TREE CARE INDUSTRY
The Official Publication of the National Arborist Association
Volume 5, Number 1 - January 1994

TREES & CONSTRUCTION
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The National Arborist Association
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PREVENTING CONSTRUCTION DAMAGE
By Daniel Scott Cullen
Case studies of several successful tree preservation projects, both large and small, help you develop this consulting practice as a profit center for your company.

FOCUS ON CHANGE
Learn how to be prepared for constantly changing conditions at the National Arborist Association's annual meeting and management conference next month in Hawaii.

OUTLOOK
By Robert Felix
Publisher Robert Felix writes about the challenges and rewards of influencing public perception.

INDUSTRY INPUT
Readers share their opinions and insights.

WASHINGTON IN REVIEW
By Brian Barnard
Tree care operations must comply with a number of federal regulations. Use this overview article to find out how your firm measures up.

MANAGEMENT EXCHANGE
By Richard Ensmann Jr.
Personnel policies can help you avoid problems.

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On The Cover:
Nature's majesty showcased in Hawaii, the backdrop for an important arborist meeting - see page 22. Photo by Peter French, courtesy of Hawaii Visitor's Bureau.
Everything is new this month: the year, the cover of the magazine, the economy, the challenges and the opportunities. Challenges always bring opportunities.

In my opinion, there have never been greater opportunities for the tree care industry. All are encompassed in the preservation of the environment. All of the services that you provide can be clearly identified as contributing to environmental protection.

Pruning, fertilization and other forms of plant health care all perpetuate the life of our mature trees, and you know the contribution that such trees make to the environment. Yes, you know and I know, but who else knows? Your marketplace has to know. You need to position yourself in such a way that when people think of environmental protection, they think of ensuring the preservation of their trees and you immediately come to mind.

You may need to change the name of some of your services or add emphasis to changes you have already made. For example, nobody is in the tree spraying business anymore. You are in the plant health care/integrated pest management business. You use environmentally sound techniques to control insects and diseases. Contractors don’t do right-of-way brush control anymore. They do vegetation management.

In the process of creating the National Arborist Association’s Arlington event, which you have read about previously, we coined the term “environmental tree care.” The media picked it right up. That’s what you provide: environmental tree care. All of the pruning, fertilizing, cabling and bracing that you provide is environmental tree care. Why? Because what you are doing preserves and perpetuates the mature trees in our urban, suburban and rural areas and these trees make a major contribution to the environment.

In 1994 we are going to see the federal government and the media increase their focus on the environment. The good guys are going to be those who are already identified as being environmental preservationists. The bad guys will be those the press identifies as such. Those who are not identified as either won’t be in focus at all. Why not benefit from the focus you deserve?

You are a major player in environmental preservation. The problem is that not enough people know. Tell your present and prospective customers every way you can. Create an environmentally oriented slogan you can use on your trucks. Shout it from the rooftops. There is no reason to hide it and everybody wins, you, your customers and the trees.

Robert Felix, Publisher
You want a stronger business. Have you considered a stronger saw?

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4.5 cubic-inch 757 to the compact 300S, every Shindaiwa is built for maximum cutting efficiency, minimum cost of ownership. It’s the result of flawless construction. Small displacement, high output engines. And engineering tolerances normally reserved for Formula One race cars. For added protection, you’re backed by a national network of independent servicing dealers. So visit one soon.

Because if you’re running a business, shouldn’t you be running the strongest business tools as well?
Trees And Construction

Arborists Find Challenges, Opportunities In Tree Preservation

By Daniel Scott Cullen

While arborists preserve trees mainly through regular maintenance and effective remedial care when needed, construction projects present additional challenges and opportunities in tree preservation. The challenges lie in the removal of otherwise desirable trees to accommodate the construction and the damage to remaining trees and their environment. The opportunities can be found in reducing the effects of construction so that a larger and healthier tree population can flourish well beyond the construction period.

All too often an arborist is called in only to clear a site before construction or afterwards to treat or remove damaged trees. But tree care professionals can and should be involved in the entire process and tree preservation should begin long before construction is even started. The first step is to select the trees that will remain and to plan the preservation program. This is followed by specialized tree care and protection during construction and the implementation of a planned aftercare program.

Get on the team

Most of the decisions that influence the survival of trees on a construction site are made long before a shovel goes in the ground. Where will the buildings, roadways and utilities be placed? What grading is required? What trees will be left? These decisions may be made by an owner, developer, architect, landscape architect, engineer, building contractor or a team of specialists that includes some or all of these disciplines. Many of these decision-makers may want to preserve trees while some may know enough about tree biology to understand the general effects of construction. But few are as skilled as an arborist or urban forester in assessing the condition of particular trees and woodlands and their ability to survive the effects of construction.

Some enlightened developers have recognized this and routinely employ tree preservation specialists. They understand that effective tree preservation programs may reduce overall costs, result in more marketable projects, make it easier to obtain project approvals and benefit the environment. Others need to be educated. Many face state or local regulations that require comprehensive tree preservation plans before project approvals are granted. Whatever the case, the most important step in successful tree preservation projects is getting a tree care professional - you - on the project team, ideally in the design phase.

Preservation planning

In the first phase of tree preservation, preliminary or conceptual plans are compared to the treed areas of the site to determine the overall effect of construction. Tree groups or stands that are clearly beyond construction impact areas are noted but still require some immediate attention. Tree groups that are affected are inventoried in greater detail to distinguish generally healthy, desirable trees and notable specimens from those that are already hazardous, in poor health or generally less desirable.

Working with the project team, the tree preservation specialist determines which trees must be removed to allow for construction, which ones are not likely to survive and should be removed and which ones will require protection, special treatment or aftercare. It may be possible to revise the site design - changing building,
# How Construction Affects Trees

<table>
<thead>
<tr>
<th>GENERAL TYPE</th>
<th>LOCATION</th>
<th>SPECIFIC IMPACT</th>
<th>CONSTRUCTION ACTIVITY CAUSING IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYSICAL</td>
<td>ABOVE GROUND</td>
<td>Tree removal (immediate)</td>
<td>Placement of buildings, roadways, site utilities or other improvements</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trunk wounding</td>
<td>Equipment traffic, materials handling, attaching anything to trees • Careless tree removal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Root collar wounding</td>
<td>Equipment traffic, grading, excavation, utility trenching</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Branch wounding/loss</td>
<td>Equipment traffic, pruning for building or roadway clearance • Careless tree removal or pruning</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Foliar damage/loss</td>
<td>Exposure to heat (fire, equipment exhaust, roofing/paving operations, etc.) or to chemicals (paint, solvents, herbicides, etc.) • Interruption of IPM or spray program</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Long term trunk or branch decay, loss of structural integrity</td>
<td>Trunk, root collar or branch wounding from equipment traffic, grading or any construction activity • Failure to understand the wound-response process (CODIT)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tree removal (delayed)</td>
<td>Unplanned: any activity leading to decline, death or loss of structural integrity. Planned: Phased construction • Planned landscape evolution • Other intentional delay.</td>
</tr>
<tr>
<td></td>
<td>BELOW GROUND</td>
<td>Transport root wounding/loss</td>
<td>Grading or excavation relatively near trunk • Tearing of roots by improper excavation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Absorbing root loss</td>
<td>Grading or excavation anywhere in root areas, which may extend well beyond 'drip line'.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Long term decay of roots or of entire root collar; loss of structural integrity</td>
<td>Root or root collar wounding from equipment traffic, grading, excavation, utility trenching or any construction activity • Failure to understand the wound-response process (CODIT)</td>
</tr>
<tr>
<td>SYSTEMIC</td>
<td></td>
<td>Generalized plant stress, energy depletion, secondary pests; leading to decline or death</td>
<td>Any activity leading to wounding, reduction in root function or excessive loss of foliar canopy or function • Excessive or insufficient moisture. Improper tree care practices • such as excessive, ill-timed or improper pruning or fertilizing)</td>
</tr>
<tr>
<td>ENVIRONMENTAL</td>
<td>ABOVE GROUND</td>
<td>Increased exposure to sun, wind and reflected heat leading to increased moisture loss/need</td>
<td>Excessive thinning of tree stands, excessive pruning, removal of understory plants • Improper placement of or insufficient root area for new trees</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Increased wind exposure, leading to topping</td>
<td>Excessive thinning of tree stands, removal of ‘companion’ trees • Poor selection of ‘edge’ trees to remain. Insufficient guying of transplants • Poor placement of ‘heeled in’ transplants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Increased exposure to physical damage</td>
<td>Trees left or planted too close to roadways without permanent protective barriers • Insufficient pruning for vertical and horizontal roadway clearance</td>
</tr>
<tr>
<td>SOIL/AIR INTERFACE</td>
<td></td>
<td>Interference with gaseous exchange and water penetration</td>
<td>Soil compaction from equipment traffic or material storage • Filling or impervious paving over root area without proper provisions for aeration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Abnormal soil temperatures</td>
<td>Removal of insulating ‘duff’ layer • Improper grading.</td>
</tr>
<tr>
<td></td>
<td>BELOW GROUND</td>
<td>Excess soil moisture</td>
<td>Improper drainage (particularly where tree walls or retaining structures have been built), change in site drainage patterns, raised water table, grade changes, excess irrigation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inadequate soil moisture</td>
<td>Impervious cover over root system, lowered water table, change in site drainage patterns</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Change in soil chemistry (ph), toxic effects</td>
<td>Fuels, lubricants, paints, etc. from vehicle/equipment storage or maintenance • Concrete wash-out • Leaching from stored construction materials Herbicides under pavement or in root barriers • Chemical spills • Burying construction or site clearing debris</td>
</tr>
<tr>
<td>SYSTEMIC</td>
<td></td>
<td>Generalized plant stress, energy depletion, secondary pests; leading to decline or death</td>
<td>Various abnormal tree environments, including: Insufficient root area, poor tree selection for location (soil, climate, etc.), excessive or insufficient moisture, 24 hour site lighting, air pollution, etc. • Insufficient after-care and management.</td>
</tr>
</tbody>
</table>
roadway or utility locations, narrowing roadways, altering building design, and so forth - to save more trees or particular specimens. The pitfall lies in sometimes creating hazard trees by trying to save the wrong ones. Overmature trees, "edge" trees and those subject to loss of support roots could present such problems.

After the tree selection is complete and specific impacts are understood, a tree preservation plan can be drawn up. If a proposed plan is required as part of the approval process, it may need revisions in order to fit the final approved site plan. The plan may include site maps identifying trees to be preserved; specifications for tree protection, specialized care and routine aftercare; and a sequence of work coordinated with the overall project specifications and construction documents. The complexity and level of detail will, of course, depend on the size of the project.

How to protect trees

It is easier and far less costly to prevent damage than to repair or compensate for it. The most effective way to protect trees is to isolate as many trees as possible from construction activity. While traditional construction specifications have protected trunks, it is equally important to protect root zones. The drip line can serve as a guide, with a greater risk of damage closer to the trunk, but roots can extend well beyond the drip line.

Some specialists take soil samples to determine the actual root zone of particular trees or groups. Snow fencing, chain link and even barbed wire have been used effectively. On small, brief projects, flagging tape may be enough. Signs can be used in addition to fencing to identify sensitive areas. Untreed areas can be designated for vehicle, equipment and material storage. Some desirable trees are best protected by transplanting either directly to a permanent location or to a temporary holding area.

Education at all levels of the construction organization is equally important as a tree protection tool. For tree preservation to be most effective, developers and others involved in the construction project must understand the process and be committed to it. For example, tree damage can be prevented if contractors understand why and how it can happen. Some developers require all equipment operators to attend an orientation session before they work on site. The International Society of Arboriculture has produced two video tapes on the subject that can be used as effective training tools.

Fences can be breached, education can be ignored and trees can be lost unnecessarily, but such occurrences are less likely to happen if a penalty is associated with them. Contracts can require tree replacement (based on a trunk or canopy ratio) or cash payment (based on predetermined CTLA values, with or without additional penalty) if contractors violate tree preservation specifications. Some communities put the burden of compliance on the developer by withholding Certificates of Occupancy or calling in performance bonds if tree preservation or restoration specifications are not met.

Tree protection measures should be in place before construction activities begin and, when possible, before site clearing and grubbing. Of course, the actual timing will vary from site to site.

Special techniques

Some desirable trees cannot be isolated from the effects of construction, but they
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1987 11 Ton Manitex on Ford F800 Diesel, 71'x40' Jib = 111' Hook Height ........................ $44,500

1991 Ford F800, 7.8 Diesel; 6 Spd with Manitex 1461 Crane, 14 ton, 71' Hook Height, 20,000 miles .......................................................... $56,900

1993 Rental with 350 hrs .......................... $104,000

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(10) 1976 To 1982 Telelect T40C Placer Units; FORD & CHEVRO-LET; Gas & Diesels.

(5) 1980 Ford F800; V8; 4 Spd; w/Versalift 28' Bucket; 2 Utility Bodies; Derrick; 14 ton Cap Onan 2 Cyl. Generator ... $7,500 Each .......... $23,000 to $26,000

(5) 1986-87 GMC; Diesel w/Altec or火山 29' Bucket; 9 Utility Bodies; Derrick; 7 Ton Cap Onan 2 Cyl. Generator .......................... $7,500 Each

(5) 1990 Ford F800; V8; 4 Spd; w/Versalift 29' Bucket; 2 Utility Bodies; Derrick; 7 Ton Cap Onan 2 Cyl. Generator ... $7,500 Each

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1985 GMC; V8; 5+2; (5) Used Chippers in Stock; Asplundh, Etc.

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Also, 125' Reach All ................... $69,500

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Altec 12” Whisper Chippers; 4CY Ford Gas $12,900; (5) Used Chippers in Stock; Asplundh, Etc.
can still survive if treated properly. Construction techniques can be adjusted to minimize the stress on trees, and tree care practices can help trees overcome unavoidable stresses.

The simplest techniques seek to avoid damage. When trees cannot be isolated, trunks can be protected by wooden barriers, root collars can be protected from wounding and root zone compaction can be minimized by thick layers of wood chips. Attachments to trees (temporary bracing, utility lines, site lighting, signs, survey markers, etc.) should be prohibited. Pruning by competent tree care workers for adequate vertical and horizontal building, roadway and equipment clearance will prevent accidental breakage or improper removal of branches. Careful tree removal will likewise prevent damage to remaining, nearby trees.

More complex techniques may be required when excavation or change of grade within root zones cannot be avoided. Excavation and lowering of grades will destroy roots. If continuous footings for buildings or walls can be replaced with discontinuous or point footing, excavation and root loss can be reduced. Tunneling under trees or trenching radially can minimize damage from utility installations. Retaining walls can be used to limit the extent of grade cuts, preserving larger root areas. Where building regulations permit - or can be modified - slopes may be maintained to help preserve root areas. On residential or campus sites, curbing and sidewalks can be replaced with gentle swales and winding paths in order to reduce root damage. When roots must be cut, they should be cut cleanly rather than torn by excavating equipment. Proper and selective fertilizer applications, soil amendments, irrigation or root pruning can be used to promote root activity in non-affected areas well before construction begins and to encourage growth of new roots into affected areas once construction is complete.

Raising or filling grades around trees can interfere with gaseous exchange between soil and air and with water penetration to the root system. Root collars and trunks may be damaged. Retaining walls or tree wells can be used both to protect trunks and root collars and to limit the root area that is filled over. Any filling over root systems must be porous enough and properly drained to allow both respiration gasses and water to move freely in and out of the root area. Depending on the depth of fill and drainage patterns, this may require simply the use of crushed stone or other porous fill or a more complex system, which may involve retaining walls, ventilation or drainage piping, various types and layers of fill and use of geotextile fabrics. Properly designed systems can allow continued root function and sufficient compaction to meet engineering requirements. Similar techniques or permeable materials (paving blocks, gravel, etc.) can be used to provide paved, traffic surfaces over root systems.

Some trees that can be protected during the construction period will be subject to soil compaction from heavy pedestrian traffic or other activities after construction is complete. Site design can incorporate tree grates, groundcover and understory planting, permanent fencing and convenient walkways to minimize such impacts.

Some tree preservation programs establish on-site tree nurseries. Transplantable trees that might otherwise be removed can be stored for eventual replanting. New trees can be acquired early in the construction process and allowed to grow on site for a number of years before planting. This approach presents several advantages, such as lower costs for new plant material and greater flexibility in scheduling installation.

All trees should receive proper care throughout the construction period to maintain plant health and correct or eliminate hazardous conditions. Appropriate care can be specified much like a routine maintenance program for any site. There are, however, some unique concerns. Trees on construction sites that have suffered root loss or other stress - particularly transplants - may require irrigation to prevent stress from turning into irreversible strain. Stressed trees may be more susceptible to insects or diseases and may require increased monitoring or treatment. There may also be interruptions or delays in providing tree care because of access or budgetary constraints. Physical site conditions, security precautions or union contracts may all prevent timely access for tree care. Speculative developers or their lenders may feel that routine tree care is unnecessary or too expensive.
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owner-developers may include routine maintenance in operating budgets that may not be available until after the capital budgeted construction period is over.

Aftercare and management

Regardless of other measures, two important factors in ensuring the survival of trees on construction sites are aftercare and management. A complete tree preservation plan will include specifications, or at least general guidelines, for continuing tree care after construction is completed. Where ownership is unchanged, a complete tree preservation program will include a budget to carry out the continuing care. Some tree protection ordinances make developers responsible for tree survival for some period after completion, regardless of ownership.

Post-construction tree maintenance should include monitoring for delayed indications of stress or of potential hazard from decay, continued irrigation as needed, removal or replacement of guying systems as appropriate as well as all the functions of routine tree maintenance. Secondary tree removals may also be undertaken in this phase. Very successful tree preservation programs have 90-95% survival rates, which means that even these will have 5-10% delayed removals. Certain trees that are not entirely desirable or that may be subject to slow decline may be scheduled intentionally for delayed removal. Such trees may, for example, prevent erosion, provide screening or be in scale with new structures during an interim period while other trees “grow into” the site.

On sites that have not been adequately protected or managed through the construction period, arborists are typically called in after the damage is done. Aftercare will include remedial measures. When trees are severely damaged, hazardous or in obviously irreversible decline, there may be nothing to do but remove and replace them. Some stressed trees may be coaxed back to good health with skillful care. Soil compaction can sometimes be relieved by vertical mulching, soil fracturing and other techniques. Money spent on these extraordinary measures would be better spent on good tree preservation planning.

Regulatory questions

While tree preservation and protection regulations are becoming more and more commonplace and may lead to more tree preservation opportunities, some are rigid and needlessly burdensome and lack professional insight. A formidable array of other regulations can stand directly in the way of tree preservation. Engineering, subdivision or public safety regulations, for example, may call for road widths, curbs, easements and other features that exceed what is really required.

A skilled project team with a comprehensive tree protection plan in mind may be able to change regulations or obtain relief from certain requirements in order to implement the best possible tree preservation program on a particular site. Understand, however, that challenges of this sort will be added to the technical ones.

The arborist’s role

Whether the arborist provides tree care services or acts purely as an expert adviser or both will depend on the size and organization of the construction project, the abilities of the individual or firm and the desires of the client. Nursey men, landscape construction firms and fencing contractors can be enlisted to provide services that may not be offered by some tree care firms. As outlined above, a comprehensive tree preservation program will require extensive report writing and perhaps expert testimony at public hearings in addition to traditional tree care services. Arborists unfamiliar or uncomfortable with these planning aspects can work effectively with a consulting arborist, landscape architect or other member of the project team. The indispensable role of the tree care professional is assessing the condition and survivability of particular trees on a particular site.

Scott Cullen has been involved in tree care since 1971 and is a licensed and certified (ISA) arborist. He holds a master’s in Real Estate Development and is a certified natural resource expert for the Global ReLeaf for New Communities program. He is an arboricultural and real estate consultant in Greenwich, Connecticut.
Each year gypsy moths defoliate hundreds of thousands of acres of trees. In residential areas. Big cities. Small towns. National parks. And state parks. But the trees can be saved.

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Safety first

Wes Geiger’s “Take Every Precaution” in the November TCI issue evokes these comments. When I first started climbing in the late '30s and '40s, Dad’s motto was “Safety first.” His safety strap had a swing gate on each end. Dad showed me how a D-ring can twist a swing gate open. He taught me to always look where and what I snapped a safety strap into (in later years I added more rings) and to be certain that I leaned back into it while checking that the snaps were not twisted. When it came my time to make improvements on a saddle, I used a thimble and spliced one end of my safety strap into my left D-ring. I substituted a thumb slide snap in place of the swing gate snap, as I feel the slide type to be safer and easier to use with gloves. When I climb now, I still check what I snap it onto and I check it as I put my weight in it, as a matter of safe habit. Over the years I would have had two bad falls if I did not make it a habit to be either double-crotched (using two line ends) or single-crotched with a safety strap, especially when using a power saw.

Dad was a self-taught climber as he switched from being an orchardist to arborist. (He and Ernie Chase of Keene were cofounders of the New Hampshire Arborists Association in 1933. I’ve been to most meetings ever since.) Dad’s climbing method that he developed (I’ve since heard of similar ones) was using ropes and a series of ladders lashed in a tree. My first climbing was to remove the ladders from a pruned tree. We did not know how to tie the tautline hitch and a groundman held what Dad called his “life line.” I seldom use ladders today, unless a single ground ladder to assist, but I’m very pleased to have had the rigging experience. Still crotched in, I recall one elm removal, before a chain saw, working a two-man cross cut alone, from a ladder suspended out in space where it was easy to work from.

One of the most interesting phases of the business is developing unusual but practical methods of rigging. Experiences over the years could fill a book, if I can shoehorn in the time to write it.

David B. Watson
Newington, New Hampshire

Great job!

Way to go, TCI magazine. I look forward to receiving your magazine every month. The articles are excellent and keep us abreast with the latest developments in the tree care industry. Thank you for publishing a great magazine! Keep up the great job!

Phil Mudge
Cody Tree Service
Kelowna, B.C.

Letters should be addressed to:
Tree Care Industry, Editor
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Safety And Compliance

By Brian Barnard

The backbone of every company is its workers. A healthy work force is more productive and more economical. An injury can cost an employer thousands of dollars in lost production, wages, medical expenses and disability compensation. More important is the pain and suffering of the injured party.

From an ethical standpoint, employers have a duty to keep workers safe. Federal and state agencies require employers to maintain a workplace where employees can operate safely.

Some tree firm owners complain that they can't possibly follow all the rules and regulations the government requires. And while regulatory compliance is not easy, keep in mind that the rules are intended to keep workers safe, not hurt your business.

Tree firms must comply with regulations that affect all service industries as well as those that apply specifically to arboriculture. To keep workers safe and meet federal requirements, you should meet the criteria described here. Keep in mind that many states expand on federal requirements.

OSHA

The Occupational Safety and Health Administration states that the employer must maintain a workplace free from recognized hazards. This is called the General Duty Clause. The hazards and ways to abate them for this industry are outlined in the American National Standard ANSI Z133.1. This is an industry consensus guideline written by people familiar with tree care.

Therefore, to meet the requirements of the General Duty Clause, follow the details outlined in ANSI Z133.1. The 1994 edition of this document will be available in the spring from the American National Standards Institute, the National Arborist Association and the International Society of Arboriculture.

The Hazard Communication Standard also applies to tree care. This rule states that the employer must inform and educate employees about hazardous materials in the workplace. Even if a company does not spray pesticides, it cannot skip this requirement. Gasoline and bar oil, which are used almost universally, are examples of substances triggering the Haz-Com requirement for this industry.

To comply with Haz-Com, obtain Material Safety Data Sheets (MSDS) for every hazardous product in your workplace. Explain to employees how to handle each product safely and make sure everyone knows where to get more information on a particular substance. Also make sure that all products are properly labeled. Keep the MSDS forms in a binder accessible to all workers. These binders should also be carried on the truck. The information on an MSDS offers little assistance in an emergency if the paperwork is in the office.

Frequently, arborists work near electrical conductors. For this reason, OSHA has written specific regulations for working around electrical wires.

The Electrical Safety-Related Work Practices Standard requires residential and commercial tree care firms to ensure that their workers are adequately trained to work near electrical conductors. The rule covers any worker who may come within 10 feet of any electrical conductor.

Meeting this rule requires that the employer document a worker's competence in avoiding the hazards of working near electricity. For example, does every employee on your crew know the nominal voltage in the power lines they may work around?

The National Arborist Association offers a written training manual and video tapes on working near electricity. Call 1-800-733-2622 for information.

Federal OSHA is developing a standard specifically for utility line clearance companies. It is expected that Joseph Dear, who was confirmed in November as the Assistant Secretary for Occupational Safety and Health, will sign the proposal this winter. This standard may require employers to certify the competency of their employees.

Record-keeping

Firms with 11 or more employees must maintain records of injuries and illnesses as they occur. An occupational injury includes any injury such as a cut, sprain or back injury. An occupational illness would include an abnormal sickness from exposure to environmental factors associated with employment.

These records are maintained annually on an OSHA 200 form. This form must be posted no later than February 1 and remain visible until at least March 1 of each year. If no accidents occurred, zeros are entered. The form must be posted in a place where workers report daily. If this location varies, records must be kept at the place from which they are paid or at the base from which they operate.

Employers do not have to send this report into OSHA, but it must be kept for five years. In the event of an inspection, an OSHA official may ask to see past reports. The OSHA 200 form is free from your local department of labor.

In addition to the OSHA 200 form, if an accident occurs a supplementary recording form may be required. This form contains more detail about each injury or illness, such as how an accident occurred. To eliminate duplicate record-
ing, the OSHA 101 form may be substituted by a workers compensation form if that form offers sufficient information.

OSHA's Future

Many Congressmen feel that the 23-year-old OSHA Act requires updating and OSHA reform bills are pending in the House and Senate. Dear has said that expanded use of criminal penalties will be part of a strong enforcement program for OSHA. Dear has not announced his position on OSHA reform legislation.

DOT

Arborists spend a considerable part of their work day on the road. The Bureau of Labor Statistics reported that 18% of job-related fatalities in 1992 occurred in highway vehicle accidents, leading all other categories.

In the interest of safety, the federal Department of Transportation requires that all drivers of vehicles larger than 26,000 pounds gross vehicle weight have a valid commercial driver's license (CDL). A CDL is also required for towing a vehicle over 10,000 pounds, or transporting materials that require hazardous materials placards.

Most driving requirements are in effect if a vehicle exceeds 10,000 pounds gross vehicle weight or if a vehicle of any size transports hazardous materials. Drivers of vehicles over 10,000 pounds have certain responsibilities. Review the information below. Are your employees qualified to drive your company vehicles? If not, contact your local Department of Motor Carriers for details.

In order to drive commercial motor vehicles more than 10,000 pounds, and under 26,001 pounds, employees must be 21 years old, able to read and speak English, be able to drive safely based on experience and training, and be familiar with securing cargo.

In addition, drivers must meet physical qualifications. They must have two feet, arms and hands, or have a legal waiver; no ailment that would interfere with safe driving; good vision and hearing; and a physical exam every two years. Drivers must carry medical certificates at all times.

For their part, employers are required to give each driver a road test. This is not required if the employee has a valid CDL, or had a road test with another employer in the last three years.

Employers also must make sure that employees know how to make pre-trip inspections, how to hook up the trailer, chipper, etc., how to use controls, operate in traffic, turn, brake and back up.

Employees must pass a written in-house open book exam, prepared by the Department of Transportation.

Drug testing is required only if drivers operate vehicles over 26,000 gross vehicle weight rating.

Each day drivers must check and be satisfied that a vehicle is in good working order. That means checking the parking brake, steering, lighting and reflectors, tires, horn, windshield wipers, rear view mirrors, coupling devices, wheels and rims and emergency equipment.

EPA

The Environmental Protection Agency (EPA) also drafts rules that affect tree firms, particularly those that use pesti-
If you can't get to it safely you can't prune it or otherwise work in a tree. NAA's video orientation to ROPES, KNOTS & TREE CLIMBING provides:

- Essential information on the ropes, snaps, carabiners and saddles used.
- Basic instruction in the knots required for tree climbing.
- Various climbing techniques used for ascending into and working in trees.

All of the appropriate elements of the ANSI Z133-1994 are included.

NAA's video training programs make actual on the job training much easier. After viewing an NAA video a trainee can go into the field with basic background information. Repetitive viewing of NAA's video training program re-enforces the training provided in actual work situations.

Attendance sheets provided with this program allow an employer to easily document employee training which meets OSHA requirements. Tests are also provided to measure employee comprehension.

The ROPES, KNOTS & TREE CLIMBING video program will be available in March 1994. To order please fill out the order form on page 33 or call the National Arborist Association Hotline at 1-800-733-2622.
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EPA's future

There is growing sentiment that the EPA should have the political power of other Department level agencies such as the DOT.

The Senate has passed a bill (S 171) to make EPA the 15th Cabinet level department. The House of Representatives is also taking up the measure (H.R. 3425), but the legislation stalled just prior to the holiday recess.

Bill supporters say a Department of Environment would assure increased compliance with environmental laws and improve the status of environmental officials.

Brian Barnard is Director of Government Affairs for the National Arborist Association. The NAA works diligently with standards developers, as well as government and regulatory agencies to ensure sound, workable regulations for the tree care industry.
Sound Personnel Policies

By Richard G. Ensman Jr.

Are your personnel policies up to date? Are they in writing and formally communicated to your employees when they're hired?

If you hesitate before answering these questions, this brief article is for you. Sound personnel policies help ensure good business communication, articulate the general expectations you have of your employees and provide a consistent frame of reference for decisions about working conditions and benefits. From a preventive standpoint, sound policies help prevent employee misunderstandings - and can even save a business firm the cost of arbitration or legal action resulting from an employee complaint.

Personnel policies cover the basic work rules and guidelines of concern to your employees. The content of your personnel policies will, of course, depend on the size of your firm, your business traditions and your management preferences. But every set of personnel policies, yours included, should cover the following areas.

**Hiring policies** - Do you stipulate general professional qualifications for your work force? Do you hire through a standardized application and interview process? What general criteria do you use to select employees? This information should be spelled out in your policies.

**Termination policies** - Terminations, especially involuntary terminations, can be one of the most troublesome concerns in modern business. Spell out expected termination terms: notice required for resignation, benefits accruing to the employee at the time of resignation, your policies on post-employment references, etc. And spell out the procedure and criteria to be used when and if an employee is involuntarily terminated. It will save you time and trouble later on.

**General conduct** - What standards of conduct do you expect your employees to observe? Do you have rules for dealing with customers and clients? For behavior on the job? For professional demeanor and dress? If they're specific, fair and truly related to the job, include them in your personnel policies.

**Salary policies** - These policies should cover the criteria used for giving salary increases, the dates employees are eligible to receive increases and the general process by which you set initial compensation.

**Payroll deductions** - Your policies should itemize mandatory deductions such as tax withholdings, as well as other deductions which you or your employees may select. These could include disability insurance, annuity or pension withholdings or charitable contributions.

**Attendance** - What norms do you have for attendance? What procedure must employees follow when they need to call in sick? What sanctions do you impose for tardiness? Attendance problems pose disciplinary concerns for many supervisors. Spell out your expectations in advance; you'll make everyone's work easier later on.

**Benefits** - What benefits are your employees entitled to? Life insurance? Employer-paid pensions? Part, or all, of hospital insurance premiums? Do you differentiate between benefits for full-time people and part-time people? Under what circumstances do you pay full benefits and under what circumstances do you pay part?

**Job description** - While job descriptions will not appear in your written personnel policies, the policies should allude to the job description furnished to each employee - and confirm that the job description is an accurate and concise representation of employee duties.

**Supervision** - Standards of supervision should generally be spelled out in the personnel policies. Required supervisory meetings, reports and general supervisor-employee communication channels should all be noted.

**Appraisal of performance** - How does your organization routinely appraise performance? Do you conduct quarterly or annual appraisals of employee achievement and efficiency? Or do you appraise through more informal means, such as conferences and reports? Employees want to know how their work will be evaluated. Spell out the process and you'll avoid a lot of employee anxiety.

**Health, injuries and accidents** - This is a catch-all term covering quite a bit of ground. If you have requirements for medical examinations, note these. Also note the reporting procedures for injuries and accidents, whether on or off the job. Note, too, the circumstances under which you, as the employer, can appraise the health and fitness of an employee - a provision coming under increasing scrutiny today in light of job-related alcohol and drug problems.

**Leave allowances** - Your employees are probably entitled to time off - with pay

TREE CARE INDUSTRY - JANUARY 1994
- for vacations periods, holidays, personal business and illness. What leave allowances do you permit, and under what circumstances can they be taken? What must your employees do to receive these allowances?

Overtime - When is overtime allowed? Required? Who may authorize overtime and what additional benefits do your employees receive when they work extra hours?

Professional expenses - If you require employees to purchase uniforms, use their vehicles for business travel, pay dues or pay any other out-of-pocket expenses in the course of their work, note these in your personnel policies. And be clear about what will be reimbursed and what will not.

Retirement - When are employees eligible to retire and under what circumstances? What procedure should they follow in making retirement plans known and filing for pension benefits?

Achievement - Does your firm have a formal policy for recognizing employee achievement? A bonus system? A recognition program? Do you observe certain standards for changes in titles, compensation or promotion? If you recognize achievement across the board in some systematic way, be sure it's spelled out in your personnel policies.

Equal employment opportunity - Your policies should include a statement indicating that you do not discriminate against employees or prospective employees on the basis of race, sex, age, gender and other personal factors. If you do business with a unit of government or if you're required by law to actively recruit members of minority groups, you may wish to include an affirmative action statement in your policies.

Human rights - Employees have the right to be protected from physical harm, discrimination and sexual harassment on the job. Your personnel policies should spell out these assurances and stipulate the procedures to be followed by employees who suspect violations.

Grievances - A grievance is a complaint or suggestion that your policies have been administered unfairly. Every business firm should have some form of grievance procedure, even one as simple as a series of informal conferences intended to resolve disputes. Whatever the grievance procedure, it should be spelled out in the personnel policies - with an assurance that employees will not be disciplined for using the procedure.

Non-contractual statement - You're probably wise to include a statement in your policies indicating that they do not constitute a binding contract between you and your employees. This statement may give you some leeway in changing policies from time to time and can help protect you, as an owner or manager, against charges of contract violations.

Consistency and fairness - Your personnel policies, if developed wisely, can be a real asset to your business. They can help you and your employees weather changing business conditions - and ensure consistency and fairness in personnel matters for years to come.

If you're writing new policies - or revising old ones - be sure they reflect the management standards you want to pursue. Consult a labor relations specialist or attorney if you need help with thorny areas, or if you're not sure about the legal implications of certain policies. The time and money you spend today in keeping your personnel policies up to date will save you untold hours and dollars in the years to come.

Richard G. Ensman Jr. is a freelance author based in Rochester, New York. He specializes in business and management topics.
CONSTRUCTION MANAGEMENT

1. Who is responsible for initiating tree preservation methods on a construction site?  
   a) The seller of the property.  
   b) The purchaser or owner of the construction site.  
   c) The contractor building on the lot.  
   d) The realtor.

2. Where will the most serious construction damage usually occur with regards to trees found on construction sites?  
   a) The trunk caused from bark injuries.  
   b) Scaffold branches from improper pruning.  
   c) The crown from crane damage.  
   d) The roots caused by mechanical injury or soil compaction.

3. What is considered the number one killer of trees in urban areas?  
   a) High salt toxicity from road salt spray.  
   b) Compacted soils reducing oxygen and moisture availability to the root system.  
   c) Reflected heat from pavement and surrounding buildings.  
   d) Improper pruning techniques.

4. What is generally the most important practice to include in post-construction tree maintenance?  
   a) Pruning of dead and dying branches.  
   b) Fertilization to stimulate root growth.  
   c) Constant monitoring of soil moisture levels to prevent drought and/or flooding stress.  
   d) Annual applications of 3-4 inches of mulch.

5. What is the best remediation technique for trees with freshly injured, loose bark?  
   a) “Trace” the loose bark in an elliptical shape to allow the sap flow to quickly heal the wound.  
   b) Immediately wrap the wounded area to allow for quicker cambial healing.  
   c) Conduct bridge grafts with the shredded bark.  
   d) Remove the loose, shredded bark at the perimeter of the injury and “trace” the wound with a sharp knife minimizing the size of the injury.

6. Why is it important to mulch over a tree’s roots that will be exposed to construction stress?  
   a) It “organically” fertilizes the trees, which is what they need.  
   b) It improves aesthetics on the construction site.  
   c) It provides a parking area for the workers.  
   d) It helps minimize soil compaction.

7. When soil compaction from equipment cannot be avoided, which of the following materials has been found to minimize compaction the most?  
   a) Plywood 3/4 to 1 inch thick laid on the soil.  
   b) Wood chips spread evenly 6-12 inches thick on a tarp.  
   c) Concrete pavers with a honeycomb design.  
   d) Pea gravel spread evenly one-half inch thick.

8. When determining tree health, which of the following tests best measures a tree’s total stored carbohydrates?  
   a) Root starch analysis.  
   b) Chlorophyll color index.  
   c) Electrical resistance test.  
   d) The annual rate of wound closure.

9. When is the best time of year to take the aforementioned test?  
   a) Spring  
   b) Summer  
   c) Winter  
   d) Any time

10. On average, how far can a tree’s roots extend horizontally from its trunk?  
    a) Just beyond the drip-line.  
    b) Two to three times the radius of the tree crown.  
    c) One-half the radius of the crown width.  
    d) As far out as soil moisture and oxygen levels are conducive to root growth.

11. Which of the following tree evaluation descriptions would characterize a tree worth preserving?  
    a) A 4-inch caliper sugar maple, located 20 feet away from the site with 25% branch damage, and normal leaf color and size.  
    b) A 25-inch caliper American Beech, located 20 feet from the site with 15% branch damage, good color and normal sized leaves.  
    c) A 3-inch caliper dogwood located 10 feet from the site with 5% branch damage and some loose bark on the trunk. Leaf color good but leaf size smaller than normal.

12. What should be the percent of pore space in a hypothetically ideal soil?  
    a) 50%  
    b) 35%  
    c) 25%  
    d) 5%

13. What are the simplest techniques for avoiding tree damage during construction?  
    a) Protect trunks and root zones with high visibility fencing erected before construction begins.  
    b) Consolidate as many utilities as possible into one trench to prevent unnecessary trenching and root loss to desirable species.  
    c) Prohibit any wires, signs, lighting, or markers from being attached to the trees.  
    d) Have all trees properly pruned by a competent arborist to allow for vertical and horizontal building, roadway, and equipment clearance before the construction workers move in.  
    e) All of the above.

14. Which of the following can help a tree through post-construction stress?  
    a) Prune back several branches to help balance root damage.  
    b) Fertilize the tree with a quick release...
form of nitrogen as soon as possible.

c) Aerate the soil which was compacted, going as deeply as possible.

d) Both A and B.

15. What factors are most important when selecting specific trees to preserve during a construction project?

a) Tree age and probable lifespan

b) Tree species sensitivity to construction stress

c) Site conditions including soil, exposure, and drainage

d) Proximity to construction damage

e) All of the above.

16. ___ is done on construction sites when installing underground utilities.

a) Grading

b) Cutting and filling

c) Trenching

d) Bridging

17. ___ can be used to help protect a tree's roots when lowering a grade.

a) A dry retaining wall saving as many roots as possible

b) A well around the trunk and a network of drain tile over the roots

c) Black plastic and then several inches of hardwood bark mulch

18. If soil aeration depths are always the same a(n) ___ can develop underground.

a) anaerobic condition

b) hardpan

c) root rot fungus

19. If tree branches are damaged during construction you should

a) make clean cuts directly inside their collar.

b) cut below the broken areas at a 45-degree angle and paint them with wound dressing.

c) wait several months and cut branches off only if they don’t recover.

d) make clean cuts directly outside their collar.

20. Many city arborists, park managers, and tree care companies agree that if more than ___ of an urban tree’s root system is severed with a “target” nearby, the tree should probably be removed.

a) 75-90%

b) 50-75%

c) 25-30%

d) 5-10%

21. What would be the most devastating to a tree’s root system?

a) Trenching through 20% of a tree’s root system 36 inches deep with a vertical slit trencher.

b) Trenching through 35% of a tree’s root system 12 inches deep with a backhoe.

c) Tunneling under the tree's trunk with a horizontal augering machine.

d) Trenching under the crown next to the trunk.
22. Compacting the soil, raising and lowering the soil grade over an existing root system, and severing the roots can cause the following symptom(s):
   a) smaller than normal leaves
   b) off-color leaves
   c) excessive water sprout production
   d) A & B
   e) All of the above

23. In general, when raising the soil grade around tree roots on a construction site:
   a) always use soil with at least one soil texture class finer than the existing soil.
   b) always use a circular retaining wall around the trunk.
   c) always use soil with at least one soil texture class coarser than the existing soil.
   d) never exceed the depth by more than 2-4 inches with sensitive mature trees.
   e) C & D

24. Why is it imperative to cleanly cut the roots which have been broken during construction damage?
   a) New roots will be more apt to develop from the cleanly cut root, thereby replacing those lost.
   b) Root rot pathogens may be less likely to become established because the woundwood will form more quickly.
   c) Total starch levels will decrease much more quickly with roots not cleanly cut.
   d) A & B

25. What is a common term used for a relative measure of a soil's compaction?
   a) Specific gravity
   b) Bulk porosity
   c) Specific density
   d) Bulk density

**ANSWER KEY**

9. C

This test was compiled by Chris Carlson, a professor and director of Horticulture Technology at Kent State University's Salem Ohio, campus.
**NAA Annual Meeting**

**Hawaii Event Looks At Change**

The National Arborist Association, with more than 1000 member tree care firms in the United States and several foreign countries, will hold its 56th Annual Meeting and Management Conference on the Big Island of Hawaii, February 8-12.

This year’s conference theme is “Focus on Change - Positioning Yourself for Success.” The primary emphasis will be on helping arborists cope with changing environmental, employee, legal, tax, economic and market situations with the goal of helping them to use change as a springboard to success.

There is still time to register. For more information, contact the National Arborist Association at P.O. Box 1094, Amherst, NH 03031, or phone at 800-733-2622.

Guest speakers from a variety of fields will bring their particular expertise to share with conference attendees.

The keynote speaker, Loren Lasher, is president of Potential Development, Unlimited. He will set the tone for the conference by addressing the challenges of change in the business world. His discussion will cover why people resist change and how they can break old habits, overcome fear, increase productivity, stimulate innovation and become successful risk-takers.

A change of attitude often can help break a non-productive cycle and lead to greater success. Training programs are a good example. Cheryl Orr, of Environmental Care, Inc., will focus on methods of changing old training habits to produce smarter, safer and more productive crews, and why companies should concentrate more on improving job performance than on traditional methods of training.

Changes in the earth’s environment also present major challenges to arborists. Many species of trees and plants are either endangered or are already extinct, even in the lush tropical paradise of Hawaii. Helping arborists to understand the changes and learn what they can do about them is the topic of Olive Vanselow’s presentation. Ms Vanselow is an ISA certified arborist with the Honolulu Botanical Gardens.

Changing old ways of dealing with employees, customers and competitors will be at the heart of a tongue-in-cheek, audience participation show called “The Geraldo Mullane Show,” hosted by Gary (“Geraldo”) Mullane, president-elect of the NAA, and a panel of experts. Topics range from dealing with a raise demand from a less-than-stellar worker to handling a shady competitor who is undercutting prices, stealing clients, and violating all the rules and laws, to controlling a sales person who is soliciting company clients for a competitive firm he/she plans to start.

Unwanted changes often occur when the IRS pays a visit. Helping arborists understand how to avoid an audit or, if one is inevitable, how to prepare for it and conduct oneself during it will be the topic of Ed McMillan’s presentation. A CPA and president of McMillan Associates, Certified Public Accounts, McMillan will share his valuable insights and many years of experience.

Changing old ways of increasing business will be the focus of Spence Rosenfeld’s presentation, “Sales Tracking for Growth and Profit.” President of Arborguard Tree Specialists, Rosenfeld will detail the proper sales management tools needed to help business owners track sales, spark friendly internal competition, and motivate sales personnel to greater heights. He will discuss his firm’s sophisticated computer system and share tips for hiring the best salespeople, handling sales meetings, defining territories, understanding compensation options and setting realistic sales goals.

The changing world of government regulation is often frustrating and confusing for those who are subject to those regulations. A representative from the Occupational Safety and Health Administration will offer insights on the organization that most heavily regulates our industry.

Dr. Larry Helms, one of America’s best-known motivational speakers, will discuss ways to change one of the worst barriers to productivity, profits and success: procrastination. His lively and witty presentation will have his audience eager to get back to work and begin putting his ideas into practice.

Finally, the father-son team of Ted Stamen, horticulturist, and Randy Stamen, attorney, will discuss how society’s changing attitudes toward liability can affect arborists. By using actual case histories, they will present interesting, humorous and scary information that will motivate many arborists to consider changing the way they do business.

Aside from the formal presentations and discussions, the NAA Annual Meeting and Management Conference offers arborists the opportunity to network with one another. This networking allows attendees to discuss and discover solutions to common problems and concerns, inspiring them to change and position themselves and their companies for greater success. TCI.
There are two ways to work smarter...

Work harder or work smarter? Some people think that's an easy question to answer. But there are hard ways to work smarter and there are easy ways. You could take accounting, management, government and other related courses, and in, say, five years, you'd be ready to take your tree care business right to the top.

Or, become a National Arborist Association member and tap into a source that has all that information ready for tree care companies. A source that doesn't have to reinvent the wheel every time a question comes up. A source that offers you all the experience of its staff and other members, to help you work smarter.

Take a look at what members have in their business arsenal:

- **A Toll-Free Hotline:** Tree care answers to your tree care business and technical questions. When you need them.
- **Business Management Guidelines:** What would you pay for accounting, cost analysis, sales compensation and human resource guidelines that are already set up for tree care companies?
- **Federal Regulation Guidelines:** NAA members get the rules spelled out for them exactly as they relate to tree care companies. No more wading through page after page of government gibberish!
- **Safety and Technical Training Materials:** There is no other source that offers such comprehensive training programs at such a reasonable cost.
- **Networking with Peers:** You could find out how a tree care company similar to yours turned a problem into a profit center. Maybe you can't call another tree care company in your area with a question, but why not a fellow NAA member from across the country?
- **Better Group Rates on Insurance:** NAA searches out the best plans, then negotiates for you and executes "power buys" to keep the cost of insurance under control.
- **Better Advertising and Public Relations:** An ongoing public awareness program including events such as the National Arborist Day at Arlington National Cemetery, means that the NAA logo on your advertising and stationery carries more weight with cautious homeowners and businesses. Plus, the NAA offers an excellent array of professionally developed brochures and marketing materials at a fraction of what they'd cost you to produce.

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Empire State Tree Conference
Suffern, N.Y.
Contact: Ray Smith, 518-783-1322

January 20-22
Mid-Am Trade Show
Hyatt Regency Chicago
Chicago, Ill.
Contact: Carol Stoker, 708-526-2010

January 24-27
Professional Horticulture Conference of Virginia, Ltd., and Trade Show
Virginia Beach, Va.
Contact: 804-523-4734

January 27-29
New England Grows
Hynes Convention Center
Boston, Mass.
Contact: 617-431-1622

February 7-8
Penn-Del Chapter/ISA Annual Shade Tree Symposium and Trade Show
Lancaster Host Resort & Conf. Center
Lancaster, Penn.
Contact: Elizabeth Wertz, 215-795-2096

February 20-22
Southern Chapter ISA Annual Conference
Clarion Inn
New Orleans, La.
Contact: Dwayne Carter, 919-789-4747

February 23-24
Southern Illinois Grounds Maintenance School
Gateway Convention Center
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EXPO Scores Big!

Measured by any means, Tree Care Industry (TCI) EXPO '93, the fourth annual trade show sponsored by TCI Magazine, was hugely successful. The staff of TCI thanks everyone who contributed to this year's success.

A record 1240 arborists walked through this year's show in the Cleveland Convention Center in downtown Cleveland. Crowds gathered in each of the show's three spacious demonstration areas to enjoy the free safety and technical demonstrations.

Buyers and sellers alike have come to recognize EXPO as being a showcase for modern arboricultural products and techniques. As a result, there were 136 exhibitors occupying more than two acres of exhibit space. The trade show was as much an opportunity for the attendee to be educated as it was for the vendor to make a sale.

The seminar program boasted record attendance, and speakers received high marks from their audiences. Organizers of the educational sessions strive to offer the most authoritative speakers on diverse subjects ranging from "How to Use Your Banker" to "Creating Wildlife Habitat."

Perhaps most important was that EXPO attendees were treated to an event that was fun and thrilling. From the ribbon-cutting ceremony with Lorenzo to the opening night celebration to the daily drawings for prizes, the atmosphere at EXPO was charged with excitement.

EXPO's continued success ensures that an incomparable information source for arborists and business owners will continue to grow and improve. The TCI Expo event staff is already hard at work to make this year's show fresh and exciting. The site of the show, the Philadelphia Convention Center, will be only a little over a year old. With promising advance booth sales, a large and diverse show is already ensured. Finally, plans are well underway to deliver a cutting edge seminar program. Put November 17-19 on your calendar and plan on attending TCI EXPO '94 in Philadelphia. It's an event you shouldn't miss.

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Local arborist/celebrity "Lorenzo" (NAA President Lauren Lanphear) and TCI Publisher Robert Felix presided over EXPO's opening ceremony.

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Famous & Historic Trees is a tree-planting project and educational program of American Forests. More than 125,000 member-supporters of American Forests work to improve the environment by planting and caring for trees and forests, and educating citizens on their importance.

With the help of Global ReLeaf volunteers and supporters, Famous & Historic Trees helps preserve historic sites like Henry David Thoreau's Walden Woods in Massachusetts; battlefields of the Civil War; and George Washington's home, Mount Vernon. Through American Forests, trees associated with these and hundreds of other historic sites have been made available.

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26 TREE CARE INDUSTRY - JANUARY 1994
New Publications For The Arborist/Landscaper

The Landscape Contractors Association, MD, DC, VA is pleased to announce the recent publication of its 4th Edition Landscape Specification Guidelines. These updated guidelines are an essential tool that promotes sound landscape practices. Considered by many to be an industry standard, the Landscape Specification Guidelines are an easy-to-follow reference that no landscape professional should be without.

Developed by leading authorities in the industry, the fourth edition contains three new sections: tree preservation, nontidal wetland planting and irrigation. Revised sections include exterior landscape installation: soil preparation, seeding and sodding; exterior landscape maintenance; and interior landscape installation and maintenance.

The cost of the Landscape Specification Guidelines is $30 for LCA members and $60 for non-members, plus 5% sales tax and $3 shipping. Orders of five or more copies receive a 10% discount. You may order your copy from the LCA at 9053 Shady Grove Court, Gaithersburg, MD 20877. Phone: 301-948-0810; FAX: 301-990-9771.

PHYTON-27 INJECTION SYSTEM

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The Model 8P prefabricated, relocatable pallet storage and materials handling system is now available from Safety Storage, Inc. The Model 8P is designed to meet drum storage and containment requirements for chemicals and hazardous materials. Standard features include continuously welded, heavy-gauge steel construction, spill containment sump, removable steel floor grating, air vents and chemical-resistant coating inside and out. Contact Safety Storage, Inc., 2301 Bert Drive, Hollister, CA 95023. Phone: 800-344-6539, 408-637-5955. FAX: 408-637-7405.

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Vermeer's new model 672 stump cutter comes with Vermeer's exclusive Pro Series teeth, made of forged steel and tipped with tungsten carbide for powerful performance. The 672 uses a mechanical drive that delivers more power directly from the 67-hp Deutz turbo diesel engine to the cutting wheel. The 672 features a compact design for easy accessibility to work areas; a heavy-duty boom pivot with a greater spread between the bearings to help extend bearing life and provide more support; and a 60-inch extension for more cutting length, without repositioning the machine. Contact Vermeer toll-free at 800-829-0051 or, from outside the United States, 515-628-3141.

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Husqvarna Forest and Garden Co. introduces its new commercial chain saw featuring a unique air filtration system and generating the speed and power of larger saws. With its 3.5-cubic-inch (57cc) engine, the Husqvarna Model 257 is ideal for tree services, landscape contractors, farmers and homeowner use. Key to the saw's performance is its Air Injection system, which uses centrifugal force to purify then force-feed air to the carburetor through a large air filter. The result is faster engine acceleration, longer engine life and less frequent filter cleanings. Husqvarna Forest & Garden Co., 9006-J Perimeter Woods Dr (PR), Charlotte, NC 28216. Phone: 704-597-5000.

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A decontamination kit that protects workers in compliance with EPA requirements is now available from Precision Laboratories, Inc. The kit fully complies with EPA requirements that a decontamination kit be present in the field near any forest, nursery or greenhouse worker handling pesticides. The portable kit is lightweight, insulated and constructed of heavy-duty, water-resistant materials. It is easy to store, carry and use, and its interior pockets keep items clean and organized. With bright yellow colors for quick identification, the kit is highly visible in the field. All of the components are specifically designed for use by the commercial pesticide user. Precision Laboratories, Inc., P.O. Box 127, Northbrook IL 60065. Phone: 800-323-6280. FAX: 708-498-1176.

Soil Moist Polymer Disks™ are water storing polymers that encapsulate an 8-to-9-month timed release 10-10-10 fertilizer. The fertilizer is polymer coated to give a 10% coated slow release. The disk captures and stores water that would normally percolate through the soil. When the soil dries, the disk will release stored water and nutrients. The disk will continue to store and release water for several seasons even after the nutrients are depleted. Easy to apply, the disk helps eliminate mistakes by field personnel. Ideal for trees, shrubs and container plants. The disks are available in bulk packages of 100 each. JRM Chemical, 13600 Broadway Avenue, Cleveland, OH 44125. Phone: 800-962-4010. FAX: 216-475-6517.

Midland LMR has introduced new models of its high-performance Syn-Tech™ 2-way radio with enhanced microprocessor software that improves function selection. Designated "PS-3," the new software makes it easier to use the scan, priority, selective call and talk-around features. The new Syn-Tech II PS-3 radios are available in mobile, base station and repeater models in all the common land mobile frequency bands. Options include a 12-character alphanumeric LCD display with 3-character group display, switchable simplex/duplex operation, high-security scrambling and built-in vehicular repeater. Midland LMR, 1690 N. Topping, Kansas City, MO 64120. Phone: 800-MIDLAND, ext. 1690.

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29
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We are a full service arboriculture firm with offices in the Midwest and the East Coast. With our continued expansion, we are seeking qualified arborists for production, plant health care and sales positions within our company. We consider safety, quality, production and communication to be the foundations of proper tree care. If you believe the same and wish to make arboriculture a career, we would like to hear from you. Send your resume with salary history to Carol Demski, c/o The Care of Trees, Inc., 2371 S. Foster Ave., Wheeling, IL 60090. Phone: 708-394-4220.

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Trucks And Sensitive Areas

How To Avoid Damaging A Client’s Property

By Brian W. McMahon

Here’s a technique that many arborists and landscapers may find helpful. One of the concerns clients have when work is being done on their property is the potential damage that results when trucks and equipment are driven on lawns and driveways. Ruts, compaction, cracked macadam, broken irrigation systems and just plain getting stuck are just some of the hazards that are risked when a work crew is trying to get onto a property to do a job. On the other hand, leaving $50,000 worth of aerial equipment parked at the curb while you shag an oak in Joe Homeowner’s back yard isn’t very cost effective.

We’ve been very successful driving trucks up to 32,000 G.V.W. over lawns and other sensitive surfaces using 1/2- to 3/4-inch plywood. Sheets are laid down end to end in two parallel tracks so that the wheels of the vehicle will be centered on each side as it drives in. Initially, the plywood doesn’t have to be put down precisely as adjustments can be made as the truck moves from sheet to sheet.

There are many variations on this theme as different circumstances will require other configurations. But a little experience and imagination will go a long way. Particularly sensitive or muddy areas may require that the plywood be doubled, for example.

Since corners and edges don’t matter for our purposes, plywood may be purchased at a discount. Four-by-eight-foot sheets are used whole as more surface disperses the weight over a larger area. Sheets thicker than three-quarter inch, although more rigid, are too heavy to carry, especially when wet.

Find a way to keep the plywood on your truck all the time; it will come in handy more often than you think. We’ve found that approximately 20 pieces of plywood is a good number to work with: more than that takes up too much space on the truck. If you need to go farther than 20 pieces will bring the vehicle, you can pick up sheets from the beginning of the track and lay them down again. Less than 20, however, requires too much starting and stopping and increases set-up time.

On your way out of the job after you’ve lifted the plywood up, give the lawn a light brush with a rake. Then challenge your client to find a mark in the sod - I’ll bet he can’t.

Brian W. McMahon was a certified arborist with Milton Treeworks, Inc., of Milton, Massachusetts, for 15 years. He is now a student again, at the University of Massachusetts, Boston.

Do you have a story for From the Field? TCI will pay $100 for published articles. Submissions become the property of TCI and are subject to editing for grammar, style and length. Entries must include the name of a company and a contact person or they will not be considered for publication. Articles and photos must be received by the first day of the month for the following month’s issue.
Practical Rigging
An American Arborist Supplies sponsored article
By: Ron Danise

SLING & CHOKER ATTACHMENTS

Double-braid slings have always been my preferred block attachment for tree removals. Tied with a timber-hitch, stillson-hitch, or running bowline, the double-braid sling offers the best strength and dynamic-load handling ability of any attachment. For blocking down trunks there is no other sling choice, in my opinion. However, there are some situations where an endless webbing choker may be as good or better choice as an attachment.

A small block attached by an endless webbing choker is particularly handy when removing many small limbs over a structure. They are lightweight, quickly choked, and are plenty strong enough for the job. You always use this type of choker on a different part of the webbing, so you are not constantly wearing on the same area. With the sling being doubled when choked, the sewn section of the choker is only carrying 50% of the load. This effectively increases the choker's load-carrying capacity as well as its ability to handle dynamic-loading.

Another plus of the webbing choker is there is no knot to fail or untie.

Webbing chokers are versatile tools for other types of attachments, and as sliders to pull one end of cable to the opposite side of the tree in cabling operations. They are also handy for securing your tools in this operation. When cabling, you can secure an endless webbing choker around the trunk as a false-crotch for your foot. As we all know, having a mobile crotch to stand in when drilling holes can make a big difference in your attitude toward cabling.

Some of the other less exotic uses I have found for endless webbing chokers are bundling up piles of brush, choking rootballs when transplanting small trees, and pulling shrubbery out of the way during tree removals.

As you see, there are a multitude of uses for endless webbing chokers. Used properly, chokers can make the job a little less stressful. Do not, however, try to use a webbing choker when the job calls for a double-braid sling. If you keep that fact in mind, the uses for all types of slings is limited only by your imagination.
Tree health, environmental protection, and new product registrations aren't the only discussion topics featured at Mauget tree care seminars. Each Mauget seminar includes time to answer your questions. Your concerns about the environment, diseases, insects, nutrition, pruning, spraying, wounding, and product performance are important. Mauget seminars provide the most practical and most useful information for you to use in your business. Learn about the re-introduction of Fungisol debacarb fungicide. Mauget micro injection utilizes a closed system to protect the environment.

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