,” which has nothing to do with trees but is a parody of the current president.

Anyway, the city’s Parks Commissioner pledged to enforce a law, levying a $10,000 fine against the culprits. He called the topping of city trees “corporate vandalism.”
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TREE CARE INDUSTRY - AUGUST 2001

83
Seeing is Believing

By Eric Meacham

Well, sometimes you just have to wonder if a tree climber's story isn't a slight exaggeration of the truth (sort of like, "I once caught a fish..."). To tell you the honest truth, I've seen some things that I wouldn't quite believe if I had not seen them with my own eyes!

For example, one of my customers agreed to a fair price that I had given him to take down a red maple near his driveway. He had just purchased the house, and this tree was in pretty rough shape. The top was dying back and it had two main leaders coming out of a very large bulge about 2 feet above the ground. In a couple of hours, I was down to that large bulge about 3 feet in diameter. I stump cut it and there it lay, about 4 feet long. The owner wanted the firewood, so I cut off a 16-inch log. The large bulge looked kind of strange, but I commenced cutting it in half anyway to make two more 16-inch logs for firewood.

About 8 inches into the cut I saw sparks coming from something within that large bulge. My chain was dulled badly, so I put on a sharp one and commenced cutting from the opposite side. About half way through, there were sparks again.

I put on the third chain and cut in from one of the sides to finish the cut. You guessed it — sparks again! Now I figured whatever was in the heart of this old red maple had to be pretty big. It couldn't be a spike or a nail. Putting on the fourth chain, I made a new cut about 4 inches lower — sparks again! Fifth chain, 4 inches higher than the original cut— sparks again! The sixth chain went back in the original cut, and seconds later it too was dulled. Now I was puzzled.

I could go on to tell you about the red oak that I discovered with a large hive of honey bees in it; or the time I found carpenter ants falling out of the end of a branch I had cut about 60 feet off the ground; or about my good neighbor Bill who built an addition on his house right around a mature silver maple. I'll stop here before I'm accused of telling "old fishing stories." Be aware, however, you never know the story a tree might be hiding in its heart!

Eric Meacham is the owner of Bees 'N' Trees in Cohoes, N.Y.
In the real world, one requirement that never changes is finding ways to help your crews work more safely. That's why Altec tree care equipment is built rugged, reliable and designed with integral safety features. Our complete line of aerial devices and wood chippers is highlighted by our newest machine – the Altec LRV60. It will help your crews work smarter and more efficiently. This unit combines 65 feet of working height and smooth maneuverability with the lowest cost of equipment ownership in the industry and unmatched financing options. For tree care units that help you work safer and smarter, call the company that builds them – Altec.
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World's Largest
Tree Care Expo
Columbus Ohio
November 1-3, 2001
Greater Columbus Convention Center
Presented by the National Arborist Association
Welcome to the 12th annual tree care expo

The sky is the limit with what you'll learn from this year's exciting program. Over 150 exhibitors under one roof, bringing you cutting-edge tree care equipment, technology, supplies and services.

Why should you attend?

SMART MANAGER and EXPERT PRACTITIONER seminar series allow you to customize your educational experience to fit your needs - with several sessions offering ISA continuing education units.

SAVE, SAVE, SAVE ... Take advantage of the educational seminars. If you are attending 5 or more seminars ... BUY GOLD!

Registration Procedure

Register before the Early Bird deadline of Oct. 5 to receive discounts on trade show admission and educational seminars.

All TCI EXPO admission badges will be mailed to attendees who register prior to Oct. 5, 2001. Individuals registering after Oct. 5 must stop by the pre-registration desk located outside of Hall E to pick up their admission badge.

Please Note:

We encourage you to bring your employees to TCI EXPO 2001. TCI EXPO is a valuable educational experience.
Your TCI EXPO 2001 Exhibitors!

ACRT, Inc.
ADI Pruning Tools by TOL Incorporated
Aerial Equipment, LLC
Aerial Lift, Inc.
Agape Designs
Alliance Equipment Company, Inc.
Altec Industries, Inc.
Alturamat® Inc.
American Arborist Supplies Inc.
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American Standard Company
Alliance Equipment Company, Inc.
ArborQuip/MTI
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Bahco Tools Inc.
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Bandit Industries, Inc.
Bartlett Manufacturing Company
The F.A. Bartlett Tree Expert Company
BBA Nonwovens/Reemay Inc./Bio Barrier
John Bean Sprayers/Durand-Wayland, Inc.
Ben Meadows Company
Big Foot Industries Incorporated
Bishop Company
Blue Ridge Arborist Supply
John Brown & Sons Inc.
Brownwood Sales
Brush Technology
Buccaneer Rope Co.
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C.A. G. Corporation
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Cargotec Inc.
J.P. Carlton Company
Christmas Decor & Nite Time Decor
Climb Axe, Ltd.
CNA Commercial Insurance
Columbian Specialty Products
Commercial Cutters Direct
Concept Engineering Group, Inc. (CEG)
Corona Clipper
Creative Automation Solutions
Creative Sales, Inc.
Cutter’s Choice
Davy Tree Expert Co.
DICA Marketing Co.
Doggett Corporation
Dokcikl Industries, Inc.
DTN Weather Services
DUECO, Inc.
Enginaire
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Engine Distributors, Inc.
Excalibur DMM
FAE Forestry Mowers/DCL Sales Inc.
Fanno Saw Works
FCI-Racine Hydraulic Tools
Fecon, Inc.
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Forestry Equipment of Shelby
Forestry Suppliers, Inc.
Fred Marvin Associates
Future Forestry Products Inc.
G & A Equipment, Inc.
Green Manufacturing, Inc.
GreenIndustryOnLine.net
GreenPro Services
Growtech, Inc.
Growth Products, Ltd.
Gyro-Trac, Inc.
The Hartford
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Husqvarna
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Monterey Lawn & Garden Products, Inc.
Morbark, Inc.
MTI Insulated Products Inc.
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Northeastern Associates
Payeur Distributions Inc.
Peavey Mfg. Co.
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Pinnacle Concepts Inc.
Planet Green Inc.
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Plastic Composites Corporation
Polecat Industries, Inc.
Power Great Lakes, Inc.
Power Planter, Inc.
Practical Solutions, Inc.
Praxis
Preformed Line Products
Progress Leasing Company
Rainbow TreeCare-Scientific Advancements
Rayco Manufacturing, Inc.
Rear’s Mfg. Co.
Redmax-Komatsu Zenoah America Inc.
Reliable Equipment & Service Co., Inc.
ROOTSInc
Royal Truck & Equipment, Inc.
Salsco, Inc.
Samson Rope Technologies
Schoedor Truck Body & Equipment Co.
Sherill Inc.
Sierra Moreno Mercantile
Simonds Industries, Inc.
Southco Industries, Inc.
Southeastern Equipment Company
STIHL Incorporated
STUMP REMOVAL INC/KAN-DU
Sunrise Concepts Inc.
Tamarack Clearing Inc.
Tanaka Power Equipment
TereX Telelect, Inc.
Tilton Equipment Company
Timberwolf Manufacturing Corporation
Tree & Landscape Equipment Trader
Tree Line Supply Co.
Tree Tech Microinjection Systems
TreePro Direct™
Vermeer Manufacturing Company
VERSALIFT, TIME Manufacturing Co.
Voss Signs, LLC
Wall Industries
Weaver Leather, Inc.
Wood-Mizer Products, Inc.
Wood/Chuck Chipper Corporation
Woodman, Inc.
Zenith Cutter Co.
WIN ArborBucks!

There will be two drawings each day on the trade show floor for at least $250 in ARBORBUCKS. Drawings will be held on Thursday and Friday at 12:00 noon and 2:00 pm and Saturday at 11:00 am and 1:00 pm.

ARBORBUCKS can be used the same as cash to make purchases at the show from participating vendors. There is no cost to enter the drawing. Just complete the survey found in the center of your pocket program.

Winners must be present to win and receive ARBORBUCKS cash!

ArborBucks Participants

American Arborist Supplies Inc.
Bandit Industries, Inc.
Blue Ridge Arborist Supply
Concept Engineering Group
Creative Automation Solutions
DICA Marketing Co.
Future Forestry Products, Inc.
Horticultural Alliance, Inc.
Karl Kuemmerling Inc.
Leonardi Teeth
Minnesota Wanner Company
Morbark, Inc.
National Arborist Association, Inc.
Northeastern Arborist Supplies
Peavey Mfg. Co.
Pigeon Mountain Manufacturing Industries

and more ... see final list at registration

Tree Demonstration Area

Visit the Tree Demonstration Area on the trade show floor for scheduled demonstrations of various arborist skills. Upon completion of a scheduled demonstration, ISA Certified Arborists will become eligible to receive ISA re-certification credits by filling out a demonstration attendance form.
Two Special Workshops

TCI attendees are invited to participate in one of two full-day workshops on Wednesday, Oct. 31, 2001.

Limited enrollment. Early registration is encouraged.

Professional Practitioner Workshop

Morning Session 9:00 am – 12:00 pm

Working with the 9th Guide to Plant Appraisal – Russ Carlson
Room E 172
Greater Columbus Convention Center

This workshop is intended to provide you with the information you need to properly determine the size, species, condition, and location factors that influence the value of plants. You can use this information to provide plant valuation for plant casualties, insurance purposes, real estate transactions, plant condemnation actions, and tree inventories.

Afternoon Session 1:00 pm – 4:00 pm

Implementing PHC – Dr. John Ball
Room E 172
Greater Columbus Convention Center

The theory of Integrated Pest Management or Plant Health Care (PHC) is proven, but when challenged by the realities of a competitive market and demanding consumers, it can be difficult to put PHC into practice. This renowned expert in both theory and practice of PHC can show you how to make your service profitable.

Business Managers’ Workshop – In Partnership with The Hartford

Morning Session 9:00 am – 12:00 pm

Hiring and Retaining Talented Employees in the New Millennium – Jean Seawright Pileggi, CMC
Room E 170
Greater Columbus Convention Center

The tight labor market has empowered employees to demand and expect more from the work environment. How can you win this war for talent? An expert in this area, Jean Seawright Pileggi will unlock the mysteries of effective hiring and retention. Learn tips, ideas, and absolutes that will help your business compete in the 21st century labor market.

Afternoon Session 1:00 pm – 4:00 pm

Strategic Planning – Ed Wandtke
Room E 170
Greater Columbus Convention Center

Where is your company going? How do you plan on getting there? When is the right time to start planning? In this seminar Ed Wandtke will cover these important questions and show you how to develop a strategic plan for your company.

After participating in this session you, will be able to:

- Determine your end goal
- Understand how market factors and opportunities impact your plan
- Identify the right people to be involved in the plan
- Know which key components to include in the plan
- Develop the plan – when and how
Schedule of Events

Thursday, November 1, 2001

7:30 am
REGISTRATION OPENS

8:30 - 9:45 am
KEYNOTE ADDRESS: 15 WAYS TO MOTIVATE YOUR EMPLOYEES, INCREASE PRODUCTIVITY, AND IMPROVE MORALE - Jean Seawright Pileggi, CMC

9:57 am
TRADE SHOW OPENS

Don't miss a single booth! Wear your walking shoes, because with over 150 exhibitors, there will be a lot of ground to cover. TCI EXPO is the largest tree care trade show in the nation. If it will make your business more efficient, competitive, productive or profitable, you'll find it here. Plus, we've arranged for live demonstrations and plenty of hands-on opportunities with some of the leading names in the arborist industry.

Check your show program for times and locations. To keep up with the industry, you won't want to miss a single demo.

10:00 - 11:00 am
STATE OF THE ASSOCIATION & ANNUAL BUSINESS MEETING

Opening Remarks and State of the Association by Mark Tobin, NAA Chairman and Cynthia Mills, CAE, NAA President. The business of the association will be conducted at this time, including the Board of Directors election and presentation of the new Code of Ethics.

12:00 noon
ARBORBUCKS DRAWING - Tree Demonstration Area

Be sure to fill out your entry form and you could be the winner of ARBORBUCKS currency. ARBORBUCKS can be used as cash at any of the participating vendor booths. Here's your chance to win the goods and services you need!

2:00 pm
ARBORBUCKS DRAWING - Tree Demonstration Area

It's not too late to enter the drawing. You could be the winner!

4:00 pm
TRADE SHOW CLOSES

3:00 - 5:00 pm
BALANCING ESTIMATING, JOB COSTING AND ACCOUNTING - Charles Vander Kooi

What is the relationship between estimating, job costing and accounting? How do they work together in relation to an effective business? In this program, Charles will explain the relationship between these three areas of business and how they balance each other.

4:00 - 5:00 pm
PUTTING THE REVISED A300 PRUNING STANDARD TO WORK FOR YOU - Sharon Lilly & Geoff Kempfer

The A300 Pruning Standard was extensively revised this year. Learn how you can use this powerful tool to improve the quality of your work and the professionalism of your organization.

6:00 pm
WELCOME RECEPTION & EXCELLENCE IN ARBORICULTURE AWARDS PRESENTATION - for all Attendees and Exhibitors

Regency Ballroom, Hyatt Regency Columbus
Complimentary hors d'oeuvres.

The pursuit of excellence is the lifeblood of this profession. When attained, excellence should be acknowledged, rewarded and respected. This celebrated evening recognizes and honors commercial tree care professionals and their valuable clients. Join us and enjoy an evening of fun with fellow tree care professionals.

In Partnership with The Hartford and Morbark Inc.

Friday, November 2, 2001

7:30 am
REGISTRATION OPENS

8:00 - 9:00 am
TREE PLANTING GUIDELINES - Charles Vander Kooi

Many tree problems can be traced to planting and/or site selection. Learn the right skills and strategies to minimize future problems. OSHA requirements and knowledge of the F. A. Bartlett Tree Expert Co., the nation's preeminent tree care organization, will be shared.

8:00 - 9:00 am
SAFETY PHILOSOPHIES & EXCITING EQUIPMENT DEMONSTRATIONS - John Hendricksen & Steve Chisnall

You don't have to lose sleep over a yet another preventable accident, if you attend this presentation. We will demonstrate the latest in safety equipment and provide guidance to make your worksite a safer place.

9:00 am
TRADE SHOW OPENS

Plan on an information-packed day! Many booth demonstrations and plenty of hands-on opportunities await you. Remember, if it will make your business more efficient, competitive, productive or profitable, you'll find it here.

9:30 - 10:30 am
TREE FAILURE RISK ASSESSMENT - John Hendricksen & Steve Chisnall

Could your organization handle a tree failure? Our panelists will introduce you to a five-step process for assessing the risk of tree failure in the workplace. It's not too late to enter the drawing. You could be the winner!

10:30 - 11:30 am
CAREERS IN ARBORICULTURE - John Hendricksen & Steve Chisnall

Could your organization handle a tree failure? Our panelists will introduce you to a five-step process for assessing the risk of tree failure in the workplace.

12:00 noon
ARBORBUCKS DRAWING - Tree Demonstration Area

Be sure to fill out your entry form and you could be the winner of ARBORBUCKS currency.

2:00 pm
ARBORBUCKS DRAWING - Tree Demonstration Area

It's not too late to enter the drawing. You could be the winner!

4:00 pm
TRADE SHOW CLOSES

4:00 - 5:00 pm
YOUNG TREE TRAINING - Larree Johnson, NAA

As a practicing arborist pruning trees and servicing customers, Larree Johnson explains how to get the most satisfaction from the customer. He will introduce you to the elements of a five-step process.

4:00 - 5:00 pm
CUSTOMER SERVICE: HOW TO GET IT RIGHT THE FIRST TIME - Sharon Lilly & Geoff Kempfer

Getting the customer is easy; it's keeping the customer that is. Learn how to introduce your customers to a five-step process that will establish your company as one of the best. The philosophy focuses on the customer's needs, how to build long-term relationships and the opportunities for your business. There's no show like TCI EXPO.
MANAGING SOILS – Dr. Bonnie Lee Appleton

Learn back to poor planting conditions. Why condemn your client relations, limit your call-backs, and improve the overall

PERIENCES WITH OSHA – holm

er the prospect of an OSHA investigation, or worse, your firm takes the necessary steps to comply with its regulatory rights. Come hear the industry’s real lessons their companies have learned.

day of demonstrations, browsing the newest services, and exchanging ideas with your peers.

FOR THE CLIMBER – Joe Bones

company wrote some of the original guidelines for OSHA. Now they’ll be sharing the next generation of laboratory research and field experiences.

– Tom Green, Tim Jackson & Terrill Collier

more work or become more profitable if only it The labor shortage in the tree care industry is easily frustrating issues facing the industry right now. The cost of fresh ideas on how your company can recruit and retain employees or train young trees with proven, positive

KEEP CLIENTS FOR LIFE – Hal Becker

keeping the customer that’s the hard part. As all of us know in selling and customer service. Hal’s fun, basic insights which many of us have forgotten or never learned to do quickly:

- Say your golf course client needs more sun on a certain part of the fairway, or a residential client wants sunlight in his breakfast nook from 8 to 10, but neither is willing to part with any trees. Robinson has developed an innovative system to model the quality and quantity of sunlight needed and come up with pruning prescriptions to save trees and satisfy clients.

WEB POWER: BRANCHING YOUR BUSINESS ON THE INTERNET – Brian Urbanski

This exciting fast-paced Internet session will show newcomers and experienced users alike the Internet strategies to propel your business into the 21st century, including how to get started, site design tips and tricks, attracting visitors to your site, e-mail as a business tool, choosing vendors, set up costs and more!

TRADE SHOW OPENS

This is your last day to see and learn everything you need to keep your business moving. Be sure to take advantage of all TO EXPO 2001 has to offer!

MARKETING: WHAT IS IT? AND HOW DO I DO IT? – Don Willig

In this seminar Don will help you to understand the true definition of marketing, its function in a company, and the variables (predictable and unpredictable) you need to focus on to develop an effective marketing plan for your company.

ARBORBUCKS DRAWING - Tree Demonstration Area

It’s not too late to enter the drawing. You could be the winner!
Getting There . . .

Driving

From Port Columbus International Airport:
I-670 West, Exit 4-B to the Greater Columbus Convention Center, 400 North High Street.

To the Hyatt Regency Columbus:
Adjoins the Greater Columbus Convention Center and is located on the corner of North High Street and Nationwide Boulevard.

To the Crowne Plaza Hotel Columbus Downtown:
Connected to the Greater Columbus Convention Center and is located across the street from the Hyatt Regency Columbus.

From Indianapolis, Ind. area (west):
Route 70 East to Fourth Street Exit: North on Fourth Street to Nationwide Boulevard.

To the Hyatt Regency Columbus:
Adjoins the Greater Columbus Convention Center and is located on the corner of Nationwide Boulevard and 350 North High Street.

To the Crowne Plaza Hotel Columbus Downtown:
Connected to the Greater Columbus Convention Center and is located across the street from the Hyatt Regency Columbus.

From Wheeling, W. Va. area (east):
Route 70 West to Fourth Street Exit: North on Fourth Street to Nationwide Boulevard.

To the Hyatt Regency Columbus:
Adjoins the Greater Columbus Convention Center and is located on the corner of Nationwide Boulevard and North High Street.

To the Crowne Plaza Hotel Columbus Downtown:
Connected to the Greater Columbus Convention Center and is located across the street from the Hyatt Regency Columbus.

From the Cincinnati area (south):
Route 71 North to Route 70 East to Fourth Street Exit; North on Fourth Street to Nationwide Boulevard.

To the Hyatt Regency Columbus:
Adjoins the Greater Columbus Convention Center and is located on the corner of Nationwide Boulevard and North High Street.

To the Crowne Plaza Hotel Columbus Downtown:
Connected to the Greater Columbus Convention Center and is located across the street from the Hyatt Regency Columbus.

Flying

US Airways
US Airways has been selected as the primary air carrier. Special discounts have been arranged on your air transportation. To take advantage of this special offer, please call US Airways' Group and Meeting Reservation Office at 1-877-874-7687 and refer to Gold File No. 678671807. Plan ahead and receive an additional 5% discount by ticketing 60 days or more prior to departure.

Southwest Airlines
Southwest Airlines has been selected as the alternate air carrier. Southwest Airlines is offering a 10% discount on most of its already low fares for air travel. You or your travel agent may call Southwest Airlines Group and Meetings reservations at 1-800-433-5368 and reference ID Code R3145. Reservation sales agents are available 8:00 a.m. – 5:00 p.m. Monday – Friday, or 9:30 a.m. – 3:30 p.m. Saturday and Sunday. You must make your reservations five or more days prior to travel to take advantage of this offer.

Ground Transportation
Ground Transportation is available on the baggage claim level.

COTA, the public transportation authority, has service to all downtown hotels at a cost of $5 each way, exact change only, leaving every 20 minutes.

Arch Express and Urban Express Transportation offer shuttle service to the downtown hotels for $8.50 per person each way, leaving every 20 minutes.

Taxis are available for approximately $18 each way.

Directions to the Greater Columbus Convention Center
Finding a Hotel Room

This year the host hotel for TCI EXPO 2001 is the HYATT REGENCY COLUMBUS, adjoining the Greater Columbus Convention Center at 350 North High Street. The HYATT REGENCY COLUMBUS is offering TCI EXPO 2001 attendees a rate of $117 single/double occupancy. Valet parking is available for overnight hotel guests at a daily rate of $21. This includes in and out privileges on a 24-hour basis. Self-parking is available on a daily basis at a charge of $14 per day. Space is limited; be sure to make your reservation early. This rate will be offered until Oct. 5, 2001. To make your reservation, please call the HYATT REGENCY COLUMBUS direct at 614-463-1234. Be sure to reference the National Arborist Association/TCI EXPO room block.

Alternative accommodations are available at the Crowne Plaza Hotel Columbus Downtown, which is connected to the Greater Columbus Convention Center. The address for the Crowne Plaza is 33 Nationwide Blvd., Columbus, Ohio 43215. The Crowne Plaza will offer TCI EXPO 2001 attendees a rate of $115 single/double occupancy. Valet parking is available for overnight hotel guests at a daily rate of $19. This includes in and out privileges on a 24-hour basis. Reservations must be made by Oct. 5, 2001 in order to guarantee this preferred rate. To reserve your room, please call the hotel direct at 614-461-4100. Be sure to reference the National Arborist Association/TCI EXPO room block.
Register online at www.natlarb.com for the world's largest tree care show. NAA offers a secure transaction online, and confirmation of your registration will be received within minutes.

When you register online, you are automatically entered to win one of the 200 Arborwear shirts (retail value greater than $50), which will be given out at the show. This shirt is made of soft pre-washed 10-ounce canvas for a remarkably comfortable fit. The relaxed room in the sleeves and collar offers unparalleled freedom of movement.

This promotion is applicable only to online registrants and winners will be picked at random. Void where prohibited. All prizes must be picked up before the show ends. NAA will not ship unclaimed shirts. All Arborwear LLC products are unconditionally guaranteed.

Registration

Please photocopy and complete a separate registration for each conference attendee. Register before the Early Bird deadline of Oct. 5 to receive discounts on Trade Show Admission and educational seminars. Registrations received after Oct. 5, 2001 that do not comply with the appropriate fees, will be billed accordingly. Registration is required to obtain your admission badge. Everyone is required to wear a badge issued by the National Arborist Association to enter the exhibit hall and all seminars. Be sure to pre-register and avoid long lines at the registration area.

All TCI EXPO admission badges will be mailed to attendees who register prior to Oct. 5, 2001.

Individuals registering after Oct. 5, 2001, must stop by the pre-registration desk located outside Exhibit Hall E to pick up their admission badge.

Seminars

Check the box beside each seminar you wish to attend. Be careful not to pick two seminars scheduled for the same time. Count the total number of seminar hours indicated next to the seminar titles. Record this number in the space marked TOTAL SEMINAR HOURS.

If you are attending 5 or more seminars ... BUY GOLD!

To purchase the GOLD CARD, which will give you unlimited access to all educational sessions and the Trade Show, check the appropriate box on the registration form and enter the correct amount in the TOTAL COST line.

Seminar Registration Cancellations

All seminar registration cancellations must be received in writing at the National Arborist Association office. Cancellations received on or before Oct. 19, 2001, will receive a full refund less a $25 administrative fee. Fees cannot be refunded after Oct. 19, however you are welcome to send a replacement. No telephone cancellations will be accepted.

Please Note:
Registrations will be processed but not confirmed until paid in full.
For the first time ever ...

World’s Largest tree care expo is stopping at ...

Milwaukee, Wisconsin

November 7-9, 2002
Midwest Express Center
### 1. Registration Form

Name ____________________________
Title ______________________________
Company __________________________
Address ____________________________
City ___________________ State ______ Zip ______
Phone ___________________ Fax ______
Signature __________________ Date ____________

### 2. Source Request

How did you hear about TO EXPO?  
- TCIEXPO Brochure
- TCIMagazine
- Arborist News
- Other Industry Publication
- NAA website
- Co-worker/Friend
- Other Trade Show
- Other

### 3. Seminar Selections

**THURSDAY, NOV. 1**  
- #1 - 9:30 am 15 Ways to Motivate Employees .............................. 1 Hour
- #2 - 3:00 pm Balancing Estimating, Job Costing and Accounting .......... 2 Hours
- #3 - 4:00 pm Putting the Revised A300 Pruning Standard to Work for You .. 1 Hour

**FRIDAY, NOV. 2**  
- #4 - 8:00 am Tree Planting Guidelines & Managing Soils .................... 1 Hour
- #5 - 8:00 am Safety Philosophies & Experiences with OSHA ................ 1 Hour
- #6 - 9:30 am Tree Failure Risk Assessment for the Climber ................ 1 Hour
- #7 - 9:30 am Careers in Arboriculture ......................................... 1 Hour
- #8 - 4:00 pm Young Tree Training ................................................ 1 Hour
- #9 - 4:00 pm Customer Service: How to Keep Clients for Life ............ 1 Hour

**SATURDAY, NOV. 3**  
- #10 - 8:00 am Pruning to Manage Shade ....................................... 1 Hour
- #11 - 8:00 am Web Power: Branching Out Your Business on the Internet ... 1 Hour
- #12 - 9:30 am Building a Company Safety Program .......................... 1 Hour
- #13 - 9:30 am Marketing: What is it? And How Do I Do It? .................. 1 Hour

**TOTAL SEMINAR HOURS** ____________________________

### 4. Registration Options

- **Gold Card** - Includes all seminar selections and admission to trade show  
  (Wednesday workshops are not included in Gold Card option)
- **Individual Seminars**  
  Multiply cost by number of seminar hours ______ X $ 50 $ 60 $ 70
- **Trade Show Entrance Only** - Free with paid seminars  
  $ 15 $ 25 $ 35
- **Business Managers’ Workshop** (Lunch not included) - Wednesday, Oct. 31, 2001  
  $ 95 $ 95 $ 105
- **Professional Practitioner Workshop** (Lunch not included) - Wednesday, Oct. 31, 2001  
  $ 95 $ 95 $ 105

**ON OR BEFORE OCT. 5, 2001**  
- $205
- $250

**AFTER OCT. 5, 2001**  
- $250
- $300

**TOTAL** $________

### 5. Payment Method

- Check Enclosed  
- MasterCard/Visa/AMEX

AMOUNT $ ____________
CARD NO. ____________ EXP. DATE ____________
NAME ____________________________ SIGNATURE ____________
(as it appears on your card)

### 6. NAA Membership & TCI Magazine Information

1. Is your company an NAA Member Firm?  
   - Yes  
   - No

2. Do you wish to receive NAA Membership Info?  
   - Yes  
   - No

3. Do you wish to receive a complimentary subscription to TREE CARE INDUSTRY (TCI) Magazine?  
   - Yes  
   - No

You must complete the information below to receive your subscription:

4. Business/Industry: (Please check one that applies)  
   - Tree Service  
   - Landscape Contractor  
   - Governmental Entity  
   - Property Mgmt.  
   - Consulting Firm  
   - Utility  
   - School/University  
   - Other: ____________________________________________