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PR We Don't Want as an Industry

I'm going to rant this month.

One of the primary dreams I hear regularly from arborists is the desire to be seen as professionals; the need to have the public recognize the special skills it takes to get the job done; the harm that can be done to trees if people begin to hack away at them on their own.

Well folks, if you're going to be seen as professionals, it's time you start acting like professionals publicly. Does it matter what you look like when you go on a job? Yes. Does it matter what your equipment looks like when you go on a job? Yes. Does it matter how you address your customers? Yes. Have you heard all this before? Yes.

But the one thing you might not have heard before is what to do when the press "comes a'courting." Instead of getting so excited that your company's name or your equipment is going to be in a photo getting you free advertising, you need to think about what you're doing in front of the camera.

It's spring and reporters are looking for pictures in the Northeast – particularly this year now that there are finally some signs of spring. Well, guess what has happened twice within about two weeks in local papers. There we are, up in the trees, some close up and some in the distance. Great publicity – right? The newspapers even used the term arborist – hallelujah for professionalism – right?

However, we are doing ourselves a tremendous disservice by not stopping to think about what the actual photos represent. Do you think there was an article of safety equipment in sight – anywhere? No face shield. No hardhat. Improper shoes. No climbing line. You name the safety violation. You can find it in the photos we've seen.

Please, please, please – before you rush to have that photo taken, think about the great opportunity it will be – not just for your individual business or city, but for the promotion of the professionalism of arboriculture. It is terrific that the media is finally hearing the message about the importance of proper tree care and using the appropriate terminology. It is not terrific when that photo that speaks a thousand words is sending all the wrong messages. One member recently had a situation where a photo led to OSHA showing up at the shop. That shouldn't be why we use appropriate procedures, but it certainly is another incentive. Not to mention the fact that if someone is thinking of joining your company and sees that safety is not a top priority, you might just lose that next great trained and educated employee.

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Forest tent caterpillar defoliates more acres of deciduous trees than any other insect in North America, mostly in the northern United States and Canada. During outbreaks trees are likely to be defoliated whether they are fertilized or not. Photo courtesy of Dr. Dan Herms

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Fertilization has been considered an integral component of Integrated Pest Management programs for trees and shrubs since the dawn of the plant health care era about 20 years ago. It is easy to find extension bulletins and trade journals that read “properly fertilized trees are more resistant to insects,” or that “vigorous trees are better able to ward off insects and diseases.” However, a recently published review of a large number of scientific studies found that in virtually every case, fertilization decreased tree resistance to insects. I have reached the same conclusion from my research. Clearly, fertilization has many beneficial effects on tree nutrition and growth, and prescription fertilization is an important component of plant health care programs. However, the evidence does not support claims that tree resistance to insects is enhanced by fertilization. On the contrary, there is substantial evidence that fertilization decreases tree resistance to insects.

Why does fertilization decrease resistance?

1. by increasing the nutritional value of the plant
2. by decreasing concentrations of defensive compounds.

The growth and survival of insects is frequently limited by the nutritional quality of their host plant, primarily the protein content. By increasing the protein content of plant tissues, fertilization increases the nutritional quality of trees for insects just as it increases the nutritional quality of forage crops for livestock.

Trees and other plants defend themselves from insects by producing defensive chemicals, commonly known as phytochemicals or secondary metabolites. These include alkaloids (such as nicotine), terpenes (found, for example, in the resin of pines), phenols (such as flavonoids, lignin and tannins), and compounds that release cyanide when consumed (found in cherry and some other trees). The need for insects to adapt to these defensive chemicals is the primary reason why most insects feed on one or a few closely related species of plants. Insects such as gypsy moth that feed on many plants are the exception. Gypsy moth is well adapted for feeding on leaves with high levels of phenols, but generally avoids trees that contain alkaloids. Recent studies have shown that phytochemicals also play key roles in protecting plants from abiotic stress, including drought, heat, air pollution, and damaging radiation.

Experimental evidence indicates that fertilization decreases levels of defensive compounds because a trade-off exists in the energy budget of trees between growth and defense. It is well documented that trees have a limited energy budget that they have to appropriate accordingly. Photosynthetic carbon used to support additional growth is not available for other uses, including the production of defensive compounds. Trade-offs between growth and reproduction — or growth and accumulation of — storage reserves are well documented. A number of recent studies have also found similar trade-offs between growth rate and defense.

The carbon budget of a tree is dependent on the total leaf area of the tree, which is dependent on both the number and size of leaves, and the photosynthetic rate of individual leaves. Fertilization increases tree growth primarily by increasing the total number and size of leaves on the tree, but has little effect on the photosynthetic rate of individual leaves. Carbon is exported from existing leaves to support active growth of leaves, shoots, and stems. Any carbon that is exported from a leaf is not available to produce defensive chemicals in that leaf.

The metabolic processes necessary to support growth are quite sensitive to nutrient and water availability, and are slowed in response to even moderate deficiencies. On the other hand, pho-
tosynthesis in preexisting leaves is quite resilient to stress, and does not become limited until nutrient deficiency or drought stress become quite severe. Thus, even when moderate nutrient or drought stress limits vegetative growth, high rates of photosynthesis are still maintained in existing leaves, and carbohydrates accumulate in the plant. Since each individual leaf has the same carbon budget (same rate of photosynthesis), but is exporting less carbon to support growth, more carbohydrates will be available for production of defensive compounds and storage carbohydrates. For this reason, defensive chemicals and storage reserves accumulate in higher concentrations in slower growing plants, which enhances their resistance to insects. Trees with greater leaf area do have a larger total carbon budget and higher overall levels of defensive compounds at the whole tree level. However, these defenses are proportionally spread thinner over the larger canopy, and are less concentrated at the point of attack.

Fertilization does not have a major impact on photosynthesis because trees compensate for nutrient limitation by manipulating the number, size, and thickness of leaves.

Nitrogen is the element that most commonly limits tree growth. A tree is faced with a dilemma in how to best allocate its nitrogen, most of which is used to produce photosynthetic machinery. On one hand, the tree could spread its nitrogen across many leaves, thereby maximizing total leaf area, and the amount of light intercepted. However, because the nitrogen would be diluted over a large area, the rate of photosynthesis by each leaf would be lower than if nutrients were concentrated over a smaller area in fewer leaves. Alternatively, the tree could produce fewer, smaller leaves with more nitrogen concentrated in each leaf. Each leaf would have a high photosynthetic rate, but the total area of the canopy would be lower, and the tree would intercept less light.

Is it better to produce many leaves with a lower rate of photosynthesis, or fewer leaves with a higher rate of photosynthesis? Studies show that trees actively manage their nutrient supply, producing the best compromise for their specific situation. Under low nutrient conditions, trees produce smaller, thicker leaves. They also increase root growth in order to increase nutrient uptake. As a result, the high rate of photosynthesis necessary to maintain a strong energy budget is maintained, but growth is decreased because total leaf area is decreased. In this way, trees adjust their growth rates and canopies to the supply of available nutrients, which allows them to produce a dark green canopy and maintain high rates of photosynthesis even on severely nutrient-deficient sites.

The responses of trees to variation in soil fertility make sense from a survival standpoint. If a tree in a fertile environment does not grow rapidly, it will soon lose sunlight to other trees that do use those nutrients for rapid growth. In nutrient-limited or stressful environments, slow growth is not as critical because its neighbors are not growing fast either, but higher levels of phytochemicals would increase insect resistance and stress tolerance in environments where the potential for regrowth of lost or damaged tissues is very limited.

What does this mean for the care of trees in the landscape? Consider, for example, two trees that initially are the same size. One is placed on a fertilization program and the other is not. Clearly, the fertilized tree will grow faster (assuming it is the supply of nutrients that is limiting growth, rather than some factor such as high soil pH or low oxygen that is preventing

Pines and other conifers defend themselves from bark beetles by producing toxic resin that also provides a physical barrier to attack. Researchers have found that fertilization of loblolly pines decreased resin production.

Fertilization stimulates an increase in foliage production. The growth of immature leaves, which are net carbon "sinks," is dependent on carbon translocated from neighboring mature leaves, which act as carbon "sources." Any carbon exported from mature leaves to produce new foliage is unavailable to support the production of defensive chemicals in the existing leaves.
uptake of nutrients that are present in adequate amounts). However, since fertilization has little impact on photosynthesis, both trees will initially acquire the same amount of carbon. The fertilized tree will begin to grow faster because it will use more of its photosynthate to produce new leaves. The non-fertilized tree, on the other hand, will allocate proportionally more of its photosynthate to the production of defensive compounds, storage carbohydrates, and root growth, and thus will be more insect-resistant and stress-tolerant.

Whether or not fertilization is appropriate in this case depends on the goals and expectations of the client. If rapid growth is desired, then fertilization is clearly warranted, especially if the risk and consequences of insect attack and drought stress are minimal or can be easily managed. On the other hand, if the client is satisfied with the size and growth rate of the tree, then fertilization could be counter-productive, especially in a low-maintenance landscape where insect resistance and stress tolerance are important.

Experimental evidence from our research

In the last couple of years, we have conducted a number of experiments to examine the effects of soil fertility on growth and insect resistance of several species of trees. We found that fertilization had similar effects on growth, photosynthesis, phytochemical concentration, and insect resistance of paper birch, river birch, poplar, willow and crabapple. In all cases, the effects were consistent with the responses described above. Fertilization increased tree growth but had no effect on photosynthesis. Fertilization also increased foliar nitrogen concentrations and decreased concentrations of phytochemicals, which in every case decreased the resistance of the trees to insects. Japanese beetle preferred to feed on river birch trees mulched with composted yard waste than on trees mulched with ground wood, which had lower levels of nitrogen and higher concentrations of phenolic compounds. Trees mulched with compost grew faster despite receiving 50 percent more defoliation.

Fertilization increased the growth rate of gypsy moth on several species of trees.

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For example, containerized black poplar trees that received an optimal fertilization regime grew twice as fast as plants in the low fertility treatment. Soil fertility did not affect photosynthesis, but the high fertility treatment more than doubled total leaf area. However, leaves of fertilized trees had lower phytochemical and higher nitrogen concentrations. Consequently, gypsy moth larvae grew 84 percent faster on the faster growing fertilized trees. In the same experiment, fertilization had very similar effects on carbon allocation and insect resistance of willow.

In a field experiment with established paper birch trees, we tested a fertilization program based on rates and timing consistent with those specified by the ANSI A300 Tree Fertilization Standard. We found that fertilization had no effect on photosynthesis, but increased tree growth. However, fertilization also decreased birch resistance to gypsy moth and forest tent caterpillar. Larval survival was significantly higher on fertilized trees, which had lower concentrations of phytochemicals.

Another experiment examined the effects of fertilization regimes in the nursery in one year on the performance of crabapple trees in a low-maintenance landscape the following year. Once in the landscape, trees were irrigated only at the time of transplanting, and were not fertilized. We found that the fertility treatment in the nursery had a big effect on their growth in the landscape the following year. Trees that received the highest fertilization rate in the nursery grew faster than trees that received intermediate or low rates of fertilizer. We saw no difference in their photosynthesis rates, but we did see a trade-off between the growth and defense, with fastest growing trees producing lower levels of defensive chemicals. We also found that gypsy moth larvae grew 49 percent faster on high than on low fertility trees, and eastern tent caterpillar larvae grew 53 percent (!) faster on high fertility trees.

John Lloyd, a doctoral student working in my laboratory, found the same pattern when he used mulch to manipulate soil fertility. River birch trees mulched with composted yard waste grew faster and higher foliar nitrogen concentrations than trees mulched with ground wood pallets. Lloyd conducted a detailed analysis of mulch effects on microbial activity and nitrogen cycling and showed that this is because the composted yard waste (with a low carbon:nitrogen ratio of 17:1) served as a continual source of slow-release nutrients as it was decomposed by microbes. On the other hand, as microbes decomposed the ground wood (with a carbon:nitrogen greater than 100:1), they tied up the available nitrogen, which decreased plant growth.

The faster growing trees mulched with composted yard waste had lower concentrations of defensive chemicals and received 50 percent more Japanese beetle defoliation. Interestingly, despite receiving more defoliation, these trees still grew faster than the trees mulched with ground wood pallets. If these trees had been
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TREE CARE INDUSTRY - MAY 2001
sprayed to prevent defoliation, they probably would have grown even faster. A month after the Japanese beetles had finished feeding, damaged leaves had dropped, and the aesthetic impact of Japanese beetle was no longer evident. Furthermore, the faster growing trees were ornamentally superior because of their more attractive exfoliating bark.

Most of the studies that I have referenced so far have dealt with the effects of fertilization and soil fertility on host quality for leaf-eating insects. Our research has not focused on sucking insects such as aphids and scales, since many studies have shown that fertilization favors sucking insects such as aphids. Only a few studies have addressed the effects of fertilization on stem-invading insects such as woodborers and bark beetles that feed on phloem tissue, which girdles trees, often fatally. These studies do not support the idea that fertilization increases tree resistance to these insects.

The trunks of pine trees and other conifers produces a resin containing terpenes that are toxic to bark beetles, and which also provides the tree with a physical barrier that repels insects. A study recently published in the journal Tree Physiology found that fertilization dramatically decreased the production of this resin in pine trees. I studied the effect of fertilization on bronze birch borer resistance, and found that fertilization had no effect. However, drought stress dramatically decreased boron resistance. Furthermore, 1 inch of irrigation each week was sufficient to keep trees highly resistant to bronze birch borer, even during an outbreak when neighboring trees that were not irrigated were killed.

**Fertilization and stress tolerance**

Several studies have found fertilization to decrease the drought stress tolerance of trees. It is well documented that fertilization increases the shoot:root ratio of seedlings and mature trees. By proportionally increasing shoot growth and increasing root growth, fertilization increases the water requirements of the tree while proportionally decreasing the capacity of the tree to acquire water. Recent studies also indicate that phytochemicals, which are generally decreased by fertilization, help protect trees from drought stress. We studied the effects of fertilization on the drought stress tolerance of crabapple. We found that during a severe drought, the photosynthetic rate of crabapples that received the low fertilization rate was more than 100 percent higher than that of faster growing trees that received the high fertilization rate. However, when soil moisture was favorable, fertilization had no effect on photosynthesis.

Studies have also shown that fertilization decreases storage carbohydrates, which may compromise the ability of a tree to recover from stress. It has been speculated that fertilization may increase tree tolerance to defoliation. Only a few studies have examined this question (none with mature trees), but all found that fertilization has no effect on the ability of trees to tolerate defoliation, perhaps because the growth of defoliated trees is limited more by lack of carbon than by lack of nutrients.

**Summary**

Does this mean that fertilized trees will actually receive more damage in the landscape? We don't know. Data from studies under landscape conditions in an urban environment are lacking, but the evidence does suggest that potential. In a number of randomized studies conducted in forests or experimental research plantings, fertilized trees did experience more insect damage. We do know that fertilization does increase the growth and can enhance the aesthetic quality of trees. It is also clear that claims that fertilization increases insect resistance cannot be supported by evidence. In fact, a large body of scientific evidence has emerged that shows fertilization almost always decreases tree resistance to insects. This strong pattern has emerged in spite of great variation in experimental conditions, which include field and container studies, as well as different rates, formulations, and timing of applications. This suggests that fertilization affects insect resistance through general responses of trees to increased nutrient availability, rather than through specific effects of particular formulations.

There is a role for prescription fertilization in a plant health care program, especially in high maintenance landscapes. However, fertilization programs should be implemented with an understanding of potential consequences for pest resistance and stress tolerance.

Dr. Daniel A. Herms is an assistant professor at The Ohio State University, Ohio Agricultural Research and Development Center in Wooster. His research projects focus on physiological responses of trees to cultural practices, natural tree resistance to insects and monitoring strategies for insect pests. This article was excerpted and adapted from a presentation at TCI EXPO 2000 in Charlotte, N.C.
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Congress Proposes New Ergonomics Rule

On March 22, Sen. John Breaux, D-La., offered a stand-alone bill that would force the Labor Department to adopt a wholly new ergonomics standard within two years to succeed regulations overturned by Congress and the White House earlier in the month.

The proposal, S. 598, mirrors an amendment offered earlier in the month to an unrelated bankruptcy reform bill. The amendment was struck from the bankruptcy bill March 15.

In the House, Rep. Christopher John (D-La.) introduced a companion measure to the Breaux Senate bill March 27.

How Congress and the Bush administration should proceed with ergonomics regulations will be the focus of an April 26 hearing scheduled before the Senate Appropriations Subcommittee on Labor, Health and Human Services and Education. Labor Secretary Elaine L. Chao and the Health and Human Services and Education Appropriations Subcommittee on Labor, Health and Human Services and Education. Labor Secretary Elaine L. Chao, the associate solicitor of labor for occupational safety and health, are confirmed for the hearing.

The subcommittee’s chairman, Sen. Arlen Specter (R-Pa.), was one of 56 senators who voted to rescind the Clinton administration rule.

Breaux and other senators argued that Congress should support action on a follow-up rule by the Bush administration’s Labor Department.

Under the new bill, any future OSHA rule would have to “set forth in clear terms” the circumstances under which an employer would be required to address ergonomic hazards and spell out the measures required of an employer to comply with the requirements. A new rule also would have to avoid any conflict with state workers’ compensation programs.

OSHA also would be barred from developing regulations that “apply to non-work-related musculo-skeletal disorders that occur outside the workplace” or those that occur offsite but are aggravated by work.

Proponents of the new bill say Congress needs to provide forceful direction to OSHA to ensure that a more reasonable regulation is developed quickly. But the proposal has yet to attract many of the Democrats who defended the OSHA rule when it was rescinded under the Congressional Review Act, or CRA.

The CRA provides Congress with a quick method of voting up or down on controversial federal regulations.


The concept of a two-year deadline emerged during debate just hours before the Senate voted to rescind the Clinton administration rule, 56-44, on March 6. Most of the senators who are co-sponsoring the Breaux measure – Lincoln, Landrieu, Stevens, Specter, and Miller – voted that day to kill the OSHA rule.

Only four of the current co-sponsors, all Democrats, voted to protect the Clinton administration’s regulations: Johnson, Cleland, Nelson, and Feinstein.

Employers must address bilingual barrier

The tree care industry must address the safety issues raised by the increasing number of Spanish-speaking workers on its job sites.

Looking out for the interests of Hispanic workers is not only good business and the right thing to do, it is also a recognition that the labor pool contains a growing percentage of these workers. After growing by 58 percent in the last 10 years, Hispanics are now the nation’s largest minority group and are projected to account for 25 percent of the population by 2050, according to the U.S. Census Bureau.

Training workers in a language they can understand happens to be something the Occupational Safety and Health Administration is beginning to stress as well. As an example, in one release issued by OSHA’s Atlanta-East area office, an agency official said that employers are responsible for training every worker “regardless of their understanding of the English language.”

The good news is that these workers are filling a gap in our industry’s labor force. With the country’s changing demographics, there are not enough young workers born in the United States to fill entry-level, manual-labor jobs. Also, many recent Hispanic immigrants arrived in this country with limited education, and will be seeking out physically demanding jobs that young native-born Americans typically shun.

Getting past the language barrier not only increases productivity and safety awareness, it can also create a larger talent pool from which to recruit workers. Once word gets out that you care about your Hispanic workers, and they have someone with whom they can actually communicate, you become an employer of choice.

Peter Gerstenberger is vice president of business management, safety and education for the National Arborist Association.
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Out of Control?
By Mary McVicker

In business, “controls” and “control” are terms that everyone seems to use differently. The result is a vague sense about the word “controls” — and a strong temptation to ignore it altogether. “Controls” does, after all, sound like iron-hand rule of the Czars. It also, unfortunately, sounds like something appropriate for big business only. Entrepreneurs ignore controls at their peril.

Controls, in fact, are monitors or early warning signs of potential problems. Controls provide checks and balances; they lessen the probability of embezzlement or employee fraud. And controls provide milestones that indicate the progress or direction of a business.

Many entrepreneurs find it difficult to keep a handle on every aspect of the operation. Since the financial side of running a commercial tree care business isn’t why most owners entered the profession, many tend to focus on scheduling, maintenance or sales instead of the finances. Controls are a major resource for keeping an eye on the money.

Let’s look at some key types of controls as they apply to different functions within a business.

Cash controls

Because cash is such a vulnerable area for theft or mismanagement, cash controls warrant particular attention. A business that’s perilously short of cash is virtually out of business. When considering cash controls, it’s useful to look at the various functions of cash management: taking in; depositing; paying out; keeping records.

Problem areas include:
Potential problems abound in managing cash. The most frequent are:

- Inadequate cash flow. Many business operations depend on cash for critical expenditures such as salaries, expansion, inventory purchases and hiring. A small business that doesn’t have substantial cash reserves — and most don’t — relies heavily on cash flow, making it particularly vulnerable to variations in the rate of flow.
- Loss of cash. Losses come about through theft, mismanagement or, occasionally, destruction. The amount of loss from theft alone is staggering.
- Mismanagement is a less-publicized cause of lost cash, but it is significant. Mismanagement includes loss of interest income, poor purchasing procedures and poor payment practices.
- Improper or inadequate accounting. When accounting procedures are “loose,” there is greater potential for loss.

Because of the importance of cash controls, many large corporations have cash audits, where samplings of all procedures involving cash are scrutinized. A full-scale cash audit might not be practical for a small business, however, any business that suspects or is concerned about the possibility of a problem with its cash management might consider hiring an accountant to conduct an audit or to provide advice about the firm’s cash management system. Many small businesses have an annual audit as a matter of practice.

Control procedures to implement include:

- The person who disburses the cash should not have the responsibility for cash receipts.
- The person who receives the cash should have no other cash-related responsibilities.
- Accounting tasks should be done by someone who is not responsible for either cash receipts or disbursements.
- Bank reconciliations should be done by someone having no cash responsibilities. This is extremely important. Pay an outsider if you need to, but keep bank reconciliation duties separate from cash or check responsibilities.

- The owner and manager of the business should be involved with the company’s books. Many commercial arborists tend to be involved with the work of tree care, and have a limited interest in bookkeeping or accounting. That doesn’t always work. Managers and owners need a basis of “survival accounting” to keep them informed, help them make more informed decisions, and keep track of what’s going on with the business.
- Cash problems, particularly losses, can often be identified if the owner takes the time to be involved. He or she can then spot discrepancies — where the on-paper results of the business’ operations don’t match what the company is actually doing. And, put quite simply, the more someone knows about the business’ operations, the better he or she can manage that business.
- The books should be closed by an outside accountant or by an in-house accountant who has no cash responsibilities.
- Checks should be deposited promptly.
- Cash should be deposited promptly.
- The business should invest time and effort into cash planning.
- Petty cash should be kept to a minimum, with limited access.
- Bills should be paid routinely and according to specified procedures.

Profitability

Problem areas include:

- Services are incorrectly priced.
- Bids are made randomly.
- Decision-making gets bottlenecked.
- Decisions are made at a level too far removed from the customers.
- There is a lack of accountability with respect to employees.
- Employees are stuck with inefficient work procedures.
Control procedures to implement include:
- Investment in a professional for cost accounting help
- Keeping correct and current cost information in pricing
- Possibly rearranging work areas, furniture, equipment or locations to improve efficiency – and to make the work areas more comfortable for employees
- Delegating decision making as far down the line as possible

Personnel
Employees are key to a business' success or failure. They are the ones who generate the income in many businesses it's the employees on the "lower level" – not the higher paid middle management – who are the income producers, a fact some businesses ignore. (Upper management is a not-for-profit activity.)

Problem areas include:
- Employees represent their businesses in a poor manner.
- Employees offend or irritate customers to the point where the customers go elsewhere.
- Employees are used ineffectively.
- Skilled employees leave.
- Employees record transactions improperly, miscalculate invoices or make other errors that result in business losses.

There are many areas of potential problems. Some of the problems involve employee shortcomings, while others are a result of the employer’s actions or inactions.

Control procedures to implement include:
- Put the business in a competitive position with respect to hiring good employees.
- Be specific about what an employee should know and do to be effective in the job. Specify which skills an employee should have when hired, as well as which skills the business is willing to provide training for.
- Conduct background checks on potential employees. Contact past employers and references, and check records on schooling. Conduct drug screening if appropriate.
- Carry fidelity bonds (surety) on employees who handle money.
- Establish adequate supervisory procedures. There’s a fine line between too much supervision and too little. Be wary of micromanaging; it’s not an effective control, and it demoralizes and aggravates employees.
- Utilize correct payroll and personnel procedures.
- And last but certainly not least – TRAIN!

Conclusion
Underlying controls is the question of cause and effect. A lack of proper controls creates a problem area.

The semantics used in reference to controls aren’t that important. What is critical is that a business without controls, however the word is used, is headed for trouble.

Mary McVicker was a tax attorney before leaving to teach and write. She has been a small-business consultant and freelance writer in Brookfield, Ill., for more than 16 years.
A one-time installation of Typar Premium Landscape Fabric can prevent weed growth for years, and once it's covered with mulch, it does its job unseen. Its performance is guaranteed when it's installed and covered properly. Typar Premium Landscape Fabric is made of continuous polypropylene fibers bonded by heat and pressure to create a uniform and porous nonwoven fabric that is resistant to punctures, rotting, mildew, microorganisms and chemicals. Since the fibers are continuous, the fabric will not unravel or tear. Typar Premium Landscape Fabric is packaged in a variety of sizes ranging from 3 feet by 25 feet to 151 feet by 300 feet. It can be used for soil retention for timber retaining walls, around blind drains, as weed control under decks, for soil retention in planters and pots, and as an interceptor trench drain. For more information, call (800) 321-6271 or visit www.reemay.com.

Bandit has introduced the new totally digital Auto Feed Plus to the tree care and waste disposal industries. This feed system control device not only starts and stops the feed, but will also reverse a unit's feed system. When reversing the feed system, material is pulled out of the cut, preventing wood from rubbing against the disc or the knives, quickening recovery time, and eliminating the potential for burning and dulling knives. The reverse feature is adjustable from a millisecond up to 65 seconds. Auto Feed Plus is available on all Brush Bandit hand-fed brush chippers and whole tree chippers and is standard on the 3680 Beast Recycler. For more information, call (800) 952-0178 or visit www.banditchippers.com.

Wood-Mizer's L300 Thin Kerf Headrig was designed to do two things: make small circle-saws obsolete, and offer higher production than stationary versions of portable bandmills. The operator station on the LT300 is like high-production mills, using two joysticks, programmable setworks and an optional climate-conditioned cab. The LT300 is also available with optional in-feed and out-feed material handling. The key to increasing profit is maximizing yield, while not losing production. The LT300 accomplishes this by utilizing Wood-Mizer's .098 kerf bands. For more information, contact Wood-Mizer at (800) 553-0182 or www.woodmizer.com.

Brentwood Industries, Specialty Products Group, has released an eight-page, full-color catalog displaying its full line of wheelbarrows. Most of Brentwood's wheelbarrows consist of a non-corrosive, heavy-duty polyethylene pan, cold-rolled steel undercarriage, American Hardwood handles, and multiple tire options, including single and double-wheel models. Steel pan wheelbarrows are also available for use with asphalt and similar applications. For a copy of Brentwood's new wheelbarrow catalog, call (610) 374-5109 or visit www.brentwoodindustries.com.
FECON, Inc., has introduced five new Bull Hog mulching attachment models for excavators, available for operation with 55 to 500 hydraulic horsepower to process both large- and small-diameter material. The Bull Hog enables excavators to mulch trees (standing or fallen), brush, shrubs and stumps up to 24 inches in diameter, making it ideal for land clearing, right-of-way construction/maintenance, storm water drainage area maintenance, forestry and for reducing the risk of wildfires in urban areas. Utilizing individual fixed-position carbide-tipped cutting tools, the Bull Hog quickly grinds wood and vegetation. The Bull Hog coarse-grinds large- and small-diameter material or finely mulches it into the soil surface by "pull working," an operating method that re-circulates material through counting-cutting rakes to cut it down to size. All Bull Hog models are factory-equipped with hydraulic motors. For more information, contact FECON Inc. at (800) 528-3113, visit www.fecon.com or e-mail fecon@fuse.net.

 Arborwear introduces its new lightweight pants. The new design offers the same protection as the original pants, but are constructed out of a lighter-weight 10 oz. bull denim. Ideal for hot summer weather! For more information, call (888) 578-TREE or visit www.arborwear.com.

The EZ 2-Cycler is a low-cost, dual-chamber fueling system that mixes 2-cycle oil and gasoline. Achieving precise oil-to-gas mixtures on mowers, cultivators, weed cutters, sprayers and other power tools protects engines and maximizes performance. With the EZ 2-Cycler, all it takes is setting a dial to meet any equipment maker's specifications, whether those specifications are expressed in ratios, ounces or milliliters. A companion product, the EZ 2-Mixer, is designed to mix liquid fertilizers, pesticides, defoliants or other fluids with water. For more information, call (877) CCI-PROD or visit www.ezdispensers.com.

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Bayer Corp. changes name, reorganizes

Bayer Corporation has changed its name to Bayer Corporation, Professional Care. The new name is designed to reflect its focus on professional service.

In addition, Bayer has added several new members to its team: Michael Daly has joined as the turf and ornamental brand manager; Cathy Fuhrman is commercial market manager; and Jennifer Remsberg has taken over as residential market manager.

In addition to the new employees, several current employees have changed roles: Jeff Vannoy moved from his position as field sales representative to home health brand representative in the Kansas City office. Steve Ehart moved from market manager to brand manager for all Bayer pest management products; Renee Holmes, communications manager, has been appointed accolades program director.

Neil Cleveland, former turf and ornamental brand manager, now serves as sales manager for the Eastern area. Sales manager Mike Ruizzo covers the Western area, and director of sales Rich Burns has responsibility for Florida.

Orkin, Bayer team up for traveling exhibit

A pest management company and a manufacturer of pest management products have come together to sponsor a 53-foot mobile unit that promotes the same insects they spend most of their efforts eliminating.

Orkin Exterminating Co. and Bayer Corp., Professional Care - along with the Smithsonian’s National Museum of Natural History and CNNfj.com - have introduced the Smithsonian O. Orkin Insect Safari. The traveling exhibit, which launched in March and will circulate through November, will visit more than 100 cities, educating students of all ages about science, specifically about insects and their place in our world.

The Insect Safari is filled with interactive displays, scientific facts and an array of imaginative, colorful illustrations. The exhibit also features live insects provided by local entomologists along the tour route.

For more information, visit Insectsafari.com or call Sara Buck at (800) 767-5021, Ext. 1299, Jennifer McDuffee at (404) 888-2846 or Jacqueline Corbett at (202) 357-2458.

John Deere division announces name change

Deere Power Systems Group has changed its name to John Deere Power Systems. John Deere Power Systems is a division of Deere & Co.

Last year, the company announced a companywide effort to combine changes to its John Deere trademark with a more focused effort to manage the corporate brand. This initiative is aimed at further preserving, promoting and enhancing the John Deere identity.

Growth for hand-held power equipment in 2000

Shipments in the hand-held power equipment industry for most products remained strong in 2000 due to the favorable economic climate. The following are 2000 industry shipments for portable, gasoline-powered equipment in the United States:

- **Chain saws**
  - During 2000, industry shipments of gasoline-powered chain saws fell 10 percent to 2,126,680 units. It is estimated that industry shipments for 2001 will remain at 2000 levels.

- **Trimmers and brushcutters**
  - During 2000, industry shipments of gasoline-powered trimmers and brushcutters increased 9 percent to 4,749,500 units. It is estimated that industry shipments for 2001 will increase 2 percent.

- **Hand-held blowers**
  - During 2000, industry shipments of gasoline-powered hand-held blowers increased 15 percent to 1,895,030 units. It is estimated that industry shipments for 2001 will increase 5 percent.

- **Backpack blowers**
  - During 2000, industry shipments of gasoline-powered backpack blowers increased 6 percent to 308,450 units. It is estimated that industry shipments for 2001 will increase 2 percent.

- **Cutoff saws**
  - During 2000, industry shipments of gasoline-powered cutoff saws decreased 2 percent to 119,720 units. It is estimated that industry shipments for 2001 will remain at 2000 levels.

- **Hedge trimmers**
  - During 2000, industry shipments of gasoline-powered hedge trimmers increased 19 percent to 360,900 units. It is estimated that industry shipments for 2001 will increase 5 percent.

- **Edgers**
  - During 2000, industry shipments of gasoline-powered edgers increased 16 percent to 77,350 units. It is estimated that industry shipments for 2001 will increase 2 percent.
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Digging Deep for Profits

By Michael Roche

Spade attachments are easily attached to loaders such as this Bobcat 773 G-Series.

This Vermeer 3300 has a slim profile that allows it to squeeze between tight rows and under low-hanging branches.

Give your average arborist the choice between cutting and dragging a 5,000-pound tree to a chipper or planting a tiny dogwood, and the tree worker will take the cutting and chipping every time. Tree workers hate digging holes. But give that same person a tree spade and chances are he will happily plant away for a few days. Tree workers love running machinery.

Arborists have traditionally shied away from the tree planting business because it is time consuming, the machinery is expensive, and the crews just don’t like it, resulting in poor workmanship. Enter tree spade rentals. With good planning and research, tree spade planting can be very profitable, with a finished product you can be proud of. The investment is low and the returns are high if you do it right. There is also the incentive of utilizing machinery you already own. Many tree care companies have a skid steer or three-point hitch tractor, so all they need to rent is the spade attachment. And even if they don’t own the drive machine, they can rent the whole unit or even a trailer-mounted spade. This latter unit pulls behind a pick-up, similar to a stump grinder.

Bruce Layden of W.M. Biers of Albany, N.Y., a machinery sales and rental business, says he plans to rent tree spades for skid steers because “they are one of the few pieces of equipment you can still make good money at.”

How good? Well, a tree spade attachment rents for between $500 and $1,000 per week, depending on the which part of the country you live in. Expect to pay about twice that for both the entire skid steer and spade rental. A trailer-mounted spade rents for between $500 and $1,800 per week, again depending on the location. The people who rent just the spade attachment for $500 per week report making as much as $1,000 to $1,500 per day and approximately $4,000 to $5,000 per week with one operator. Obviously, the companies paying more for a spade rental can make even greater amounts.

It all might seem a little elementary, but in a nutshell, here is how you do it.
First, look into two things: competition and customers. Is there a lot of competition in your area for this business? Determine how much of a need your customers have for this service. After that, line up as many accounts in succession as you can. That way, when you rent the tree spade, you can knock out all the jobs in a short period of time.

In some areas of the country, especially rural ones, it may be difficult to find a business that carries tree spade rentals. If that is the case, see if a local business will buy a spade on the condition that you will line up several accounts and guarantee a minimum amount of business. Several rental companies have responded favorably to this idea.

Joe Shattie, sales manager of Southworth-Milton, a Caterpillar dealership in Richmond, Vt., says his company has approached the skid steer and tractor rental attachment issue a little differently. “What we do best is sell equipment,” said Shattie. Therefore, the company has established “rental alliances” with independent rental shops to sell and rent Cat equipment. If a customer contacts one of these rental companies about a particular attachment, Southworth-Milton can have the attachment shipped out of the Boston area to most New England locations the next day. If the machine is rented often enough, Southworth-Milton can offer a great price when selling that piece of equipment after a couple of seasons. In that way, Cat is able to maximize the use of its rental pieces and the smaller rental companies are not burdened with carrying too much inventory.

Kenny Van Der Pol of Ziegler Rentals in Des Moines, Iowa, one of a chain of Cat Rental Stores, says his company started carrying a tree spade attachment for skid steers in 2000. It had only a fair rental record, but he believes it will get better. Last year, Van Der Pol said, many of their customers did not know they had the attachment, and 2000 was a dry year in Iowa. This year they are promoting it more and — providing the weather is more favorable — they expect excellent spade rentals.

And planting is only one side of the rental coin. Transplanting plant material from one side of a lot to another can become an additional customer service. Everything from small trees to rhododendrons reported a great track record for making money, says Van Der Pol. “Now we can tell our customers that if they want to transplant trees and make some big dough, we’ve got the machine.”
The Optimal 850 tree spade is a compact machine for digging rootball up to 33 inches in diameter.

Businesses that rented spades last year reported a great track record for making money, says Van Der Pol. "Now we can tell our customers that if they want to transplant trees and make some big dough, we've got the machine."

Vermeer Manufacturing of Pella, Iowa, makes several models that are already in rental fleets or will be this spring. They manufacture two different versions of the TS 33 attachable to either skid steers or three-point tractor hook-ups. This unit handles up to 3-inch caliper trees (measured one foot off the ground). A drive machine should have a minimum 5,600 pounds of operating weight and a tip load rating of at least 3,400 pounds. Additional ballast might be necessary. Also, the machine should have a minimum hydraulic pressure of 2,000 psi.

The TS 44A is the towable unit and comes with a 20 hp Kohler engine. It can handle trees up to 4-inch caliper (again, measured one foot off the ground).

The people at Vermeer explain how they recommended transplanting trees around an individual property: First, call for an underground wire check. Then dig the receiving hole and place the soil next to the tree to be dug for transplanting. Next, dig the tree and move it into the receiving hole. Finally, go back to the pile of soil and put it into the hole where the transplanted tree came from. If all goes well, you can transplant two trees in a little less than an hour.

Here are a couple of tricks to keep in mind. When removing the soil from the receiving hole, use a tarp. The ball will fall apart and will have to be shoveled back into the hole. As an alternative, consider buying a pod that you can put the receiving hole's soil into. Also, if you are driving across a nice lawn, you will have to lay plywood down so as not to tear up the turf. This will require a second person to move sheets of plywood ahead of the machinery and can quadruple the time involved. Keep this in mind when pricing.

If you are moving trees from one property to another, the logistics become more difficult. First you need to dig the receiving holes and put the soil in a dump truck. Then load up the machinery and drive to the site where the trees are located. At this site you dump the soil, then dig the trees. Each tree will need to be put in a basket and loaded onto the truck and trailer. Next, the holes you just took the trees from will need to be filled with the soil you delivered from the other location. Drive back to the job site and plant the trees in the designated holes. Whether
you leave the trees in the baskets is still one of the great landscape controversies, and you need to determine which one you are more comfortable with.

Because moving trees from one property to another is significantly more time consuming than single-property transplanting and has the potential for more things going wrong, arborists should consider staying with the more simple job of transplanting at one site until they have all the logistics worked out.

Here are a couple of additional pointers from experienced arborists:

- Charge a flat fee—instead of by the hour—for each tree moved. A 2½-inch to 3-inch sugar maple bought from a nursery can easily cost a homeowner $500 installed. If you move two trees in an hour and charge $100 per tree, it shouldn’t matter that you just made $200 for that hour.
- It is not recommended that you transplant in summer but if you have to, be sure to go down 1 inch in caliper and spray the leaves with an anti-desiccant.
- Also, increase your chances of winning a contract by giving the customer two prices—one for just moving the tree, and a second price for a guarantee plus one year maintenance of mulching, staking and fertilizing.

This all sounds like easy money, but care must still be taken. Plant a tree poorly or transplant one too big for the machine and it will die. However, the opportunity for arborists to transplant successfully seems excellent. All too often, tree care companies are faced with high overhead and low net. This is one chance where the exposure to heavy capital outlays is at a minimum and the ability to make good money in a short period of time is excellent. A few years from now, used spade attachments will be coming up for sale as rental companies look to upgrade. There is minimal maintenance to a spade, so they should be in nice shape. By positioning yourself now and establishing a customer base for the implement, you can look into purchasing these attachments with confidence in the future.

*Michael Roche is a certified arborist and owner of Stowe Tree and Landscape Services in Stowe, Vt.*

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Some energy industry analysts have predicted the California electricity crisis will continue into the spring and summer of 2001, with the potential for more power alerts and rolling blackouts. Worse, perhaps, is that the crisis may spread into neighboring states.

This energy crisis is more likely to affect states in the West than in the East because California is tied into a regional electrical grid. Since California doesn't have enough generation for peak in-state demand, power must be imported from neighboring western states, influencing supplies and prices in the region.

Since there is currently no national transmission grid, Midwest, Gulf Coast, and East Coast states should not be directly affected by the California energy crisis — although they will certainly see higher fuel and energy costs in general.

Indeed, the picture is not completely rosy in other areas. Industry experts generally believe that deregulation and increasing competition among utilities has deferred a certain amount of maintenance and upgrade on infrastructure in the past few years. Consequently, transmission and distribution facilities might not be in the best shape. Combined with normal outages from storms, this degradation of the electricity delivery system might cause a decrease in reliability over the next few years.

Impediments to robust electricity markets

♦ Volatile forward pricing during 2000. This will be improving in 2001 and looks much better for 2002.
♦ Bad publicity. California situation. Not really a result of deregulation but a combination of many factors such as:
  ♦ Ever-increasing demand from industrial, commercial, and residential sectors.
  ♦ No new generation in more than a decade. This will change.
♦ Existing generation was not fully modernized. This will change.
♦ Decrease in supply from “hydro” generators because of drought and growth.
♦ Major increase in 2000 in the cost of natural gas and petroleum.
♦ Legislative and regulatory “restructuring” provided little incentive for new suppliers at the “retail” level. Profits were huge at the wholesale level.

Steps commercial arborists can take

Regardless of where your facilities are located, the California electricity crisis should be a wake-up call to review and perhaps upgrade your outage contingency plans.

♦ If you maintain a backup power supply in the form of an auxiliary generator, you are in a better position than most for dealing with rolling blackouts or other outages.
♦ If you don’t have a generator, it might be time to consider installing one.
♦ Perform a comprehensive review of your outage contingency plan. Prepare, publish, and practice emergency procedures so everyone on your staff knows what to do when the lights go out.
♦ Verify that your generator maintenance and testing procedures are up-to-date and adequately maintained. Review the loads that are absolutely critical for maintaining operations. Over time, these loads increase as more and more operations become automated. Additional generation or modified operating procedures may be required.
♦ Review the state of uninterruptible power supplies (UPS) on your computer system, both network and individual PCs, and don’t forget your telephone system.
♦ Check with your local utility customer representative about special rates, and perhaps cash payment from the utility, for removing load from their system during peak demand periods. (You might be able to turn that monthly test of the generator into a cost-reducing resource.)
♦ Keep an eye out for new technologies. While fuel cells are still in the development and testing stage, someday you may find it practical to place one next to your building or in your parking lot.

Solutions for NAA members

The National Arborist Association offers its members a free resource that provides ongoing education about energy deregulation. With the Energy Buyers Program, administered by Affiliated Power Purchasers International, LLC (APPI), energy industry experts assist association members in recognizing opportunities to decrease their cost of electricity and natural gas services. APPI offers members a reliable and independent source of information on the changing marketplace, providing members with the tools they need to make informed decisions.

For more information on the Energy Buyers Program, contact APPI at 800-520-6685 or visit appienergy.com/arborist.
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Each company can lay claim to innovations that set new industry standards. By joining the pacesetters of the last century and maximizing the strengths of each, one company was created with a common mission: leadership in rope technology into the next century.

To better reflect our common mission, and the strength of our combined histories, The American Group has been renamed. The new corporate name, Samson Rope Technologies, draws upon our combined past while reflecting our mission for the future. The Samson name, along with the trademark of Samson and the Lion is the oldest continuously registered trademark in the United States. It is a great symbol to represent the combined strength and performance of our product line. It also symbolizes strength over time; longevity which can only be achieved through commitment to continuous development and the creation of new fiber combinations and constructions to provide greater strength, safety and security.

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1876-1884: Samson trademark is registered to the J P Tolman Company.

1888: Tolman incorporates Samson Cordage Works.

1889: American Manufacturing Company Founded.

1948: AMCO Introduces synthetic 3-strand nylon ropes.


1955: First Washington Net Factory established. First company to produce nylon knotted netting to fishing industry.

1961: Samson introduced the first all synthetic fiber double braided rope.

1972: Samson Nystron is the first synthetic fiber rope used to moor an oil tanker to a loading buoy in the North Sea.

1989: Herzog develops Permaflex headline for the seine fishery.

1992: AMCO perfects coextrusion and produces Ultra Blue fiber, 30% stronger and 3 times more abrasion resistant than polypropylene.


2001: Samson Rope Technologies is the banner that unites four illustrious cordage industry innovators under one name and one mission: Leadership in rope technology.
How you can use computer technology to make money? I don’t sell hardware or software and I don’t sell programming or Web services, so I can relate what’s happening without bias. You can put e-commerce to business use so that you can get more business, more money, and, hopefully, more time off.

Talk to your computer

A lot of you don’t like to type. I get around typing by using a computer program that takes what I say and puts it into text. If you don’t like to write letters but have to, you might want to spend the $150 for voice-to-text software such as Via Voice or Dragon. You will have to spend a little bit of time working with these programs – say about 30 minutes initially – to train the program to the way you pronounce words. Then, over the first three or four weeks, you will have to correct it every time you pronounce something that the computer does not understand. However, once the program is “trained,” it can be up to 98 percent accurate.

If you purchase this software, note that you will also need a sound card and microphone installed in your computer.

File your contacts electronically

One of the things that all business people should be using is an electronic contact manager.

A contact manager is a combination of an electronic Rolodex and an electronic calendar. Examples of this software are ACT, Goldmine and Outlook.

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Establish a Web presence

One of the first things that you have to do is get your own Web site. First, you will need a name (called a "url"). It should be something like "companyname.com." You can register a name at one of the bulk registration sites for as little as $12 per year. (The highest price that I have ever seen is $35 per year.) Reserve your name; if you don't, somebody else might take it!

Go to a site such as www.internic.net to see if your desired dot-com name is already being used. This site will give you a listing of various dot-com companies that will allow you to register an unused domain name. To register your name, go to www.internic.net, click on the link for The Accredited Registrar Directory, then go to Alphabetical Listing by Company/Organization Name. You will get a list of about 80 different places where you can register a name. Don't be afraid to have multiple names - you can have eight or nine names pointing to the same Web site. Put your trademark services out there. Make it as easy as possible for people to find you.

Next, you will need to have a Web site built. You can hire somebody to do this for under $300 and can have a Web hosting company host it for $10 to $20 a month. Hosting is a term that we use to say somebody has the Web site on a computer that somebody else can look at. Compare that to the cost of a Yellow Pages advertisement and think about the things that you can do! It is really amazing.

E-marketing

A lot of people talk about e-commerce; e-business is a complete collection of all the e-tools, and includes things like e-recruiting, e-commerce and e-selling. E-business allows us to work and compete in the global economy. Distributors of arborist supplies and equipment need to be worried about competitors - whom you might not even know - from the Pacific Rim or Eastern Europe are going to start advertising about their products. They are going to offer them your markup. What happens to loyalty when somebody tells them that they will give them 25 percent off? It can go right out the window.

Figure out how to use some of these e-business tools so you can keep your customers buying from you. E-commerce can reduce your cost of being in business and allow you to offer customers a better deal.

For working arborists who buy supplies, be careful about deals that are too good to be true. Just because something is advertised on the Internet doesn't mean that you can believe it.

In e-business, there are a number of areas that are very important. The first and probably most important area for everybody in this room is e-marketing. E-marketing isn't getting out there and taking an order; it's getting out there and having people find out who you are. It's getting out there and telling your customers what you can do.

E-selling

Besides e-marketing, there is also e-selling. E-selling is part of e-commerce. E-selling is bringing someone up to the point of wanting to buy. For example, let's say that there was a bad storm in an area, and a lot of trees need to be cleared and taken down. E-selling would allow you to have an area on your Web site where your
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potential customers can come in and type in what kind of tree they need removed with approximate girth and height. They receive a reply with an approximate bid and can schedule a time for you to come out and remove the tree.

Every arborist has a story about wasted time running out to a potential client’s house to give a bid. When you arrive, someone else is already there. With e-selling, you can visit hundreds of people every hour online. You can tell everybody what you can do, how you do it, and what the rules are, and you can make a schedule. Once you build the schedule, you can adjust it for when crews will be in certain neighborhoods. You can even advertise which neighborhood you will be in so that people can think about having you visit their property. The Internet is beginning to be the first place people look for services. It beats the Yellow Pages and it’s a lot cheaper too.

E-commerce

The third part of e-business is e-commerce. There are two kinds of e-commerce: business to consumer and business to business. Business to consumer is when you want to sell something – for example, you might sell tree care, such as a removal or designing a complete landscape. Business to business, on the other hand, is when you buy from distributors. What is the big difference? If you want to buy chemicals for the next planting season, or if you want to buy a lot of plants, you’re not going to go to a catalog and click on a hundred different items. The business to consumer model is not going to work when you’re buying many of items from distributors. What you want to ask is for your distributor to give you a way that your computer program to hook into their computer program so that you can do the order entry once.

One other thing that is very important about e-commerce is that it does not require the Internet. A lot of people think that because you’re on the Internet, you’re doing e-commerce. There are a lot of people on the Internet that are doing only e-marketing and e-selling. They do not do any e-commerce at all. There are people who are not on the Internet that are doing e-commerce. There are other technologies – for example, fax technology. I can take a fax, have a standard order sheet, and can give that to my assistant. He can order products for me by filling in the little circles on the sheet and sending it by fax as an electronic order into my system. I don’t have to do any re-keying.

The Internet

At the center of this mix is the Internet. There was a quote that AT&T made in describing the Internet that I think is worth repeating. They said, “It’s not about technology, it’s a new dial tone.” Think about that. Everybody is on the Internet. Your future customer base is on the Internet. If you’re not there, you are invisible.

There are many things that people do on the Internet. For about $100 you can buy a black-and-white television camera that will hook into your computer. Think about being able to take a portable computer, your connection to the telephone line and the Internet out to your shop and being able to call up the manufacturer or service center and asking them to help you repair a piece of equipment. You point the camera at a certain part and technicians can look at it and give you instructions. You can have an expert on that piece of equipment half a world away walking you through the repair so that you can get it back to the field quickly. That is money in your pocket.

The Internet will help you be in business. Research and learn about your competition. Get online and see what they are doing. Most of you work in a local area. Your competitors might have little counters on the bottom of a lot of their pages. When you see your competitor put an advertisement in the paper, go out and watch what happens to the counter at the bottom of their Web site. If that starts to go crazy, then you know the advertisement worked. You can advertise in the same place. If the number doesn’t change, you know that you don’t want to advertise where they did. Let them spend the money, while you learn from it. Don’t put the number on the Web site pages. It is private and competitive information that will help you run your business better. It is not information that you want to give out.

CD catalogs

Distributors often offer catalogs online. Every once in a while, however, the Internet is slow or a customer can’t get onto the Internet because the line is busy. Give your customer a catalog on CD.

With CD catalogs, you list all the products and give your customer training on how to use the products. Anybody providing any kind of chemical can have you MSVS right in the CD-ROM catalog so he has them on site. If you have equipment that can cause serious injury, you can put safety training on the CD. All of that can be put onto a catalog that becomes part of a CD that you can distribute to all of the members of NAA.
CD business cards

Another new item out on CD is the CD business card. There are CDs approximately the size of a business card. They have the person’s name, phone number and address on the label, but are CDs you can read on your computer’s CD-ROM.

Those who do tree work can put samples of their work on the CD. Include pictures of a tree that you have brought down, or a landscape project that you did from scratch. You can give this to potential customers and let them see your portfolio.

CD business cards cost about $1 each. Think about what a full color set of photos costs! Then look at the ability to go around, take digital pictures of work you have done and put them on a CD business card. Hand them out to customers for only $1 each. This is another aspect of e-marketing. It doesn’t mean that you have to be on the Internet; it means that you have to be able to communicate with your clients.

Privacy

Here are a couple of other things to think about. There is no such thing as privacy on the Internet. People can find out anything that you have sent to anybody. They can take any material they want of yours. The only way to protect yourself is by encrypting or encoding information so that only the people that you send it to can read it. If you’re sending private notes that you don’t want anybody else to read, use encryption. You can buy or download free encryption packages online.

Conclusion

This whole idea of the Internet and e-commerce can be a little scary. My son, who is now in his mid-20s, and all of his friends, went to school with laptop computers. He did his research on the Internet. He transmitted his papers to the professor without ever printing them out. If you want to attract and keep the best and the brightest of the next generation, you had better give them the tools that they are already so good at using. If you don’t, they will go to your competitor or another industry. The Internet is here to stay and it is changing the way that we do things. This is not a continuation of the past. There is a lot of fun stuff out there, and it will help each and every one of you stay in business if you are just willing to try it.

Steve Epner has published over 600 articles on business planning, development and management, which has appeared in major business and trade publications. Steve is a member of The National Speakers Association and The Independent Computer Consultants Association. This article was excerpted and adapted from a presentation at TCI EXPO 2000 in Charlotte.
Maryland experienced significant bad weather in 1999. In January of that year, a very localized but devastating ice storm hit the area just northwest of Washington, D.C. The following September, Hurricane Floyd struck with a vengeance, but was particularly hard on Greater Baltimore. Both of these storms left many subscribers without utility services for an unusual amount of time for this area.

Following these events, the Maryland Public Service Commission began an investigation into the preparedness of Maryland utilities to respond to major outages. Concurrently, the Governor’s Task Force to Ensure Utility Services was appointed and began its investigation. Both bodies looked into a number of issues, including:

- reporting standards
- customer communication and assistance
- tree trimming
- coordination with emergency-management organizations
- inter-utility coordination
- undergrounding of transmission and distribution
- staffing

Some parties attempted to place significant blame on the
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state’s Roadside Tree and Tree Expert licensing laws in hopes that the political pressure to find an answer to the outage problem would result in relaxation or revocation of these laws. However, the Maryland Public Service Commission (PSC) found “no indication of pervasive roadside tree interference on any utility system.”

With tree laws intact and the utilities facing a mandate for improved reliability, all parties were charged with moving forward and improving the compatibility of gray and green infrastructure. The commission directed electric utilities and telephone companies, staff at the PSC, and other interested parties to work with the Maryland Department of Natural Resources (DNR) to develop recommended modifications to the state’s policies and regulations to improve utility tree trimming and maintenance programs within utility rights-of-way.

This led to the formation of the MERTT (Maryland Electric Reliability Tree Trimming) Council. This body is composed of representatives from the PSC, DNR, four investor-owned utilities (Allegheny Power, BGE, Conectiv, PEPCO), two co-ops (Choptank Electric, SMECO), and the Maryland Department of Planning (MDP). To date, MERTT Council efforts have focused on three areas:

1. Conducting a statewide series of training sessions in an effort to establish a common ground for tree trimming standards and procedures.
2. Evaluating adoption of IVM (Integrated Vegetation Management) to manage succession for utility facility-compatible species in certain areas.
3. Modifying planting specifications noted in planning and zoning mechanisms to ensure planting of compatible species beneath overhead facilities.

Training sessions

Four training sessions took place in January and February of 2001, one each in eastern, southern, central and western Maryland. Each event was attended by the utility foresters, utility arboriculture contract personnel, and DNR personnel that work in that area, as well as by PSC and MDP representatives. A total of 119 people participated in the sessions. The agenda for the sessions included: electrical system operation; safety (including ANSI Z133.1-1994, and legal issues such as trespass, easement rights, and climbable trees); how trees cause outages; and vegetation management for utilities (including proper pruning [ANSI A300-1995, Maryland Roadside Tree Law, Maryland Tree Expert Law] and IVM).

Integrated vegetation management

Though all utilities in Maryland share similar vegetation management concerns for distribution systems, program focus varies across the state. For the two utilities in the predominantly urban area, removal of overhangs is a major concern. For the other four utilities where rural/naturally regenerating areas predominate, managing succession is a larger focus. The components of a successful
program were presented, including integration of tools such as mowing, felling, TGR's and herbicides. Results presented showed succession arrested in the scrub-shrub stage, with utility-compatible dogwoods, mountain laurel and other desirable species populating the distribution corridor.

**Planting specifications**

The need for education on right-tree/right-place issues is a major one in this effort. The MDP offered help along two lines. By designating a certain amount of land area beneath utility distribution corridors as “sensitive areas” (for example, all land within 10 feet of either side of overhead utility lines), these areas would be available for FEMA funds for pre-storm hazard mitigation (removal of inappropriate species and replacement with appropriate species). Local planning and zoning agencies would also then have to address planting of appropriate species in these corridors in their master plans. The MDP is also working on a planting guide for local jurisdictions that would indicate minimum distances from overhead facilities for various scale trees.

**Future actions**

The MERTT Council is committed to keeping state government and electric utilities working cooperatively to address environmental and electric reliability concerns in the era of deregulation. Future scheduled MERTT efforts include:

- A pilot study (beginning summer of 2001) whereby utilities and DNR personnel will use geographic information system (GIS) maps and personal digital assistants (PDAs) to exchange information related to planning and permit approval for trimming of roadside trees for line clearance;
- Technology transfer to utilities of the State Highway Administration’s localized weather data (via weather monitoring stations and in-road pavement sensors) to facilitate better projections of when ice glaze will begin to adhere to surfaces, and other pre-storm preparations;
- A study (summer 2002) on line-clearance pruning practices (heading or thinning cut) and results (including number and length of watersprouts).

MERTT members look forward to working together to maintain and improve the compatibility of gray and green infrastructure in Maryland.

Michael F. Galvin is a supervisor of urban and community forestry for Maryland Department of Natural Resources-Forest Service.

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Take a look at the average tree care company today and there's one thing you are likely to see: Some – and in some cases most – of the employees are from foreign countries. A tight labor market is weighing down on company owners looking for reliable, quality workers, and more and more of these owners are crossing borders to hire workers desperate for wages and eager to work hard.

The profiles of many of these foreign workers are similar. Many of them are from Spanish-speaking countries such as Mexico, Columbia and Guatemala. Unable to find work in their own countries, they seek work in the United States where they can earn a decent wage to send home to their families. Thankful for the opportunity, these employees usually have a solid work ethic and often prove reliable. The employers, likewise, are thankful for dedicated employees that stick around.

Despite the mutually rewarding relationship that can flourish between a foreign employee and a U.S. employer, there are many obstacles and cultural differences to overcome on the way. Any employer who is considering or is in the process of hiring foreign employees needs to prepare for what lies ahead. Many tree care company owners have found great success in hiring workers from other nations, but at the same time are quick to caution that the cultural differences must be handled up front and with plenty of preparation.

**Have a home for them**

The No. 1 thing you will have to plan for if you bring in foreign employees is a place for them to live. Employers who hire workers through an H-2B temporary work visa program will have to have a home for them and also transportation to and from job sites. After that, take into consideration other necessities. How will they go grocery shopping? Where will they wash their clothes? Will they want to attend religious services? Expect that in the first few weeks they are here, you could very well be the one bringing them to the grocery store and helping them figure out the bus system around town. There may be co-workers who will be able to help out new employees, but do keep in mind that ultimately the responsibility is yours.

Ty Bewley, of Poor Boy Tree Service in Fair Play, Mo., started hiring Hispanic workers five years ago when the labor shortage was leaving him with no other option. Today, two-thirds of his workforce hails from Mexico. As part of a long process of hiring these workers through the H-2B program, Bewley goes to Mexico a few times each year to recruit employees he then brings to Missouri. As a result, he must make sure their basic needs – housing, transportation, health insurance, even adequate clothing – are provided. "We do everything: we take them to and from the store and Laundromat. You have to do every-
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thing for them (at first), or they won't make it," Bewley says.

He even buys them winter coats. "They come from a climate where the temperature is 55 to 75," Bewley points out. "Here, it ranges from 10 below to 110. When you bring them in, you have to remember they don't have the proper clothes." Pick up jackets and other appropriate clothing from a thrift store or yard sale; these clothes can be just as good as new, at a fraction of the cost - and well worth the comfort they bring the workers.

¿Se habla Español?

The language barrier is perhaps one of the most obvious obstacles to overcome, but with a few resources, it can be easily surmountable. Spanish videos, tests and books - available from the National Arborist Association - have proven helpful to many companies that hire Hispanic employees.

Doreen Orist, owner of Agave Tree Services in Mesa, Ariz., started hiring Hispanic employees in 1994, after a new mandatory drug testing policy resulted in the termination of nine employees. Orist turned to a local employment office in Arizona for help with hiring, and two current Hispanic employees helped find her connections. As a result, her field crew of 12 to 14 now includes 10 Hispanics.

Orist says she uses all available Spanish training materials, and in addition, has also had all in-house business and office forms (such as purchase requests) translated into Spanish. A bilingual office assistant serves as translator, interpreter and, on occasion, mediator when problems arise, and bilingual employees are part of the field crew. The key is to make sure there is always in interpreter on hand, wherever and whenever a situation may arise where communication between cultures is necessary.

If you run a large company - Bewley, for example, has about 80 workers who head out to job sites in crews of two to five - be mindful that each crew with Spanish-speaking and English-speaking workers has someone who is bilingual. Bewley says it can be tricky to coordinate, but each of his crews always has a leader who speaks English and a second person who is bilingual. In fact, "If a worker wants to be promoted, he has to be bilingual," Bewley says.

Also look into ways of teaching English to non-English speakers. Check into community ESL (English as a Second Language) classes. Many adult night schools offer such classes for a low rate, or even for free - and encourage your native English speakers to pick up some Spanish, even if it is just small talk, from their new Hispanic co-workers.

Don't be afraid to take a more creative approach, either. Jason Ebersold, of Jason's Arborcare Service Inc. in West Palm Beach, Fla., has found a novel approach to learning a new language. Every month, his workers take the latest issue of the NAA's training publication, The TreeWorker and translate it into Spanish.

"We need to get bilingual," says Bewley. "Learn a little Espanol. This isn't as easy as opening a pop-top on a can of soup. All things that are good take time. But like all good things, it is well worth the effort."

Other cultural differences

Watch out for other misunderstandings between cultures. Different laws, new customs - even different facial expressions - can be misleading to a person in a new country.

Orist, for example, discovered that "Sometimes, when you give (Hispanic employees) instructions or directions, they think you are yelling at them, and they become very closed. ... They are very proud; they get upset."

Bewley, too, recalls one time several of his Mexican workers put their resources together and bought a car. One person purchased car insurance and got his license. Shortly after getting his license, he cancelled the car insurance, not aware that car insurance is mandatory in Missouri - after all, car insurance is not mandatory in his native Mexico!

"We made them park their car until they got insurance," says Bewley.

Constant communication and patience can fix simple misunderstandings, but keep your mind open to the notion that things which seem normal to U.S. Americans can have a whole different meaning to those here for the first time.

Stereotypes, alive and scary

One of the most unpredictable - and most difficult - issues you will have to watch out for when taking on foreign employees is prejudice. Prejudice can rear its ugly head anywhere - among your English-speaking workers: from clients; even among the new workers themselves. Know ahead of time where you stand and what consequences you are willing to live with as a result of other people's prejudice. Will you be prepared to walk away from a job because a client doesn't want foreigners working on his or her lawn? Are you ready to handle an irate racist with tongue-biting calm?

Racism varies by geography, but no place in America is immune. "I live in the Midwest, where prejudices run rampant," says Bewley. "We get a lot of rednecks here." He has had U.S. workers leave the company after refusing to work with Mexicans; he's had utility companies send away his Hispanic crews. "The stereotype was terrible. There's nothing wrong with (Mexicans) just because they were born on the 'wrong' side of the border."

Orist, whose company does mainly residential work, vividly recalls one particularly painful episode of discrimination from a client: "One lady who appeared particularly racist called up, upset with having Hispanic employees working on her yard," Orist recounts. "I actually took my crews off the job and would not complete the work for her because she just didn't want the Hispanic workers in her yard."

"Some homeowners got very negative," she says. "There's a possibility we lost some clients, but so be it. We had men showing up for work every day, wanting to work." Aside from costing the company clients, such reactions also have a negative effect on her workers. "They were saddened. There is a loyalty from the Hispanic workers; they are very dedicated to you as an employer, and they don't like to have problems."

Bewley says he has found the issue of prejudice to be a "little bit of a rocky road," but assures that as word of his high-quality Hispanic crew spreads,
more utilities are becoming accepting of having the Hispanic workers working on their lines. His attitude toward intolerance is simple: “We gotta be there anyway. They’ll just have to get over it.”

Racism is not limited to clients of the company; it can also occur within the ranks. Both Bewley and Orist admit they have had U.S. workers leave when they found out Hispanic workers were coming on board. In addition, Orist has found herself dealing with racial issues within the Hispanic population at her company. “In a sense, one of the biggest issues of prejudice we faced was Hispanic against the Hispanic. (One time), there was one guy in the group they just didn’t get along with. It was just a personality thing. ... (Another time) we had a Puerto Rican who did not get along with the Mexican workers at all! They had fistfights in the back yard!”

In light of these problems, Orist teaches her workers that they can’t go it alone. If an employee is doing something that is not safe or incorrect, then fellow employees need to show them how to do it the right way. Emphasizing teamwork, Orist remains vigilant on any possible problems that could be counterproductive.

Bewley holds a similar attitude, but expresses it a little differently: “As long as people don’t cause problems, I don’t care if they’re purple.”

The big payoff

With all these considerations to take into account, it may be easy to wonder whether it is worth going through the red tape and bilingual training of foreign employees. If you are hurting for good labor, however, the benefits of recruiting - and retaining - foreign workers could far outweigh the costs.

“Employee shortages are definitely a worldwide epidemic,” Orist notes. Foreign workers at her company are skilled laborers who want to work. She views them as loyal and dedicated. There is a lack of young people in the United States between the ages of 18 and 25 that want to work at dragging brush, cleaning up and sweating. U.S. workers, she says, simply “don’t want to climb trees and feed chippers.”

Bewley and Ebersold couldn’t agree more.

“In my area ... most people are looking for a handout without putting any effort to put into job,” Ebersold says. “Attitudes are poor. They are often absent, show up late, and are negligent.”

In contrast, the Guatemalans and Mexicans that make up his 18 workers are hard working, dedicated and on time. “It’s a challenge. ... (but) for me it is worth it,” says Bewley. “Without the Hispanics, I wouldn’t be working. It is the wave of the future.”

Ariana Elmakiss is assistant editor of TCI magazine.
A live oak's roots are cleanly exposed after root collar excavation.

Roots may be pruned with precision after air excavation.
Air Excavation to Improve Tree Health

By Dr. E. Thomas Smiley

Root collar excavation is a service that is coming of age in the tree care industry. It is well known that soil against the trunk and root collar of trees often leads to decline, death or premature failure. Also well known is that too large a percentage of trees are planted too deeply.

In the past, the removal of soil from the root collar has been a dirty and difficult task. Even on small trees, root collar excavation can require hours of work, mostly while kneeling and bending over. Because of the difficulty of performing root collar excavations, they are often overlooked or ignored.

The latest option for root collar excavations is the use of high-pressure air. With the introduction of highly efficient and effective air excavation tools over the past few years, everything has changed in regards to root collar excavation. Now small trees can be excavated in a matter of minutes with far less effort than manual excavations.

Let's look at this service and see how it is accomplished and how it benefits trees. Start with the examination of the root collar of the tree. If buttress roots are not visible, there is usually a problem. Soil can hold a large amount of water that, when in contact with the trunk bark, can lead to deterioration in the bark and infection by pathogenic fungi or infestation by insects. Large amounts of soil can actually girdle the tree by limiting the normal radial growth. This “girdling soil” problem occurs more often in compacted sites but can occur whenever the root collar is buried.

Research by the Bartlett Tree Research Laboratories following...
Hurricane Fran in September 1996 found that about one-third of the trees in Raleigh, N.C., that had been uprooted by the hurricane had root collar problems. This compared to less than 10 percent of the study trees that survived the winds. This indicates that soil on the root collar and its associated problems can predispose a tree to premature tree failure.

Root collar excavation can often reverse the decline symptoms seen in root collar buried trees, as long as adventitious root growth has not occurred to such an extent as to replace the original root system of the tree, and as long as disease and/or insects have not caused major damage. The reversal in some genera of trees, such as pine, can be dramatic, often seen within two or three weeks of excavation.

How it works
Root collar excavations originally were accomplished using trowels or other small digging tools. The technician would start near the trunk using tools or gloved hands, carefully moving the soil from around the tree. Many likened this to an archeological dig for buttress roots! Once buttress roots were found, the radius of excavation would be enlarged to ensure that the excavation would not rapidly fill in. Removing this soil and mulch would allow the root collar area to dry to a normal moisture level and reduce the risk of infection or insect infestation.

Air excavation of root collars can be much faster and cleaner than excavation with hand tools. Time can be reduced by 30 percent to 70 percent. The amount of damage to the trunk — associated with damp bark and inexperienced technicians — is reduced to practically nothing since metal digging tools are no longer needed to remove the soil. Bark is removed by air only if it is dead or was severely damaged prior to excavation. On some thin-barked species, bark might be removed during the period of rapid spring growth.

The principle of air excavation is simple: a large volume of high-pressure air is directed through a valve to a nozzle near the soil. High-pressure air penetrates the pores in the soil, separating ped or larger clumps of soil and blowing them out of the work area. Roots are left intact because they have much less porosity than soil and therefore do not allow the entrance of the air stream.

The nozzle is directed at an angle of 30 to 50 degrees from horizontal when conducting root collar excavation. This quickly moves the soil out of the work area. If hardpans are encountered, the nozzle is aimed straight down for maximum cutting ability. Working from the fractured edge of an excavation is faster than restarting an excavation. Since the air stream can easily throw rocks as well as soil, breakable objects and people must be protected. On highly manicured landscapes, soil can be collected with a portable barrier and removed from the site.

Grass roots hold soil very tightly. If the excavation area includes dense turf, plan...
on greatly increasing the time required for the job. Killing or removing grass ahead of time is often a better option.

Extremely wet or dry soil can also slow or stop an air excavation. Dry soil is difficult to excavate and can create large dust clouds, which spread to neighboring yards and generate complaints. Make sure neighboring windows are closed before starting any excavation, even with moderately moist soil.

Once the root collar is excavated, potential girdling roots can easily be identified and removed with a pruner or chisel. The collar should be examined for the presence of insect infestation or disease symptoms. If root decay is suspected, the newly exposed buttress roots can be sounded with a mallet or probed with a drill to determine if decay is excessive.

Selecting an air excavation tool

Air excavation tools are selected depending on the speed of excavation required and the ergonomics of the tool. Speed of excavation is dependent on the volume of air flow that the tool is designed for and the design of the nozzle. Nozzles designed for small compressors will dig more slowly than larger nozzles used with matching compressors. In light soils, there is little difference between excavation tools rated for the same air volume. In heavy or compacted, soil the design of the nozzle makes a much greater difference. Excavation rates of well-designed nozzles are nearly double those of other products.

Tool ergonomics are important if the tools will be operated for long periods. The valve should quickly shut off when released and should be easy to open and keep open. Lighter weight tools reduce operator fatigue. Barrel length will determine the valve position and natural angle at which the tool is held. If too short, the tool will naturally be aimed at too high of an angle; if too long, the operator with need to hold the valve high or aim at too low of an angle.

As with all tools, the availability of replacement parts is critical. Most air tools

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Dr. E. Thomas Smiley is a plant pathologist and soil scientist at the Bartlett Tree Research Laboratory.
Air excavation tools have become a practical reality for use in arboriculture. Unlike other pieces of excavation equipment, air tools have the advantage of being able to dig around plant roots without damaging them. They can also significantly reduce the time it takes to perform such jobs as root collar excavations – while still providing a high level of safety from damage to sensitive objects.

Like many other tools used in arboriculture, air excavation tools have their history rooted in other industries. These tools were originally developed to save money in the gas industry by reducing pipe maintenance costs. They were then applied to a variety of other jobs that require high rates of excavation without disturbing surrounding objects such as cables, pipes and tanks.

In recent years, air excavation tools that are powerful and lightweight have been developed. Supersonic air jets allow the tools to be used in almost all kinds of conditions, cutting the soil like a laser without causing harm to surrounding plant roots or pipes. Lightweight materials such as fiberglass and aluminum are commonly used to make the tools safer, easier to use, and capable of high productivity.

Brief history of safe excavation

Underground Services Inc. and Ford, Bacon & Davis pioneered digging and removing material without shovels, blades or buckets in the utility industry in the late 1950s. The method was termed “vacuum excavation” for the means used to remove the loosened soil from the hole. Each company developed and used a truck-based rig for the job. In the mid-1960s, the Brooklyn Union Gas Co. requested the Myers Sherman Corp. build a special excavator based on its standard catch basin and manhole vacuum cleaning truck. The obvious advantage was avoiding damage to underground utilities, while the downside was a slower excavation speed than that of a typical backhoe. Used primarily for small potholes, these units could average an excavation rate of about 1.5 cubic feet per minute, based on early tests by the Brooklyn Union Gas Co.

Early vacuum excavation units used either water (descended from equipment used to clean municipal sewers) or air for excavation. Water has advantages for extremely hard soil, but it creates mud, which is messy to clean up and tends to freeze in winter. Later people began to use air by making a homemade blowpipe, or air lance. These are typically just lengths of black iron pipe with a ball valve and a reduced pipe nipple for a tip. Although an air lance is cheap to make, it does not turn the energy of compressed air into digging power very efficiently.

Today, air/vacuum excavation is commonly used in the utility and industrial industries. On any given street corner in the United States, one might spot a vacuum excavation truck performing routine jobs such as line location or pipe and cable repairs, with excavations done with air.
The advent of supersonic air jets

A much more efficient way to turn compressed air into a digging tool is to use a supersonic nozzle. Although supersonic nozzles have been built for rocket engines for many years, air jet excavation nozzles are different. Unlike propulsion nozzles, the energy to accelerate the air comes from the release of its compression rather than from the combustion of a fuel. Because of its small size, particular attention must be paid to the nozzle profile in order to create true supersonic flow. Special tooling and computer-aided machining is then used to machine the profile into a nozzle.

Compared to an air lance, a tool with a supersonic nozzle has many important advantages. Compressed air exiting from a simple hole expands suddenly to atmosphere in an unfocused manner, like a blossoming flower. Air exiting from a properly designed supersonic nozzle, on the other hand, maintains its focus like a laser beam. In practical terms, this means that a supersonic jet can do more work, move more material, and dig harder soils for a given size of compressor.

Figure 1 shows the effect of nozzle airflow and pressure on excavation

<table>
<thead>
<tr>
<th>Flow (Scfm)</th>
<th>Pressure (Psig)</th>
<th>Dry sand 1/2 tsf, 2700 lb/yd³</th>
<th>Dry clay 5 tsf, 3100 lb/yd³</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>90</td>
<td>0.9</td>
<td>0.4</td>
</tr>
<tr>
<td>60</td>
<td>90</td>
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<td>60</td>
<td>135</td>
<td>1.3</td>
<td>0.8</td>
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<tr>
<td>150</td>
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<td>1.8</td>
<td>1.2</td>
</tr>
<tr>
<td>225</td>
<td>90</td>
<td>2.3</td>
<td>1.7</td>
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</tbody>
</table>

This table shows the effect of soil strength, air tool pressure and flow on soil excavation rates.
rate for a properly designed supersonic nozzle. Increasing air flow and pressure both increase excavation rate, although by different amounts. Doubling the airflow (scfm) increases excavation about 170 percent, while doubling the pressure (psig) increases excavation by about 145 percent. Increasing pressure also has an additional effect of allowing harder soils to be excavated. From a practical perspective, increasing airflow is easier than increasing pressure. Standard industrial portable air compressors are readily available in many air flow sizes including, 125, 175, 250, 375, 450 and even up to 1200 scfm. The standard pressure is generally 100 psig, although high-pressure units up to 150 psig are available in certain sizes from various manufacturers. Typical excavation rates for a supersonic air tool can exceed 1 cubic foot per minute, depending on the soil removal method.

Figure 1 also shows the effect of soil strength on excavation rate. Soil strength is typically measured in tons per square foot (tsf) using a pocket or cone penetrometer. It depends on many factors, including soil type and moisture content. Soft clays may have strengths under 1 tsf, while hard clays may range above 4 tsf. Doubling the soil strength reduces the excavation rate by about 45 percent. A properly designed supersonic nozzle is effective at 90 psig in dealing with clay soils up to 5 to 10 tsf, which is typical of most soils in the United States. Higher-pressure supersonic air tools have been used to excavate soils with strengths over 10 tsf.

**Summary**

The tree care industry can take advantage of air tools. These tools:

- Effectively penetrate and dislodge most types of soil, but are harmless to non-porous items;
- Are many times faster than hand excavation and can excavate rocky types of soils where a shovel cannot be used;
- Are powered by a standard portable air compressor readily available either through purchase or rental;
- Can be sized for different air flow rates depending on the excavation rate required;
- Deliver several times more force per unit area to the soil than a conventional air lance;
- Can be used in multiples for larger excavations;
- Can even be used to dig up items as sensitive as plant and tree roots.

Richard Nathenson is president and Andrew Jarabak is marketing director for Concept Engineering Group, Inc.
The Fair Labor Standards Act (FLSA) applies to almost all employers in the tree care industry. It establishes standards in four areas:
- minimum wage
- overtime
- record keeping
- child labor

The act is enforced by the U.S. Department of Labor’s Wage and Hour Division, which conducts thorough investigations through its compliance officers.

Your company may be subject to this law either on an enterprise or an individual basis. Enterprise basis means that you gross $500,000 per year. It is possible that the employees of a small business that does not gross $500,000 per year are not subject to the law.

Any employee that is engaged in interstate commerce, or the production of goods for interstate commerce, is subject to the law on a workweek basis. If you have employees trimming trees on a road, that is considered interstate commerce because you are dealing with a branch of commerce. Landscape contractors that do construction are automatically considered covered by the law. A very small business that does strictly intrastate work and does not work around instrumentalities of interstate commerce – such as airports or highways – might not be subject to the law. Other than that, everybody in the country is covered.

What kind of records do you have to keep under the Fair Labor Standards Act? An accurate daily and weekly record of hours worked is critical. Every employee in the company, except for your bona fide salaried executive and administrative professionals, must have a time record. Every day and every week they must record their hours. You are supposed to keep their basic time and payroll records for three years. The actual time cards need only be kept for two years.

There is no prescribed form of record; any kind of record that contains the basic information is satisfactory. If you use time cards, be careful about long punching. If an employee comes in at 7, punches in and drinks coffee until 7:30 when he suppose to start work, you do not have to pay for time that is on the time card if it is not working time. But in reality, what happens? These employees punch in early every day, and then you happen to have to fire one of those employees. They get angry and decide to report you to the Labor Department. They tell the Labor Department that you made him come into work early and didn’t pay him for all the hours. The investigator comes out and starts to look through the time cards and it is right on the cards that the workers punched in, but were not paid. You can not argue against your own time records. Wherever possible, you want to control those time cards. You want to be sure that those employees only punch in shortly before they actually go to work.

Working hours

What constitutes working time? Working time that you have to pay for is defined to include three different types of time:

All time. All time is when the employee is required to be on the employer’s premises. All time is when the employee is required to be at a prescribed work site, and any time the employee spends in activities that benefit the employer. Basically this means that if the
employee works unauthorized overtime, it is still considered to benefit you as the employer, and even though you may have a policy that says no unauthorized overtime, you still have to pay it. If you tell an employee not to work overtime this week without permission and she works it anyway, you might fire her for insubordination, but you still have to pay her overtime as she walks out the door.

**Common hours.** Meals are not required by the FLSA. Some states require lunches. The federal government says that if you give employees a lunch, you do not have to pay for it, provided it is long enough to consume a meal, and could otherwise be used for personal activities. Typically it is for 30 minutes of uninterrupted relief from duty. Breaks are not required, but if you give them, treat them as working time.

**Waiting time.** If an employee has to wait around for something to happen, do you have to pay for it? It depends, says the Supreme Court, on whether they have been engaged to wait, or if they are waiting to be engaged. Let’s use an example. I am a truck unloader. I am supposed to go to work at 8. I show up at 8, and the truck is not there. My boss comes to me and tells me that my truck has been delayed and will be in at 9. He tells me that I am free to go where I want to and to do whatever I want until 9. I decide that I’ll just wait in the break room. My boss does not have to pay me. He gave me the time free. I was waiting to be engaged. On the other hand, if I show up at 8 and my boss asks me to just hang around until the truck comes in, he has to pay me. I am engaged to wait.

**Compensable travel time**

Let’s talk about compensable travel time. Home-to-work and work-to-home travel is not working time. Travel between job sites, however, is working time. Driving home in the company vehicle is also not working time.

Let’s look at a different example that is common in the tree industry - a one-day assignment to another city where the employee does not spend a night away from home. He drives three hours from home to a conference or a one-day pruning job and drives three hours back. All of this time is working time. When employees drive outside the normal commuting area to a job site, then all travel time is compensable, as long as they do not spend the night. If he spends the night, a strange rule kicks in.

Look at the employee’s normal working time - say 9 to 5 - and count any travel as a passenger before 9 or after 5 as non-working time. The travel between those hours is working time, even on Saturday or Sunday, even if the employee does not normally work those days. For example, an employee could get on an airplane at 3 p.m. At 5 p.m., in mid-air, the employee “punches out.” He continues the rest of the trip off the clock. The law says that driving from home to a city outside a normal commuting area and back is all compensable. The law says that flying overnight is only compensable between normal working hours.

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<tr>
<th>Item No.</th>
<th>Description</th>
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<tr>
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<td>12BM 150</td>
<td>1/2&quot; Black-Max 150ft Hank</td>
<td>ea. $77.95</td>
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<tr>
<td>12BM 600</td>
<td>1/2&quot; Black-Max 600ft Reel</td>
<td>ea. $289.95</td>
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**Tree Care Industry - May 2001**
On-call time

If employees carry a pager, on-call time is typically not working time unless it is terribly restrictive. Reporting time, whether they have to wear a uniform, and whether they carry a pager or wait by the phone all determine how restricted the on-call employee is. You want your on-call employees to be free to travel within the pager area and report within 30 minutes in normal clothing.

Child labor

For child labor purposes, you become an adult at age 18. At 16 and 17, there are 17 occupations that are considered hazardous, including tree care, and nobody under 18 can do those things. Your liability insurance carrier and your workers compensation carriers don’t want you to be hiring people 18 or under anyway. At 14 and 15, if you hire kids for the summer, there are very serious restrictions. Fourteen- and 15-year-olds can’t work off the ground on ladders or scaffolds; they can’t operate any power equipment, including lawn mowers and weed eaters. There are hours and time standards as well. Under 14, they cannot work at all. There are fines of up to $10,000 per minor for child violations.

There is a parental exemption, which applies only if you are the sole employer of your child (meaning you are the 100 percent stockholder of the corporation), or you and your spouse together are the 100 percent stockholders, or it is a sole proprietorship and you are the proprietor. Second, the parental exemption does not exempt you from the hazardous occupations orders. Child labor laws vary somewhat from state to state. Check with your state’s Department of Labor for specific child labor regulations or exceptions.

Investigations

Investigations are typically done after a complaint. There are four parts and an opening conference. Investigators go back two years on your records. They interview your employees. They hold a final conference and tell you how much money you owe. You can negotiate with them, and if you don’t like the deal, you can ask for a second level conference with the boss. If you don’t cut a deal, they can sue you for back wages for two years and damages equal to the back wages. If the violation is willful, they can get the court to go three years on the statute of limitations with an injunction.

Under private litigation, employees can sue you for back pay, damages for three years, and attorney’s fees. The federal government can also add a civil money penalty for up to $1,000 per employee on violations of minimum wage and overtime; that threat is usually made as leverage in investigations.

Salaried exempt employees

Everybody knows that there are two types of employees - salaried and hourly. Hourly people get overtime, and salaried do not. However, just putting somebody on salary does not make him or her exempt. I can put the janitor on salary and call him the president, but as long as he is sweeping the floor, he is not exempt. They have to be decision-making people and they can’t just be deciding when to go to lunch.

There are 17 occupations - pruning, sawing, pole, hedging and trimming. Both are lightweight, meet OSHA safety standards and, with the addition of Kevlar, their unequaled strength to weight ratio is even better than before. Jameson not only performs beautifully over head, it makes your bottom line look good too.

Everybody knows that there are two types of employees - salaried and hourly. Hourly people get overtime, and salaried do not. However, just putting somebody on salary does not make him or her exempt. I can put the janitor on salary and call him the president, but as long as he is sweeping the floor, he is not exempt. They have to be decision-making people and they can’t just be deciding when to go to lunch.
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weather shuts you down for part of the week, your exempt people draw their full paycheck unless they miss the entire week. That includes jury duty, witness duty and military duty - even though you are not responsible for it. It also includes disciplinary suspensions of less than a week at a time.

The first category of exempt employees is executives. This includes all supervisors and managers, such as foremen and crew leaders who direct the work of other people. Their primary duty must be management over 50 percent of the employee’s time. If someone spends over half her time in management, she is a manager. If she spends over half of her time working alongside the crew, she is a non-exempt employee. This is great danger for the owners of tree care companies. The purpose of the primary duty test is to knock out the working foreman. If you have an employee that is in charge of a two- or three-man crew, and he supervises, hires and fires them, but then spends most of his time working right alongside them, then he is not exempt.

The second test is the two-employee test. You can’t be exempt as a supervisor unless you have a minimum of two people reporting to you.

Administrative employees. This is your office staff. Their primary duty is the same as the executive with over half of their time in office or doing non-manual work. They have to be decision-making people - and they can’t just be deciding when to go to lunch. They have to be making decisions that are important to your business and are administrative in character rather than in production or sales. They also have to exercise discretion and judgment. The people doing payables, receivables, payroll, bank reconciliations and general ledger work are not exempt. Those office people get overtime if they work it. They track their hours and they get overtime.

Professional. We mean degreed professionals in recognized learned professions. We are normally talking about lawyers, doctors, accountants and engineers.

Outside sales people. Their primary duty is making sales or obtaining contracts for services away from the employer’s place of business. If you have people that go out and call on companies and people, away from your place of business, they can be exempt, but not if they are doing it over the phone. It has to be outside sales. There is no salary or compensation requirement of any kind for outside sales people.

Brian Farrington spent 12 years with the United States Department of Labor Wage and Hour Division, where he supervised close to 5,000 investigations. An attorney, he is president of Harry Weisbraud Associates. He is also the author of Wage Hour Compliance, published in 1995, by Gorman and Lamont. This article was excerpted and adapted from a lecture at TCI 2000. Part I of Farrington’s presentation appeared in the April issue of TCI.
Whoopie Do and Whoopie Don't!

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

Big Al Fontaine and his Number 1 man, Max Bunyan, know that the preparation for any big rigging operation begins the day before. With that in mind, Al and Max huddled their trusty crew together to formulate a game plan to remove the humongous old sycamore from the Widow Carter’s back yard. All agreed that the operation would require the use of all the latest “riggin’ fixens” Max and Al could muster from their equipment arsenal.

Max pulled out a series of pulleys, ropes, carabiners, ascenders, friction devices and slings. Then more slings, eye-to-eye, D-to-D, little ones, big ones, fat ones, and skinny ones. Color-coded slings, slings for lowering, and ones for anchoring, and even a couple of homemade gems. Finally, he dug deep into the bottomless pit of his “sling-bag” and pulled out what he was looking for — a Whoopie-Sling!

Whoopie Do!
- Works well as an anchor for friction devices when lowering those huge “biscuits.”
- Easy-to-adjust length that eliminates the need for several different-sized slings.
- Adjustability enables you to fine-tune the amount of slack in the anchoring point.
- Has UV protection.
- Has a protective property so water will not damage it.
- Can withstand weight/loading appropriate to rigging. (Check manufacturer’s recommendation).
- Anchors the lower end of a speed line when “under tree” hazards need to be avoided.
- Adjusts without mechanical devices.
- Meets ANSI requirements.
- Must be replaced when damaged.

But, remember, there is no single answer to all challenges in the tree biz. There are some things that Whoopie DOESN'T do.

Whoopie Don't!
- Work as a “choker.” Can’t be used in a “skid line.”
- Work as a lanyard for climbing.
- Replace the fall restraint in the aerial lift.
- Sop up oil, gas or other unidentifiable liquids from tool bins and truck beds.
- Dry out properly when stored in a tightly rolled ball inside an equipment bag.
- Replace experience and proper training in rigging operations.
- Attach to tree stumps so you can use a truck to yank them out.
- Last forever.
- Most importantly, Whoopie doesn’t relieve us from inspecting all of our equipment prior to each use.

Max and his crew have the equipment, training, and experience it takes to “rig” the Widow’s tree down, and the game plan that will make it work. Regardless of what slings your crew decides to use, proper training and experience are required to ensure a safe operation. Be sure that all elements meet the ANSI standards.

Whoopie by New England Ropes...

These adjustable eye slings take the guesswork out of choosing the right size sling. A whoopie sling is a double eye sling with one fixed length eye and one adjustable length eye. To use, simply adjust the moveable eye, choke the sling around the tree by passing the fixed eye through the adjustable eye and attach your hardware. Manufactured by a name you can trust, New England Ropes uses 100% polyester Nerex coated with bright orange urethane for abrasion resistant while maintaining its flexibility. Nerex is perfect for choke applications as its construction provides good gripping properties.

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Tiny Tim Felling Spotter

Paul Carlin, owner of Tiny Tim Tree Service in Illinois and an Illinois-licensed tree expert who studied engineering at Illinois Institute of Technology, has invented the Tiny Tim Felling Spotter for assisting arborists in safe felling operations.

A simple device, the Tiny Tim Felling Spotter accomplishes the grand goal of determining whether a tree you are about to fell will hit a structure. As Carlin puts it: “My spotter is for the average arborist who is wondering if the tree he is about to cut will smash the shed behind him. ... If you are pulling a trunk down in tight quarters, and you’re just not quite sure if the top of the trunk is going to miss a shed not too far away, this felling spotter will give you a genuine ‘yes’ or ‘no’.”

To use the felling spotter, a tree worker stands facing the tree, adjusts the felling spotter, and uses sighting techniques explained in the accompanying instructional video and sheets to determine whether a tree targeted for take-down will hit a designated structure.

As the accompanying photo shows, the device itself is as simple as three attached pieces of wood. Although he has a patent for his device, what Carlin is really selling isn’t the spotter – it’s the video explaining how to use it. Various devices, including Clinometers and a Cross-Sight tool, have been on the market for a while. Carlin claims that with his device (and a little practice) “on a 50-foot tree you can come within one foot of the point you mark on the ground.”

The spotter is 16 inches long. The complete package includes the felling spotter, instructional video and three instructional sheets.

For more information, contact Paul Carlin at Tiny Tim Tree Service, 310 Busse, Suite 166, Park Ridge, IL 60068; Phone: (847) 390-7299; Fax: (847) 825-6047.
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Pest Management

Understanding the Perfect Pest:
What the Arborist Should Know About Scale
By David Munson

If there is one insect that deserves the title of the perfect pest, it's the scale. Built like tiny tanks, these prolific pests can build up sizable populations before they are even detected, and can shrug off a variety of control methods with the help of their virtually impenetrable armor. Scale infestations can seriously degrade tree health, but with proper identification and timing, the tree care worker can usually get scale populations under control before it's too late.

Like aphids, white flies, and cicadas, scales are insects in the order Homoptera. Insects in this order are best known for their destructive feeding habits. Using specialized piercing mouthparts and scales, homopterans penetrate woody and herbaceous plant tissues and suck out the fluids, weakening the host tree and increasing the likelihood of disease. Scales are unique among their Homopteran comrades in that they have a scale-like

"Controlling scale is tough, no question about it. Adults are essentially unaffected by sprays, thanks in part to their hard outer covering, which makes them especially threatening to the health of the trees they affect. The key to successful control is timing."
outer covering — hence their name. The covering may appear waxy, chalky or powdery, depending on the species.

With literally hundreds of species of scale known to exist in North America, the insects are divided into "soft" and "hard" types for classification purposes. Since both categories have a hardened outer cover, the terms "hard" and "soft" are best used to distinguish between scales that are attached to their outer covering and those that are not.

Hard or armored scales live and feed under a protective coating that is not attached to the body. Hard scales include such pests as the San Jose scale, the oyster shell scale, and the euonymus scale. The roughly 350 different species of hard scale present in the United States come in a variety of shapes and are typically 1/16 to 1/8 of an inch in size. Hard scales remain attached to the host when their protective covering is pried away, and do not produce honeydew.

Despite their name, soft scales are not necessarily any softer than the hard variety. Of the hundreds of soft-scale species known in the United States, the various cottony scales are probably the most notoriously widespread. Some species of soft scale may reach as much as 1/2 inch in size, and all soft scales come off "in the shell" when the insect is pried away from the host. Soft scales are often attended to by ants, which thrive on the sugar-rich honeydew soft scales produce. The sticky honeydew can also lead to the presence of sooty mold on the host plant.

Regardless of the type or species, the key to controlling scale is understanding its life cycle. Eggs are typically laid beneath the protective covering, and hatch in one week to one month, depending on the species. Newly hatched scales are known as crawlers, and represent the mobile phase of the scale life cycle. Crawlers move about the plant looking for tender new growth, where they will attach themselves, excrete a waxy covering, and begin to feed. Both males and females will molt as they grow, but only the male will pupate, emerging as a tiny, gnat-like insect that will fly off in search of females.

Recognizing scale damage

Trees that have become infested with scale can exhibit a variety of symptoms. Yellowing and stunting of the leaves is common, and with some leaf-feeding species yellow spots may appear on the upper surface of the leaves as a result of the insects feeding on the lower surface. Premature leaf drop, twig dieback, and a generally unhealthy appearance may also
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Pine needle scale infestation on Mugho pine.

appear as a result of scale infestations. Like many other pests faced by the arborist, scale may often weaken the host tree, making it more susceptible to other pests and diseases. Always check a scale-infested tree for damage caused by secondary pests or pathogens.

Scales and fertilization

When scales suck the juices of the host tree, they get plenty of sugars. Scales take in so much sugar, in fact, the excess may be excreted in the form of honeydew by soft scale species. One important nutrient that is not as easily available in tree fluids is nitrogen, and scale have been shown to proliferate more readily on trees that have a high nitrogen content. Landscape trees often receive an over-abundance of nitrogen from excessive fertilization, which can lead to extremely high populations of scale. When scale is present, the tree care worker should take care to avoid high-nitrogen fertilizers, and should instead apply slow-release fertilizers in low to moderate amounts.

Control

Controlling scale is tough, no question about it. Adults are essentially unaffected by sprays, thanks in part to their hard outer covering, which makes them especially threatening to the health of the trees they affect. The key to successful control is timing. An accurate identification of the scale species can be used to determine the general hatch dates for scale eggs, and careful monitoring of the tree during that period should reveal the point at which crawlers begin to travel to new feeding sites.

Sprays should be applied during the crawler phase when the scale population is most susceptible. Insecticidal soaps, dormant oils, malathion, sevin, and other pesticides can be effective for scale control, as long as they are applied in the right amounts at the right time. Parasitic wasps and other beneficial insects have also been used effectively against scale in the crawler phase.

Since scale problems are most often detected later in the year when the insects have already reached adulthood, it is important to plan ahead for the future crawler stage for best control. Maintaining tree health by watering and careful fertilization can help ensure the host tree's rapid recovery, and heavily infested branches can often be cut out and destroyed to help reduce the scale population. Injection-type pesticides have been shown to be effective with some scale insects as well.

Follow-up is extremely important when dealing with scale insects. Once scale problems are treated, populations can recover quickly if the tree care worker does not intervene. Setting up a regular monitoring schedule for scale-prone locations is probably one of the most important steps in keeping scale under control.

David Munson is a certified arborist and a reporter for K2bh.com Internet news.
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Annual Conference
DoubleTree Hotel &
Modesto Convention Center
Modesto, Calif.
Contact: Bob Tate (530) 892-1118 or
Ray Morneau (650) 964-7664

May 6-8, 2001
Southern Chapter of the ISA
“Tree Structure and Mechanics:
How Trees Hold Together
And Fall Apart”
Desoto Hilton, Savannah, Ga.
Contact: Dwayne Carter,
(336) 789-7766

May 7-18, 2001
Committee for the Advancement of
Arboriculture
Basic Tree Climbing School/Course
Thompson Park,
Lincroft, N.J.
Contact: (732) 431-7903

May 8-10, 2001
Utility Safety Conference & Expo 2001
Atlanta, Ga.
Contact: Denise Kula (847) 639-2200
or www.utiltysafety.com

May 11, 2001
Committee for the Advancement of
Arboriculture
Aerial Rescue and Electrical Hazard
Thompson Park,
Lincroft, N.J.
Contact: David Shaw (732) 431-7903

May 13-15, 2001
Second International Symposium
on Coptotermes formosanus
Radisson Hotel
1500 Canal St.
New Orleans, La.
Contact: (504) 286-4452 or e-mail
alax@nola.srrc.usda.gov

May 15, 2001
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Hazard Tree Workshops
Nashville, Tenn.
Contact: (888) 448-7337
or www.arborday.org

May 16, 2001
Committee for the Advancement of
Arboriculture
Chain Saw Safety
Thompson Park
Lincroft, N.J.
Contact: David Shaw (732) 431-7903

May 17, 2001
National Arbor Day Foundation
Hazard Tree Workshops
Morgantown, W.Va.
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May 24, 2001
Seminar: “Ornamental Trees: Selecting,
planting, moving and managing”
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Richard Nixon Library
1801 Yorba Linda Blvd.
Yorba Linda, Calif.
Contact: Karen Yates (909) 880-5977

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Arbor Day Farm/
Lied Conference Center
Nebraska City, Neb.
Contact: (888) 448-7337
or www.arborday.org

June 23, 2001
N.J. Chapter of ISA
N.J. Tree Climbing Championship
Cadwalder Park
Trenton, N.J.
Contact: Steve Chisholm,
(732) 462-7278

June 23-26, 2001
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Innisbrook Resort
Tarpon Springs, Fla.
Contact: Sandy Temple,
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or www.floridaisa.org

June 28-July 1, 2001
European Arboricultural
Council Symposium
“The Importance of Tree Care
and the Role of the
European Tree Worker”
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or www.eac-arboriculture.com

July 11, 2001
N.J. Chapter of ISA
N.J. Certified Tree Expert Exam
Rutgers University
New Brunswick, N.J.
Contact: John Perry (732) 833-0325

July 14, 2001
Michigan Forestry
& Park Association
Tree Identification Workshop
Michigan State University
Contact: (517) 482-5530

July 16-17, 2001
PLCAA
12th Annual Legislative Day on the Hill
and Cemetery Project
Washington, D.C.
Contact: PLCAA,
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**July 18-22, 2001**
Turfgrass Producers International
36th annual Summer Convention and Field Day
Westin Harbour Castle
Toronto, Ontario, Canada
Contact: TPI, (800) 405-8873

**July 19-20, 2001**
Dr. Alex Shigo
“The Mission: Better Tree Care through Better Understanding of Tree Life”
Portsmouth, N.H.
Contact: Jeff Ott, (800) 841-2498

**July 20, 2001**
Conference on Woody Plants
The Scott Arboretum
Swarthmore, Pa.
Contact: (610) 388-1000, Ext. 507

**July 26-27, 2001**
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Green Industry Trade Show & Seminar
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Contact: Julie Ellenhorn, (877) GREEN55

**August 12-15, 2001**
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ISA Milwaukee 2001
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Michigan Climbing Championship
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**September 11-12, 2001**
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**September 12, 2001**
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Multi Lakes Conservation Camp
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TREE CARE INDUSTRY - MAY 2001
What are the secret ingredients for a newspaper display ad that attracts customers and boosts sales instead of just eroding your bottom line? Start with a fresh message. Add a dash of visual flair. Mix in a spicy headline. Bring it all to a boil and you've got the recipe for a display ad with people-pulling power. Easier said than done, of course. You need more than a simple formula to cook up a successful ad. Indeed,

### Find out what your customers want

Before you decide what to say in your advertising, you need to know what your customers value. Start by imagining your 10 best customers, suggests Madison, Wisc.-based advertising consultant Sarah White, author of Do-It-Yourself Advertising. White suggests answering some key questions about these customers. Then interview them and see if their answers match yours. Once you understand your customers, you can develop advertising that speaks to them and to others like them. Here are some sample questions:

1. What benefit are they purchasing?
2. How frequently do they hire us?
3. What is the most important reason they hire you over the competition? What are some additional reasons?
4. How is the market changing and how will this affect their buying decisions?
5. What would they like you to add to your mix of services?

### How to pick an ad agency

Should you use an advertising agency? And if so, how do you select one? If you are planning to increase your advertising expenditures, it's wise to use an agency in order to get advice on the best media, cost-saving tips and design considerations.

"Find someone who is willing to work with you based on your size," recommends John Bonney, president of Huntington Advertising in Lisle, Ill. "If you are a small business you won't get lots of attention from a big corporate agency." Advertising is a service business, so you want an agency that can invest the time in providing you the right service. Bonney suggests asking agency candidates what they can offer you in terms of:

- assistance in planning strategies,
- putting together programs to put your company out in front of the pack,
- research programs to understand your customers.

How about creativity? "Ask 10 people and you will get 10 creative ideas for your ad campaign," admits Bonney. "But it's service that is most important to your success."
some tough questions are in order. Just what message should your ad communicate? How should you design the visual? And what should you say in the headline? We posed those questions to seven master advertising chefs from around the country. In this article, they share their secrets on preparing display ads that fatten a business’ bottom line. With an eye toward improving your own display advertising, let’s see what they have to say.

Communicate a simple message

Resist the temptation to say too much in one ad. While you naturally want to tell all of the great things about your company, you’ll just muddy the waters. You need to pick the one message that attracts the most customers. 

“Boil down your customer benefit to one sentence,” says Donn Resnick, president of D. H. Resnick Advertising in Scottsdale, Ariz. What is good about your company’s service? What is different? What is the benefit to customers? It takes discipline to do this well. Too many small business owners start from the idea that they are placing an expensive ad, and they have a limited budget, so therefore they try to put everything into it.

“That’s never a good idea,” cautions Tim Siedell, creative director of Ayres Advertising and Marketing in Lincoln, Neb. “People just can’t remember it all.” There is a very real danger that they will remember nothing about your ad. The solution is to bite the bullet and nail down one message. “Hand the public one idea that it can hold onto,” says Siedell. “Sit down and decide – what is the one thing I want people to come away with? Focus on that.”

Describe benefits, not features

“People don’t buy electric drills, they buy holes,” quips Siedell. “You need to translate your best features into benefits that the customer can relate to. Be aware of the fact that you are communicating to someone, and that someone has a point
of view. Think from the point of view of the person who is buying.”

Here are some examples of translating features into benefits. Change “the city’s most knowledgeable employees” to “experts who answer your questions.” Instead of “the lowest price in town” try “prices that will save your household budget.”

Differentiate from the competition

If you can’t show how your tree care company is different from others, you might as well quit fighting your competition and sell out to them.

To isolate your unique advantage, Sarah White, author of *Do-It-Yourself Advertising*, suggests you consider the wants and needs of your best customer. Then, let your ad describe how you match those needs better than the competition. To stimulate ideas, consider your own reactions as you review the ads of your competitors. What do you offer that they do not? There’s the point you have to drive home in your ads. Yet another approach is to survey your customers on what they like most about your services. Then design ads that reinforce these ideas.

Once you know what is really drawing your customers away from the competition, drive the points home in your ads. This approach reinforces a key point: not all winning bids are equal. The better ones lead to additional sales down the road. Avoid trying to make every possible sale.

“You can’t be all things to all people, but you can be the vendor of choice for some of them,” says White.

Attract the eye with graphics that echo the message

When it comes to ads that work, the eyes have it. “It’s all in the picture,” insists Resnick. “Studies show that people look at the graphic first. Then they look at the headline. And then they look for the logo to see who has done the ad.”

In your best ads, people get part of your message from the picture, then get the rest
of the message from the headline. Then they look for your logo and name to see where they can enjoy this great benefit. “To me the best ads are the ones where you have an interesting visual, and then the headline sends the visual into another direction,” says Siedell. “There’s no magic formula to this,” says Resnick. “It’s all intrinsic to your strategy and dependent on your creative ability.”

Use a snappy headline
Since the headline is the second element the reader sees, it should reinforce the graphic. “The fastest way to communicate your central selling idea is with a headline that follows the visual,” explains Dick Briner, executive creative director of Creative Alliance in Louisville, Ky. “If people have to read the body copy to understand the message of your ad, you have failed.”

Suppose your message is that you have the only crane in the area for difficult removals. Your graphic can include a picture or silhouette. Your headline: “Pick the experts that meet your needs.”

Have one dominant element that attracts the eye
Some graphic element has to dominate in the ad - the visual or the headline. Avoid equal-sized visuals, headlines and body copy, because the reader’s eye doesn’t know where to go.

“Make sure you have a dominant element which is the first thing people see in the ad, and that it tells people your primary benefit,” says Don Benton, president of The Benton Group in Vancouver, Wash. “You don’t want people to see the name of your business first.”

Suppose your message is that you have the most knowledgeable employees. Maybe you show a photograph of an employee helping a customer.

Smart Ad-Buying Tactics

Don’t buy oversized ads
“Some people mistakenly believe that the bigger the ad the more people will see it,” says Don Benton, president of The Benton Group in Vancouver, Wash. “That’s not true. As a matter of fact, readership actually declines from a 3/4 page ad to a full page ad, because there is no editorial copy to attract readers.” Furthermore, says Benton, a 1/8-page ad can be as effective as a quarter-page or half-page one. Reason?

“Most folks that will take the time to read an ad in paper have already decided to buy something,” he says. “It’s pretty rare that a person breeze through the paper and sees an ad that creates a desire to buy.” Newspaper readers tend to look at every ad that addresses their current desires to buy. Exception: Size does matter if you are promoting a special sale or seasonal service where you are looking to draw impulse shoppers.

Look for good buys in weeklies and suburban papers
While daily newspaper rates can be expensive in some metropolitan areas, don’t let that discourage you. Keep an eye out for small weekly and suburban papers, where you can dominate in your field for a much smaller investment.

“Consider especially the local entertainment listings and restaurant sections in these smaller papers,” suggests Sarah White, a Madison, Wisc., advertising consultant and author of Do-It-Yourself Advertising. “People tend to save such sections and go back during the week for entertainment and leisure time events. So people will see your ad more than once.”

Work out special deals
“Negotiate for reader response cards, additional ads in a special issue, special position, and free color,” says White. “Smaller papers are often agreeable to negotiate for a regular advertiser. Watch especially for special new sections, as it’s to a paper’s advantage to have those sections filled with ads.”

Put together a group buy
If your local paper is doing a spring home and garden section, get together with similar but non-competing companies. Find a landscape contractor, mulch provider or nursery. If you all decide to advertise in that special section, you might be able to negotiate a lower price.
Include color or white space

Just as salt makes a recipe come alive, so do color and white space add spice to your display ad recipe. "Color is a big plus factor," stresses John Bonney, president of Huntington Advertising in Lisle, Ill. "It's been proven that a four-color ad gets nine times the readability of a black-and-white one." Color is expensive, of course, so you may want to opt for a two-color production.

"Every color you add helps increase the attraction of your ad," says Bonney. If you don't want to invest in color, you can opt for white space instead. It's the least expensive way to add a "second color" to a newspaper page that is overwhelmingly gray. White space commands attention. And don’t be afraid that the white space is going to waste because you are not promoting your benefits in that area. You want people to pay attention to your ad and get the key point.

"People aren't interested in long copy," argues Bonney. "It blends too much with the editorial sections, and it takes away from the message you are trying to deliver." You can leverage the white space by surrounding it with a heavy border. "Make sure you use a solid thick quarter-inch to half-inch black border around your ad," adds Benton. "It will literally separate you from other advertisers. Readers cannot turn the page in the paper without such an ad catching their eyes."

Select a typeface that reinforces the message

If you look through a selection of newspaper ads and pick out the ones that stimulate you to take action, you will most likely find they have used headline typefaces appropriately. For each of your own display ads, select a typeface that reinforces your message. If your message is one of discounted prices, pick a "stencil" typeface that communicates a wholesale price look. If you are emphasizing elegance, then a tasteful typeface such as Coronet is appropriate. Note that these suggestions are for the headline, not for the body text. Indeed, avoid a junky look that can result when two typefaces clash. If you have an arresting headline typeface, use a plain typeface for your body copy. A good selection is Helvetica.

End with a tagline that calls the reader to action

What do you expect customers to do when they see your ad? State this in your tagline, which echoes the sale you are making with your ad.

"A good tagline reinforces the buying decision that readers presumably have made," says Briner of Creative Alliance. Some of these taglines for retailers have
Develop an advertising strategy

"An advertisement is nothing more than salesmanship," explains Steve Holsborg, president of Westlake Advertising Agency in Laguna Hills, Calif. "And good salesmanship is the result of careful planning." Holsborg suggests taking the following steps when planning your own advertising strategy:

1. Analyze the market situation. What is the competition doing? Does it work? How can you stand out from the rest?
2. Set advertising objectives. What do you want the customer to do after seeing your ad?
3. Set an advertising budget. Consider different media and time periods.
4. Select the target audience. Direct your advertising to genuine prospects who are interested in what you are selling.
5. Decide on a message. Your message is the heart and soul of your advertisement. Be direct and emphasize benefits.
7. Evaluate results. Track how your ads are selling by using dedicated coupons, department numbers, and phone numbers, or simply ask your customers what brought them to you.

Follow the recipe outlined in this article for display ads that will draw customers to you like hungry diners to a feast. "The only reason to invest your hard-earned money in advertising is to increase sales and profits," says Holsborg. "In print media this is accomplished by the perfect balance of graphics, layout and design, all reinforcing the heart of the ad: the advertising message."
NAA’s New Chairman Stresses Safety

Mark J. Tobin, president of Hartney Greymont Inc., was selected as chairman of the Board of Directors for the National Arborist Association at the association’s Winter Management Conference in Florida. Tobin, who has been a member of the board for eight years, previously served as vice chair and treasurer. Below are his priorities for the NAA in 2001.

The NAA’s new chairman, Mark J. Tobin, trod a unique path to his present position on the Board of Directors.

His involvement with the NAA dates back almost as far as his commitment to commercial arboriculture. He first cleaned up after a tree care job at the age of 17, when “a company doing some work at my parents’ house ran late,” he recalls. “I went out and helped them clean up, rake and chip. Three weeks later the guy called and offered me a job.”

Tobin liked tree work so much that upon graduation from high school he headed for The Stockbridge School at the University of Massachusetts, a two-year program in arboriculture. He stayed on at the university, earning a bachelor’s degree in science. After a few years working as a climber for Hartney Greymont, Tobin returned to school for a master’s degree in urban forestry at Michigan State.

The year was 1982, and Bob Felix offered the young graduate an opportunity to work for the NAA. Back then, the office was Bob and Pat Felix and not much else.

“Bob’s goddaughter was secretary. I don’t even think Pat was full-time then. The three of us worked in Bob’s converted garage. He told me I’d have this terrific job with the NAA. When I got there he didn’t have the money to pay me. I worked 20 hours a week for NAA and 20 hours a week for Bob Mullane at Alpine Tree, supervising utility line clearance crews in the Bronx.”

After six months of this split schedule, Tobin moved back to Massachusetts to take a job with Hartney Greymont. But his involvement with the NAA continued. He chaired the Standards and Education committees in the late ’80s and early ’90s. He was also on the ANSI Z133 Committee for five years.

Tobin’s views on the advantages of NAA membership are shaped by his concurrent involvement with other green industry organizations. He has been an active member of the ISA and past president of the Massachusetts Arborist Association.

His perspective from the inside gives him a complete understanding of all the NAA has to offer members. His opinion?

“Most members don’t take full advantage of the NAA,” he says. “They might get more than enough to justify their dues, but there is so much more. I know from 15 years of active participation at meetings. After talking with peers about challenges, ways to make money, and ways to make my business safer, I always come back from meetings with more inspiration.”

After almost 20 years with the NAA, Tobin brings a unique perspective to his chairmanship. He concludes that the NAA is on the move and his primary focus this year will be on industry safety.

“We’ve got an awful lot of exciting new offerings and services for 2001—from a model safety program to a business academy—to guide commercial tree care on that road from an industry to a profession.

“The NAA put together the first EHAP program,” Tobin stresses. “The NAA put together the first widely disseminated program on how to calibrate hydraulic sprayers to avoid drift and maximize efficiency. I know because I worked on this with Bob.

“The association has always been concerned about safety,” he explains, “but there is a point where you need to get out in front of your membership. We need to help direct or pull them toward where they need to be. It used to be that when someone from NAA came out, people who normally didn’t even wear hard hats would dig one out that day because someone from NAA was coming,” he recalls.

That sort of reputation needs to be re-established, in Tobin’s view. “There is no compromising on worker safety.”
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... continued on page 80
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1. All G-60 galvannealed material
2. Sides: Fabricated in (2) pcs. for easy removal
3. All wiring in conduit
4. Sealed lexan lens lights meet FMVSS 108 specifications
5. Anti-sail mud flaps
6. Hydraulic dump hoist
7. Safety body prop
8. Trailer light connector 6 pole; Elec. back up alarm
9. Pintle; or pintle/ball combination trailer hitch with tow hooks
10. Bodies: mounted, undercoated, coal tar epoxy coating inside chip box, primed and painted
11. Stainless steel tool box hinge pins w/grease zerk
12. Tool Boxes - “Weatherproof” - Bulb type weather stripping
13. Top includes (4) corner lifting eyes
14. Chipper Air Exhaust Vents

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

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

Optional:
1. Top ladder pruner rack

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

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In the eyes of the beholder

It may be just a matter of miscommunication. But whatever the cause, arborists seem to be pleasing some people some of the time while making a lot of others angry at the same time.

Take the trimming program in place at ComEd in Chicago, Ill. Seems the program recently won the Tree Line USA good forestry award from the National Arbor Day Foundation. But according to the Chicago Sun-Times, the same program has sparked cries of outrage from residents and city officials. One member of the Citizens Utility Board that works with ComEd said he thought word of the award was an early April Fool's Day joke. One suburb had previously issued a cease and desist order against ComEd's arborists and resident complaints date back to the early 1990s. But the foundation says its award is specifically aimed at rewarding utilities that have abandoned wholesale "topping" of trees in favor of "natural pruning."

Meanwhile, cities and towns in other parts of Illinois are bracing for a wave of complaints from residents as the Illinois Power Company prepares a statewide tree-trimming standard. The Chicago Tribune quotes an attorney as saying that local residents fear "one-size-fits-all rules that will not take into account community needs."

For instance, the town of Mount Prospect passed a bylaw prohibiting summer pruning of its 1,500 American elm, a measure meant to stem the spread of Dutch elm disease. And a utility spokesman said the issue has energized customers in a way that few issues do. Already, more than 1,000 people have commented in writing on the plan.

"It's created one of the largest responses we've ever seen," the spokesman said. "It's so personal, it's so vital and basic to community aesthetic values that it's important people have a say."

Said another utility official: "Tree trimming has been an emotional issue for a long time and the discussions around this filing have been no exception."

Pre-emptive complaint

The lead horticulturist at the University of Idaho has found a way to pre-empt the complaints that often attend the removal of an historic tree. According to an article in the National Arbor Day newsletter, David Rauk set up a display next to several large Lombardy poplars set for removal. The display came out before work even began and stayed up during and after the work. It explained why the trees were coming down and also detailed a plan to grow next-generation trees from the suckers growing out of the tree's stump.

Rauk reportedly did not receive a single complaint about cutting the trees, which grew along the perimeter of the university campus. The trees dated to the 1890s.

A tree by any other name

There's something a little, well, unique, about one palm tree on the grounds of the Northmont Elementary School in the San Diego, Calif. suburb of La Mesa. That's because the tree is actually a cellular phone antenna. According to an Associated Press article, Sprint Communications paid the school district $11,000 for the right to locate its tower on school grounds. But parents, concerned the antenna posed a health hazard, despite its leafy disguise, had politicians backpedaling and the project on hold.

A view to die for

In Sydney, Australia, people are going to new lengths to enhance their water views and the city's trees are taking it on the chin as a result.

According to an ABC News report, Sydney has some of the world's toughest environmental restrictions, right down to limitations on cutting healthy trees, regardless of whether they are on private or public property. In fact, fines of up to $100,000 can be levied for cutting trees without permission of a city board.

Apparently, more than a few property owners have resorted to drilling and injecting poison in trees blocking their view of Sydney Harbor, a view that can sharply boost a property's value. City arborists have reportedly developed a knack for spotting and reversing poisonings in time to save the trees. But in the event it doesn't work, the city has another trick: Any tree determined to have been killed by poison is shrouded in a giant sheet for six to eight months.
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New Tree Species Discovered?

By Steve Rudolphi

As an owner/operator of a local tree service for 16 years, I have seen many objects either nailed, plastered, lodged, stored, etc., into trees. This collection includes nails, wires, fencing, cables, chains, horseshoes, tire chains, bricks, stones, ceramic insulators, steel posts, concrete patching, and even basketballs and baseballs.

Also in the past 15 years, we have had a number of incidents involving birds, squirrels, raccoons, possums, cats, snakes, hornets and honeybees.

Recently, these two categories came together during a tree job.

A customer wished to remove a 50-foot silver maple (Acer saccharinum) that was encroaching on the back wall of his sunroom. Nothing unusual about the job, except that the tree had protruding antlers about 8 feet up the trunk. Years ago, the customer had nailed the results of a successful deer (Odocoileus virginanus) hunting season to the tree, and with the passage of time, the tree grew around the antlers.

The removal job proceeded smoothly and we managed to salvage the antlers. We were not sure whether to send this item to TCI, Ripley’s Believe It or Not or the state university. Perhaps the university could declare a new species of maple (Acer saccharinum/Odocoileus virginanus). Anyway, it is something you don’t see everyday, and hopefully worth sharing.

Steve Rudolphi, Effingham Tree Service, Watson, Ill.
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