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Young Tree Pruning

By: Jeffrey Lee. Branch Management. Riverside, CA (909) 319-7003

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The door swung open with a bang as the small, frail woman stepped onto the porch. The Widow Carter was beside herself, anticipating the arrival of her ISA Certified Arborist, Big Al Fontaine. At just that moment, she heard the squeal of the mud-gripping tires of Al’s trusty white 4x4 steed. Today is the day that Big Al Fontaine will teach the Widow to prune the recently planted trees throughout her well-manicured landscape.

The Widow Carter is looking for a simple “maintenance” pruning, one that she can do herself. Let’s take a brief glance at Big Al’s class outline, while we take a step back and look at the trees.

There are different reasons to prune - the trick is to focus on the goal of pruning (i.e. to promote fruiting and flowering, control size, enhance aesthetics, and/or hazard reduction), and then work to achieve the desired effect, keeping in mind the tree’s response to pruning.

1. Dead and Dying. This is the easiest objective to meet. If a branch is broken, dead and/or dying, remove it - this is a limb (if left on the tree) that will provide an expressway for those nasty little pathogens to devour an otherwise healthy tree. While it can be difficult to distinguish the dead and dying from the dormant, a quick scratch of the fingernail will expose green tissue in a living but dormant limb.

2. Crossing and Rubbing. These are limbs that can eventually lie across each other creating a weaker “top limb.” When the trees mature, and size and weight become an issue, the weight of the top limb may precipitate a failure of the lower limb, causing both to plummet earthward uncontrollably.

3. Parallel. When two limbs are originating from nearly the same point on the trunk, and grow in the same direction, and for all intents and purposes are doing the job of one, this (again) is a good time to remove the weaker of the two limbs.

A young tree is the most favorable candidate for pruning, to eliminate future problems or possible hazards. Most young tree pruning can be done with hand pruners, a pole pruner and a hand saw (for the larger limbs). There isn’t a need for the big chain saw with that menacing 36-inch guide bar.

Remember that less is better. Over pruning is probably the most prevalent pitfall in tree work. Keep it simple and basic. Reach the desired goals, then STOP!!!!!! Make clean collar cuts and move to the next tree.

Lastly, not all tree conditions can be remedied with just one pruning, and it may take several seasons to achieve the desired results. Use this time to promote the development of a fine relationship between yourself and your client - sort of like the relationship between Big Al and the Widow Carter.

“Big Al Saws It Off”

Tree pruning requires a variety of professional equipment to accommodate the tree branches’ size, location and number to be pruned. The arborist needs to have, as part of his arsenal: a hand pruner, several sizes of hand saws, loppers and pole pruners.

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Greetings to TCI Readers

As the new executive vice president of National Arborist Association, I am happy to acquire the role of publisher of TCI magazine. Our goal has always been to publish the most relevant and outstanding articles pertinent to the tree care industry. We plan to continue our standard of excellence, but as always, are open to your input in how we can improve our publication for your needs. Please feel free to share your insights and input with us at any time.

I arrive at the NAA with a background as an association management professional. Though I do not have experience in the “green industry” as a precursor to this role, I do bring an enthusiasm for learning about this field and a desire to project the professionalism of those who practice in the industry to consumers, potential members and customers of NAA’s services. I am also committed to quality, standards and excellence in everything that we do as an industry and as an association serving the industry. My colleagues have been very generous in their warm welcome, and I look forward to being a part of a very important and very special industry.

To those of you who are long-time readers who may benefit from becoming members of NAA, I would encourage you to explore the expanding services which are in the pipeline in the strategic vision developing for our future. To those of you in related green professions, thank you for your loyal readership with us and for being part of our growth over the last nine years. We appreciate all of you.

We are proud of the contribution that this publication makes to the industry and will strive to be on the cutting edge: providing you with timely and interesting material, which will assist you in your business management. I look forward to being a part of this industry and welcome your thoughts regarding our publication and the industry at any time. It’s great to be here!

Cynthia Mills, CAE
Executive Vice President
National Arborist Association

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Please circle 72 on Reader Service Card
Chain saw expert Tim Ard explains the importance of recognizing the need for a perfect notch, how to select the proper one, and the way to execute it.

On the Cover

Trees shading Rum Point on Grand Cayman have successfully adapted to high winds and salt content.
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TCI's mission is to engage and enlighten readers with the latest industry news and information on regulations, standards, practices, safety, innovations, products and equipment. We strive to serve as the definitive resource for commercial, residential, municipal and utility arborists, as well as for others involved in the care and maintenance of trees. The official publication of the non-profit National Arborist Association, we vow to sustain the same uncompromising standards of excellence as our members in the field, who adhere to the highest professional practices worldwide.
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Tree Control

Pruning & Hinge Material

By Tim Ard

Last October, I wrote an article for TCI on hazard tree recognition. In it, I discussed some important factors I have discovered in my training work regarding determining when fiber in a tree could make it hazardous to work in.

I thought it might now be interesting to discuss the hinge material and look at what is needed to allow this fiber of the hinge to work.

A Notch Up

Whether the arborist is removing a limb from above or felling an entire tree from the ground, it is important to recognize the need for a perfect notch, how to select the proper one, and the way to precisely execute it. Some notches may only be a saw kerf, some with an opening over one hundred degrees. What does the face-notch on a particular hand saw or chain saw cut accomplish?

As professionals, we take the face-notch for granted. We cause problems by not understanding what notches do and how to achieve proper results with them. The notch is the front line of success in hinge work as we look to limb and remove trees.

When I ask most saw users what a face-notch is and what it accomplishes in the sawing process, they usually tell me it directs the limb or tree where they want it to go. Some say it causes the tree to lean in the direction they want it to go. Others insist it keeps the wood from busting or splitting (barber chair-
As shown, the open-face allows the tree or limb to hinge the full area of the notch opening. In this case, the tree would be all the way to the ground—a much more controlled placement. This is the key to directional felling and full utilization of the hinge material behind the notch.

The open-face is illustrated in this photo with more than a 70-degree notch. This one is approximately 90 degrees.

ing) during the fall.

While all of these answers are accurate, they don’t answer the question of what the notch really does. For example, does a notch really determine the direction of the tree? I have on occasion set the notch in perfectly toward the place I wanted the tree to lay. I used felling sight lines on top of my chain saw, calculated the lean of the tree or limb, and made sure everything was cut just right. The tree still landed off target. What happened?

I found out quickly the notch doesn’t set the direction without its co-worker—the hinge. The true purpose of the face-notch is to allow the hinge to work. The steering of the limb or tree comes not only from the directional notch but from the hinge working behind the notch line, keeping the tree attached until just the right time. In short, if you cut the hinge off during the back cut, the limb is going where it wants according to the lean(s), which is not necessarily where you have it notched. The notch allows the hinge to work.

Can the notch cause the tree or limb to lean? Yes, if you consider the fact that if you remove enough surface with a notch, it could weaken the wood’s in-

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A tab cut can be used on smaller diameter limbs, small trees or brush stems.

The tab will compress on these small stems and will usually act as a springboard. This cut can be used as a more controlled alternative to just a vertical or horizontal kerf cut.

tegrity to the point that it begins to move. This doesn’t mean however, that the stem or tree will move in the notched direction. If your tree leans away from the notch, it is probably going to fall away from your notched direction.

An improperly shaped notch can definitely cause splitting, tearing or pulling of fiber during a removal cut. What do I mean by improperly shaped? There are three notch shapes generally used in tree felling. These configurations may also be adopted for work on limbs up in the tree.

The first style is the common notch, which is usually 45 degrees at its opening. The base of the notch is prepared with a horizontal or perpendicular cut into the limb. Then another cut is made angled down into its apex. The wedge of wood that is removed is angled at approximately 45 degrees. An inverted form of the common notch, often used in the Western United States and in the treetops, is the Humboldt. The wedge removed in this style is 45 to 55 degrees. This cut removes the angled cut from the butt or base of the stem. The Humboldt is used in the treetop only in tree removals because the face cut would remain on the standing limb. The Humboldt is widely used in fell-
ing in the West. It offers a smooth butt log when felling trees, since the notch cut remains on the stump and not in the merchantable log.

A third notch version that I use most often is the open-face notch. This notch, pioneered in Sweden and brought to the United States by Soren Eriksson, removes a 70 degree or more wedge from the face surface. It allows the hinge to work with a full motion, thus offering greater control and accuracy—something not afforded with the other notch styles.

**Up Front ...**

The important thing to remember is not what the notch is called but rather how it works and when and how it's administered. There may be times when you want the hinge to break quickly, allowing a limb to snap the hinge and fall horizontally to the ground. In this notch/hinge plan, a simple saw kerf may suffice as a notch. A tab cut may also be used to achieve this type of result. In both these cases, you should be working with a very lightweight limb. I would never use a closed kerf notch with a standing tree or a heavy limb, as splitting and operator injury could occur.

The common or the Humboldt notch offers a more controlled fall or limb movement than the tab or kerf cut, but remember to consider how far the tree or limb will move before the hinge is stressed or broken. It will only move the degree opening of the notch. Forty-five to 55 degrees movement at the top of the stem is not really very far. Many times control is lost before you pass the severed stem in your planned placement area.

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vertical limb, you must use a back cut with this notch type that is higher than the apex of your notch. (It's called stump shot out West). You must do this to insure the limb doesn’t rebound rearward toward you. The open-face, installed properly, offers greater limb movement before the hinge is broken, thus maintaining longer control. This extra control time is a real benefit in tight situations, and I feel much safer to assure planned results.

Since this notch may be from 70 to over 100 degrees, it is very versatile in all controlling situations. It affords a very important consideration in questionable fiber. With the open-face, an arborist can keep the back cut level with the notch apex. In angled fiber like that of a limb crotch or down low on a stump where root fiber is sometimes angled, it can insure the planned hinge width. This condition causes many saw operators to doubt their skill and not rely on a hinge because they have experienced an unknown loss of hinge material. By keeping the back cut level, it is possible to maintain the hinge width planned if angled fiber is present.

I hope that this discussion of the notch increases your awareness of the importance of the notch and the thoughts behind it. Hinge material, whether in a decaying or green tree, must have a good notch in front to achieve success. I wish I could verbalize these things more clearly in a few words, but sometimes hands-on experience is the only way to show cutting techniques with any success. Training programs are available from Forest Applications Training offering this information to you and your crews. Contact us for more information on these programs. On our website at http://www.forestapps.com you can read more about hinging techniques and see other drawings and photos. If nothing else, we will be glad to answer any questions more specifically. Just e-mail your questions to info@forestapps.com or write to Forest Applications Training, P.O. Box 1048, Hiram, GA 30141.

Tim Ard is president of Forest Applications Training, Inc.
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High Volume Sprayers for Treating Trees: Managing Drift and Exposure

By Dr. Bruce R. Fraedrich

These night photos show the effect of proper calibration on reducing spray drift. Photo on left shows a #14 disc with 400 psi at the gun. The excessive pressure is fracturing the column, resulting in many fine particles that are more subject to drift. Photo at right shows an application with a #14 nozzle disc operating at 250 psi at the gun. Note there are few fine particles.

Pesticides are used in landscapes to help manage a variety of pests on turf, herbaceous ornamentals, woody ornamentals, and on rights-of-way to manage vegetation. Handheld powered sprayers are often used for these pesticide applications, although other options are available. Because these sprayers are used in urban and suburban landscapes, managing drift must be a major objective, especially when treating tall vegetation such as trees and shrubs. This article describes handheld power equipment that is commonly used to treat plants and provides calibration and application techniques to manage spray drift. Emphasis is placed on spraying tall vegetation, especially trees and shrubs where the potential for drift can be significant. Alternative techniques to spraying for pest management will be presented where appropriate.

Hand-Held Power Sprayers: Trees and Shrubs

Equipment - Hydraulic Sprayers: Most pesticide applications to trees and shrubs are performed with hydraulic sprayers with pump capacities ranging from 10 to 60 gallons per minute (gpm). Trees and shrubs under 25 feet in height can be treated with 10 gpm sprayers; taller trees usually require 25 to 60 gpm sprayers depending on height.
Proper application technique to the lower crown. Note applicator is positioned close to the lower crown and is using reduced volume and pressure to treat lower foliage.

Pumps must be capable of generating pressures of 500 to 1000 psi, depending on the required height of the spray column and length and diameter of the spray hose. Sprayers may be equipped with single or multiple tanks capable of storing and applying different treatments. With the advent of landscape IPM programs, many sprayers now have a large fresh-water tank and smaller mix tanks. Products are custom mixed on site, depending on the specific plant and pest and on customer preference.

Treatments are applied to trees and shrubs with handheld spray guns that have variable-sized nozzle discs. Large nozzle discs provide the necessary flow volume that affords treatment of taller plants. Smaller nozzle discs provide less flow volume and are adequate for treating shorter plants. Table 1 provides recommended nozzle disc sizes for the FMC 785 spray gun that is commonly used for treating trees and shrubs. Spray hose used for treating trees and shrubs usually varies from one-half inch to 1 inch in diameter and must be capable of withstanding pressures of 1000 psi. Large diameter hose is required to minimize pressure loss from friction that occurs due to the high flow rates required to attain height.

**Calibration - Hydraulic Sprayers:**
Managing spray drift begins with calibration of the hydraulic sprayer. Calibration is required to ensure that adequate height of the spray column is attained using the largest spray droplet size to decrease the likelihood of off-site movement.

The first step is estimating the height of the plant to be treated. This dictates the required flow capacity to attain height, which is controlled by the spray gun nozzle disc and pressure. Table 1 lists the recommended nozzle disc size and corresponding flow capacity to attain various heights using the FMC 785 Spray Gun. Once the disc size is selected, pump pressure is set to provide 200-to-400 psi at the spray gun. The required pressure depends on the height of the target plant. Pump pressure usually must be higher than the pressure at the gun to compensate for pressure loss from friction that occurs as the spray fluid moves through the hose. The amount of pressure loss is influenced by flow rate, hose length and diameter and hose material. Each hose coupling causes an additional pressure loss of up to 4 psi and hose reels and meters cause losses up to 10 psi each.

Proper calibration of hydraulic sprayers is a critical step in managing pesticide spray drift, especially when treating tall vegetation. Excessive pressure for a chosen flow capacity (nozzle disc) will result in fracturing the spray column, producing small droplets that are more subject to drift. In other words, the release point (the height at which the spray droplets are no longer influenced by the spray equipment or the applicator) of the spray will be too low to the ground, which increases the likelihood of off-site movement.

When treating tall trees if wind is a factor, larger nozzle discs can be used to increase volume while maintaining the...
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same pressure at the gun. This will maintain the spray column for a greater height and produce larger spray droplets in the upper crown that are less subject to drift. In other words, the release point of the spray will occur at a greater height. When treating short plants when light wind is present, larger nozzle discs and lower pressures will provide larger droplets that are less subject to drift.

**Application Technique To Manage Drift: Hydraulic Sprayers:** Drift is minimized by spraying under calm conditions and using proper application technique. Applicators should always be positioned close to the target plant with any wind at his/her back or side. This will provide thorough coverage and ensure that the spray release point is close to the target plant, which will minimize off-site movement. For tall trees, the applicator usually is positioned just outside the crown. For very broad-crown trees, the applicator can begin spraying beneath the canopy thereby using the trunk and branches as protection from any wind.

Using a properly calibrated sprayer, the applicator uses a straight stream to build a column of spray. This is done by holding the gun perfectly steady and allowing the column of spray to build immediately above the applicator. If slight wind exists, the gun may actually be pointed slightly back over the shoulder of the applicator thereby allowing the wind to carry the column into the crown.

### Table 1: Disc sizes and corresponding output capacities at specific pressures necessary to attain a specified height with minimum drift using an FMC 785 Spray Gun.

<table>
<thead>
<tr>
<th>HEIGHT</th>
<th>DISC SIZE*</th>
<th>CAPACITY (GPM)</th>
<th>PRESSURE @ GUN (PSI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;10'</td>
<td>6</td>
<td>2-3</td>
<td>200-250</td>
</tr>
<tr>
<td>10-20'</td>
<td>8</td>
<td>5</td>
<td>300</td>
</tr>
<tr>
<td>20-30'</td>
<td>10</td>
<td>8</td>
<td>300</td>
</tr>
<tr>
<td>35-50'</td>
<td>12</td>
<td>14</td>
<td>400</td>
</tr>
<tr>
<td>45-70'</td>
<td>14</td>
<td>21</td>
<td>400</td>
</tr>
<tr>
<td>65-80'</td>
<td>16</td>
<td>27</td>
<td>400</td>
</tr>
<tr>
<td>&gt;75'</td>
<td>18</td>
<td>34</td>
<td>400</td>
</tr>
<tr>
<td>&gt;90'</td>
<td>22</td>
<td>53</td>
<td>400</td>
</tr>
</tbody>
</table>

*Disc size represents hole diameter in increments of 1/64 inch.

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The surges created by the pump and updraft created by the column carry the spray into the top of the tree.

Once the column reaches the top, the gun is slowly moved from side-to-side and downward. Sudden movements of the gun must be avoided because this breaks the spray column resulting in poor coverage and excessive drift. After the top of the plant is covered, the applicator fans-out the spray column to reduce flow volume and cover the middle and lower portions of the tree. The applicator then shuts off the gun, repositions to another area of the crown and repeats the same procedure until the necessary level of coverage is obtained. The applicator should never walk and spray simultaneously, even when treating small trees and shrubs.

When spraying near sensitive areas, such as property lines or near ponds and streams, the applicator should be positioned between the sensitive area and target plant to reduce the potential for drift to the sensitive area. Applicators commonly sacrifice thorough coverage to prevent drift to sensitive areas. On tall trees, only the lower portion may be treated if off-site movement of spray can not be tolerated.

On small trees and shrubs, applicators should be positioned close to the target plant and use a fan spray pattern. If necessary the applicator should kneel down to spray lower portions of the plant. The spray gun can be inserted inside the canopy of dense shrubs to obtain coverage. Pressure and volume should be not exceed the specifications in Table 1. The potential for drift, “over-spray” and phytotoxicity increases when applicators spray from a distance using a straight stream at high pressure.

The impact of drift can be avoided on urban and suburban landscapes by taking some sensible precautions. Select products carefully to avoid pesticides that have the greatest health and environmental risks. If there is potential for drift onto neighboring properties, notify property owners and ask permission to spray. Turn-off air conditioners, close windows and get people and pets away from the treatment area. Overturn birdbaths, remove sensitive items such as bird feeders, pet dishes and any outdoor laundry from the treatment area. If items such as picnic tables, swings, lawn furniture or cars can not be moved from treatment areas, they should be washed down with fresh water before and after spraying.

Miscellaneous Handheld Sprayers for Pest Management

Backpack Units: Motorized, low-volume (1 to 2 gpm) sprayers that are available as “backpack” or cart units are occasionally used to spray vegetation under 15 feet in height. These sprayers have minimal capacity to adjust pressure and volume output. Drift is minimized by using the lowest pressure and lowest engine speed necessary to provide height and the applicator is positioned as close
Mistblowers: Truck-mounted or backpack mistblowers were once widely used for pest management on landscape trees and shrubs. Today, few products are registered (labeled) for mistblower applications (product labels seldom list mixing rates for a mistblower, which are generally ten times greater than hydraulic mixing rates). Of the 28 pesticide products approved for use by the Bartlett Company, only three provide mistblower rates.

Mistblowers have the highest capacity for drift because air rather than water is used as the pesticide “carrier,” which produces a very small spray droplet relative to hydraulic applications. Due to limited availability of products for mist application and the high potential for drift, mistblowers are seldom used for treating landscape trees and shrubs or for treatment of right-of-way vegetation.

Alternative Treatment Techniques

Landscape Tree & Shrub Pests: Numerous tree injection products are now available that can be directly injected or implanted into the trunk or root flare of trees to provide pest management. These products consist of systemic pesticides that are inserted or implanted into the sap-stream and are subsequently translocated throughout the crown. Trunk wounding and the potential for wood decay are the primary disadvantages of tree injection. Many tree injection products are being sold without adequate efficacy testing. Subsequently some of the products are ineffective for their intended purpose.

Recently, a category 3 (Caution label signal word) systemic insecticide, imidacloprid, has been registered for soil injection and drenching for insect pest management. The product need only be applied to the soil area immediately adjacent to the tree trunk or beneath the crown of the shrub. Roots absorb the insecticide which is then translocated throughout the crown. A growth regulator for trees is highly effective when applied in a similar manner. There is great potential for pest management products that can be applied as a soil injection or a soil drench as an alternative to spray treatments.

Right-Of-Way Vegetation Management: The trend in vegetation management on utility rights-of-way is away from high volume treatments with hydraulic equipment and toward selective low volume application, basal stem and cut stump treatments. These latter techniques use compressed air (backpack) sprayers which apply low volumes of spray. Treatments are directed only to selected plants that may eventually grow into conductors. Plants that mature to low heights are often left untreated to form stable plant communities in the rights-of-way.

Drift is minimized with low volume techniques by selecting the proper nozzle type, using low pressure to ensure large droplets and using proper application tech-
nique. For low growing brush (< 6 feet) a 40 degree flat fan nozzle is generally recommended; for medium brush (6-12 feet), a 15 degree flat fan nozzle and for tall or hard-to-reach brush, a straight stream nozzle is recommended. Straight stream nozzles also are used for basal stem treatments and cut stump treatments. With most herbicide treatments for brush management, 50 percent to 70 percent foliage or stem coverage is all that is needed to obtain control. Spraying to runoff is not needed or recommended. Applicators should always be positioned as close to the target plant as possible to reduce risk of drift.

Hand-Held Sprayers: Turf Treatments

Equipment: Handheld power sprayers for turf generally consist of low-volume, (5 to 10 gpm) hydraulic units that operate under low pressures (usually in the range of 100 psi). Sprayers may be equipped with multiple tanks that are capable of applying different treatments. Some sprayers now have product injection capabilities at the pump or at the spray gun which allow greater versatility in customizing treatments to meet plant requirements and consumer preferences. Most turf applications on residential and commercial properties are made with hand-held spray guns with flooding nozzles that provide 2 to 6 gpm. Spray boom attachments that are manually operated are also available. Spray hose that connects the pump to the spray gun or manual boom is narrow diameter (three-eighths to one-half inch). Very little pressure loss occurs between the pump and gun due to the low volume application.

Calibration: Calibrating sprayers to minimize drift primarily involves setting pressure as low as possible to deliver the required flow that is dictated by the specific flooding nozzle on the spray gun. Using higher-than-needed pressures could produce small droplets that are more prone to drift.

Application Techniques: As with all spraying, drift can be minimized when applications are made under calm conditions. Spray guns should be kept relatively low to the ground to reduce effects of any wind. Applicators should position themselves between sensitive areas and the treatment area and direct the spray inward. Untreated buffer zones can be left adjacent to sensitive areas if drift is possible to these areas. Spot treatments as opposed to broadcast application can be used for post emergence herbicide treatments when weed density is sparse. This will minimize pesticide usage and reduce risk of drift.

Alternative Treatments for Turf: Grant applications can be used for
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most pesticide applications on turf. Drop spreaders leave little potential for off-site movement of the product.

Minimizing the impact of drift through product and program selection - landscape pest management

Many low toxicity products are now available that offer effective management of landscape pests. Products such as insecticidal soaps, horticultural oils, pyrethrum and biological insecticides such as Bacillus thuringiensis are widely used for pest management in urban areas.

Biologically derived products such as the recent introduction of Spinosad provide low toxicity alternatives for effective pest management. Many synthetic pesticides such as pyrethroids and sterol inhibiting fungicides offer low mammalian toxicity combined with extremely low mixing rates to obtain effective pest management.

Integrated pest management programs are now offered by many commercial landscape management companies. IPM programs provide a monitor technician who inspects properties at periodic intervals for pest infestations and plant health problems. The number of inspections provided depends on the plant species diversity, previous history of pest infestations, client expectations and budget. Chemical, cultural and/or biological treatments are applied before pests reach damaging levels.

Equipment has been developed that allows custom mixing and application of products on each property according to the specific need. Landscape IPM programs have reduced pesticide use by as much as 90 percent while providing improved management of plant health compared to traditional programs using planned targeted treatments (Holmes et al.).

Dr. Bruce R. Fraedrich is vice president of research at Bartlett Tree Research Laboratories in Charlotte, N.C.
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Integrity as Important as Productivity for Today's Employees

By Wayne Outlaw

With today's tight labor market, staffing for a tree care company can be especially difficult. With the labor pool so low, even those who are available may not measure up to your standards.

As an employer, you are responsible for making prudent hiring decisions. For example, if an employee under the influence of drugs were to injure another, the company and the manager who hired the employee could be held responsible under today's negligent hiring statutes. If they damage the customer's property or injure the customer while on a job, it can be even more significant. When you realize the impact the behavior and performance an employee has on the company's reputation and finances, it is wise to use every means to make a good hiring decision.

Especially with the impact and liability of a hiring decision, don't you wish you could use x-rays to uncover hidden or potential problems that could affect a job applicant's performance, tenure, manageability—even integrity? After all, the U.S. Department of Labor places the annual cost of embezzlement at $6 billion.

The next best thing to x-ray is a pre-employment evaluation instrument that can take some of the guesswork out of selecting the right candidate for a position. Even the most extensive interviews can fail to uncover unseen problems. A properly selected pre-employment evaluation tool, such as an integrity instrument, can go a long way to providing insights as to how the candidate is likely to perform on the job. It can not only identify those individuals with the propensity for workplace theft and drug use, it can also identify work and supervisory attitudes that affect the individual's tenure and ease of management.

The banning of polygraph (lie-detector) tests in 1988 has spawned a growth industry of paper and pencil integrity tests. These tests ask applicants their attitudes about theft, uncover admissions of employee theft, and explore other workplace related wrongdoings. These instruments ask questions that seem to be routine and innocent, such as, "Have you ever taken any items from work that belonged to the employer?" They also assess traits associated with irresponsible behavior with questions such as, "Sometimes I went against the wishes of my parents." While there may be some disagreement on whether these tests invade privacy and incorrectly diagnose some people, many business owners swear their use helps curtail employee theft and substance abuse, and predict the individual's tenure and man...
ageability. Correctly used, they are an invaluable tool.

The first paper and pencil integrity test was developed in the 1960s by John Reed, a polygraph examiner from the Chicago Police Department. Today the Reed Report, along with several other evaluations, the Stanton Survey and Orion Systems, are widely used. Some are used exclusively for pre-employment while others have a wider use. Some, such as Orion Systems, focus exclusively on pre-employment application. These tests are scientifically validated, reliable, time tested, and produced by reputable companies.

These integrity instruments are relatively easy to administer and can be done in as little as fifteen minutes. The applicants’ responses can be called in to a testing firm for scoring or can be scored quickly at your place of employment using a personal computer. The cost for the instruments is very low, usually less than $25 per applicant, which is a small investment for protection of assets and peace of mind.

In terms of workplace theft and drug use, these identify candidate risk zones in relationship to workplace theft and drug use attitudes. These risk zones are divided into three categories: low, marginal, and high-risk. In “work and supervisory attitudes,” it identifies the attitudes in one of three categories: above average, average, and below average. An instrument does not reject an applicant but it does make recommendations.

Properly administered, these instruments have a high degree of validity. Organizations have done significant amounts of research to prove the extent of the validity. An instrument we use with clients has a very high statistical index of consistency and stability. With 1.0 being considered perfect reliability, this survey has been validated in Workplace Theft Attitudes at .92, Workplace Drug Use attitudes at .90, Supervisory Attitudes at .72, and Work Attitudes at .65. In short, if a report says a candidate is a high risk and why, it is a good idea to pay attention.

No instrument is totally accurate. The report from any pre-employment evaluation instrument should not be the only factor in hiring. For this reason, it is recommended that any less than positive finding be followed up with a structured interview to explore the finding. This not only will provide a second opinion, but also defend its use as a valid application of the instrument.

For a tree care company that realizes the amount of responsibility and liability related to each employee, it is prudent judgment to use every opportunity to make a good hiring decision. If a simple inexpensive instrument can reduce theft, drug use, and identify employees who are easier to supervise and manage, that small investment would be very worthwhile.

Wayne Outlaw is author of Smart Staffing: How to Hire, Reward, and Keep Top Employees for Your Growing Company. In it, he presents solutions to the specific challenges listed above. Outlaw speaks and consults to help organizations increase their results through employee performance. He can be reached at 800-347-9361 or www.smartstaffing.net
Growth Products Ltd. has officially received registration of Companion (Growth Product Ltd.’s microbial inoculant), and three other products (Micrel Total, Arbor Care, and pH Reducer) by the State of California. Companion was registered as a “Biotic” (The state’s definition of a biotic is, “all materials for which claims are made relating to organisms, enzymes, or organism byproducts.”) - the other three were recognized as fertilizers. Growth Products now has 17 products with California State approval. For more information, contact Growth Products at 800-648-7626.

West Coast Shoe Company (Wesco) is putting their factory boot rebuilding expertise to work by offering this service to customers. Once worn boots are received, Wesco will replace key components including vamps, full leather insoles, full leather midsoles, steel shanks, outsoles, heels, laces and worn eyelets. Wesco’s craftsmen will also inspect the boot’s counters and backstays to determine whether they should be replaced, as well. A Factory Boot Rebuilding Brochure provides a diagram of a boot cross-section and illustrates the rebuilding process and what can be replaced. This brochure and the company’s 1998-99 full-line boot and accessories catalog, including a custom-fit form, are available at no charge. For more information, call (800) 326-2711.

Pruning and lopping are not only quick and easy with pole pruners from the Porter-Ferguson division of Lowell Corporation, but are actually kinder to the trees and shrubs encountered by workers in nursery, utility, highway, farm and general tree work. These pruners feature dual cutting blades, not only making cuts quicker and easier but also preventing unnecessary damage to bark and cambium while promoting quick, clean healing of a branch from both sides. There are two pole pruners in this line—the Type OP and RP. Both combine light weight with high strength. For tight spots, the Type OP short Arm Pole Pruner will handle thick, damaged, or diseased growth in shade, ornamental and orchard trees. Type RP is for use when extra leverage is needed for high-up cutting jobs. For more information, call (800) 456-9355.

Corona Clipper recently introduced its new CH7720 Cut ‘N Hold pruner. With a cutting capacity of 3/4-inch diameter, the pruner incorporates a uniquely designed blade and hook attachment that allows easy harvesting and secure handling of thorny stems or branches. The CH 7720 has a new 45-degree angle cutting head, large bearing surface and comfortable co-molded Corobond handles and features exclusive Coronium steel-forged alloy blades that are fully heat-treated to hold a precision edge, a fully forged hook for extra strength, internal grease relief and a precision made self-aligning pivot bolt and patented hi-torque all-steel locking nut. It’s also ergonomically designed to position one’s hand and wrist to avoid thorns on. It’s broad-shouldered, tactile handle design provides extra cutting comfort and a well-balanced, natural fit with less fatigue. The low-profile thumb lock is easy to operate, staying out of the way while the tool is in use. For more information, call (800) 847-7863.
STAHL, a division of Scott Fetzer Company, continues to expand by adding new products to its line of commercial truck equipment. Recently announced was the construction of a new dump body manufacturing plant in Cardington, Ohio. The new facility will include state-of-the-art manufacturing processes and equipment. The 70,000 sq. ft. facility is scheduled to be completed in the spring of 1999. STAHL’s first entry into the dump body market is the result of more than two years of marketing research and product testing with small dump body users. The result is an innovative small dump body that is altogether different than anything else in its class.

Vermeer Manufacturing recently introduced the BC1800A drum-style brush chipper with hydraulic winch. Equipped with large 18-inch (46 cm) vertical feed rollers, it provides operators the capability of pulling in and chipping material up to 18 inches (46 cm) on an intermittent basis. The new chipper has Vermeer’s trademark dual vertical feed rollers, independent live hydraulics and available patented AutoFeed. Three engine options are available, including a 106 hp (79 kw) Perkins T4.40 diesel, a 115 hp (86 kw) John Deere 4045T diesel, and a 116 hp (87 kw) 4BTA 3.9 Cummins. The chipper has an extendable tongue that allows it to be lengthened at 12-inch (30.5 cm) and 24-inch (61 cm) increments. This machine has a heavy-duty 8000-pound (3,629 kg) axle adding reliability to the machine. It has torsional rubber-type independent suspension that reduces vibration and adds life to the machine. Its 12-ply tires measure 12 inches (30.5 cm) x 16.5 inches (42 cm) to provide better floatation when rolling across yards. For information, call 1-888-VERMEER (837-6337).

Oregon Vanguard 3/8-inch-pitch roundground chisel chain, called 72V, is now available after a depth-gauge redesign that improves cutting performance and allows easier maintenance. The fine-tuned product has also won Underwriters Laboratories certification for its low-kick out-of-the box safety qualities. This second-generation chain, formerly 72L, is fully compatible with existing chainsaw guide bars and chain drive sprockets. Vanguard chain is available from Oregon dealers throughout the United States.

Shindaiwa recently introduced the PB270B PowerBroom model with standard brush attachment. This broom can be used more efficiently for scrubbing off caked-on debris, spreading liquids and sealers on flat surfaces, and weeping flat roof debris and gravel. With variable throttle control, the sweeper pushes debris ahead of the operator and, with a light touch of the throttle, it carries its own weight back to a new starting point, with little need for lifting of the unit. For more information, contact (503) 692-3070.

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A partnership between the Massachusetts Arborists Association (MAA) and the arboriculture program at the University of Massachusetts is nearing completion of its goal—establishment of an endowed Professorship in Commercial Arboriculture. The endeavor, begun on Arbor Day in 1997, seeks to finance the cost of a $1.5 million professorship to ensure the storied program continues to educate the next generation of arborists.

While the MAA has been the driving organizational and financial supporter behind the project, other green industry organizations have started to step forward. The New England Chapter of the ISA was the most recent organization to join the fund-raising effort.

While the chapter wasn’t overflowing in cash, board members decided to assist. "It was a good chunk of change for us," admits ISA Chapter President Jeff Ott, owner of Northeast Shade Tree in Portsmouth, N.H. "Nevertheless, we thought this was a particularly important project. As everyone knows, one of our biggest problems in the industry is the shortage of trained people. Certainly, an education at University of Massachusetts is a good beginning."

That sentiment is echoed by Richard Herfurth, who serves as certification liaison for the New England Chapter. "This is the premier arboriculture school in New England," he says. "Graduates are distinguished by the fact that they have some hands-on experience. They know what day-to-day tree work is. As a result, they can go right to work and keep learning."

"As a graduate of the school, a member of the ISA in New England, and someone who hires people regularly for our company, I feel it is very important that the program continue so we have a source for qualified applicants," added Herfurth, who is safety and training coordinator in New England with The F.A. Bartlett Tree Expert Company.

Another organization that made a financial commitment recently is the Massachusetts Tree Wardens and Foresters Association, which pledged $15,000 over a five-year period.

Board of Directors President Tom Chamberland worried there was a possibility the university might not continue to support the arboriculture program. "We decided to support this endowed chair because we felt it was important for the long-term care of street trees in the state." Chamberland, who is tree warden for the town of Sturbridge, Mass., and a park ranger with the U.S. Army Corps of Engineers, regularly interacts with graduates working for commercial tree care companies in his area.

"I am really impressed with the depth of their knowledge regarding pests and the stresses that affect urban trees," he says.

The largest pledge arrived from Associated Landscape Contractors of Massachusetts (ALCAM), which committed to $100,000 over five years. Executive Director Jennifer Barth relates that this donation was a first for the group.

"Most of the fund-raising we do supports internal programs for members," she says. "This is the first sizeable contribution outside of our organization."

ALCAM made this pledge even though few of the graduates will go to work for its members.

"We view supporting the arboriculture program as an important first step in developing a long-term relationship with the university," Barth explains.

According to Virginia Wood, executive director of MAA, the school had just over $1 million earmarked for this fund as of April 1999. The MAA’s contribution will total $300,000, says William Maley, owner of Cedar Lawn Tree Service in Ashland, Mass. "Of course, that doesn’t include contributions from individual members."

Maley, who is vice president of the MAA, stresses the benefits to the tree care industry are nationwide. "We are working on behalf of arborists all over the country," he says. "By no means will all of the graduates stay in Massachusetts—or even New England for that matter. The entire profession will be helped."

By the time all of the pledges are counted and the checks cashed, this partnership will help to ensure that commercial arboriculture and urban forestry will continue to be taught at the university into the next century.

For more information on how to support the Professorship in Commercial Arboriculture, please contact the MAA at 508-653-3320.
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Stump Grinders: Self-Propelled or Tow Behind? Different Needs for Different Jobs

By Richard C. Howland Jr.

Which stump grinder to buy and use is a very personal choice among arborists. From the owner of a successful, part-time, stump removal service who swears by the smallest of units, even for the biggest job, to the old pros who demand lightweight, heavy-duty diesel performers, opinions vary widely.

Buried in those divergent opinions lies the basic dilemma: versatility. Equipment needs to be tough and easy to maneuver. After that, features to consider start with self-propelled versus towed, and then expand to horsepower and fuel considerations, operating economy, durability, depth and sweep of the cutter and the other trade-offs of performance, efficiency and maintenance.

Self-propelled versus towed

Size and weight are major factors in two areas—when towing to the site and when maneuvering at the site. The trade-offs include light nimble units (1,000 pounds) that are usually narrow (under 36 inches), versus grinders with a higher work capacity resulting in increase heft (5,000-23,000 pounds or more) and girth (7 feet or more).

Heavier tracked vehicles provide mobility but experienced operators remain circumspect about the potential damage to lawns. In experienced hands or when the vehicle is underground, the damage tracked vehicles might inflict on sod or paved surfaces is indeed minimal. NAA members who specialize in...
stump grinding caution operators to take special care (perhaps by laying down plywood) when one track locks up for a turning maneuver and to watch carefully should the unit "rock" when performing the grinding operation.

With smaller units measuring just over four feet whereas larger ones can top seven feet or more, height is also a factor. An additional consideration with height is a low center of gravity for safer operation on uneven terrain.

Getting the equipment to the site precedes the issue of positioning and use of a rig. Large equipment favored by big operators has to be trailered, requiring the cost of the trailer plus tags, insurance, trailer plates and the time to load and unload the grinder.

The trade-off is that the trailer, not the stump cutter itself, absorbs over-the-road pounding.

Manufacturers like J. P. Carlton in Spartanburg, S.C., with its "Torsion Flex" suspension, and others, have consistently tried to upgrade their towed units with improved suspension designs that not only cut down on wear, but also improve towing efficiency and safety.

At the "most portable" end of the stump cutter spectrum are the Hawk from Sunrise Concepts in Sea Isle City, N.J. and the compact 272 S from Husqvarna Forest & Garden Company in Charlotte, N.C. Husky's model can be stored in a mid-sized car trunk and carried or wheeled to a work site. At just over 46 pounds, the 3.8 hp unit drives a replaceable, carbide-tipped blade. A common application for these tykes is for taking out stumps in hard-to-reach or obstacle-rich areas.

Manufacturers like Rayco offer a "mini work force" of three walk-behind stump cutters for commercial applications, including one that is self-propelled. Two have the option of being towed or trailered to the site.

Once the stump grinder is on site, the issue of self-propelled or towed comes into play.

Vermeer Manufacturing Company in Pella, Iowa, has been in the stump cutter business since it introduced its first stump model in 1957. Today, its products range from the high-production SC1102A stumper, with a beltless cutter-wheel drive system, to a compact SC502 built for fast transport and setup.

In March, Vermeer announced what it describes as an industry first in its horsepower range (50 hp), the self-propelled and highly mobile Model SC505. According to Product Manager Chris Nichols, the SC505 represents an exclusive design for the company because it is self-propelled, walk behind and rubber-track mounted.

"It's first of its kind because the 505 can go into confined areas and up and down..."
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In regions where labor is inexpensive or the operator is an independent, downtime may not be a big issue. In larger operations, durability and the safety inherent in larger units pay off.

inclines, providing high production accessibility in areas towed units can't get to," explains Nichols. That maneuverability includes narrow openings. With the chip decks removed, the SC505's tracks can be retracted from their standard 51 inches to a 35-inch profile for passage through gates and other confined areas.

Nichols says the 505 is aimed at a broad market from commercial tree service firms to golf courses to land clearing operators and municipalities. Vermeer stresses that the rubber tracks are "turf friendly," applying less pressure per square inch than a human foot.

Much larger is the Rayco T185 Hydra Stumper, a self-contained tractor with hydrostatic drive powered by a 185 hp John Deere diesel. The 36-inch diameter cutting blade shreds stumps and roots on lots and land clearing sites, but its size and the fact that it must be trailered limits its use in residential areas.

Regardless of their size, two things to look for in the self-propelled category are whether the unit is wheeled or track driven, and, if wheeled, is it two- or four-wheel self-propelled.

Tied to the drive, of course, is a unit's stability. A wide stance and a four-wheel design are major stability and maneuverability concerns, yet the wider stance reduces a cutter's usability in awkward spaces.

Horsepower and fuel considerations

The argument over gasoline versus diesel generally boils down first to the ability of the power source to remain at or near peak torque and speed when under in operation, and second, lifetime operating costs.

Large volume stump removal services typically opt for larger horsepower diesel units to reduce the "load" put on the engine by the cutter, but diesel can be found in units as compact as a 48-hp, 35-inch wide, self-propelled Rayco RG50. Diesel, while a costlier initial expenditure, is generally known for better fuel economy, reliability—especially in severe environments—longer life, and longer maintenance intervals than gasoline-powered engines.

Manufacturers also promote fuel and hydraulic capacities, both of which influence the duration of runtime on site. Operating ease and economy

The cutting arc and the size of the cutter translate into a formula for efficiency. Once the horsepower and fuel issues are resolved, the next consideration is how aggressive one can be. Larger cutting arcs of up to 90 degrees, depths of over 30 inches and reaches up to 54 inches make sense only when the power unit can keep up with the demand.

Telescoping designs up to four feet or more mean more time grinding and less time repositioning the grinder. The same
The PRO 75S skid steer powered stump grinder from Miller Machine Works is designed for professional operators.

The PRO 75S skid steer powered stump grinder from Miller Machine Works is designed for professional operators.

lighter-duty end of the spectrum because they like the ability to do much of the repair and maintenance work themselves, while others like the diesel models due to their brute strength and long maintenance intervals. The problem is there’s a temptation to push the limits of the equipment on large jobs, knowing they can make a field or shop repair on their own reasonably inexpensively.

In regions where labor is inexpensive or the operator is an independent, downtime may not be a big issue. In larger operations, durability and the safety inherent in larger units pay off.

Depth, height and sweep of the cutter
How high, how low and how wide do you want to go?

The combinations in the marketplace today seem endless. The thickness and diameter of a cutter wheel, together with the number of teeth, are as critical as how high, deep below ground and wide an arc one can turn with the unit in place. Manufacturers spend a lot of time promoting cutter design and diameter, both of which affect speed, safety, and wear and tear—not only on the cutter wheel, but on the unit itself.

Rayco promotes its pocket-less “Super...
What to consider when selecting a stump grinder

Shopping checklist

- horsepower
- cutting capacity
- speed
- gas versus diesel
- fuel economy (gallons per hour)
- drive type: belt, gearbox, direct, chain
- debris collection capability
- debris containment volume
- durability
- warranty & service
- maintenance
- ease and availability of repair
- tow versus trailer
- towing suspension package
- track versus tire
- maneuverability
- stability during operation
- position of controls
- weight
- cutting arc
- fuel and hydraulic capacities

Tooth" design for high-performance stump cutters, arguing that the "greater strike point clearance from the mounting block" quickly removes material from the work, thus maximizing horsepower availability and reducing downtime.

Generally, the larger the diameter of the cutting wheel (over 36 inches), the more teeth (up to 48) together with the speed and reach (up to 40 inches) and swing (measured in either degrees or inches of arc) determines the unit's efficiency, typically measured in the ability to remove a 30-inch hardwood stump. Results vary from three minutes for an 11-ton tractor type to nearly a half an hour for smaller units.

Trade-offs of performance, efficiency and maintenance

NAA member Bob McBride, a 20-year veteran and owner of Bob's Tree Service and Stump Removal in Warren, Ohio, runs a pair of cutters. He began with a used Vermeer 1635 gas, which he has since sold. He then opted for a brand-new Rayco 1665 65-horsepower gasoline-powered unit, which he subsequently traded in last spring for another Rayco, this time more of a brute—a 670 diesel.

"From now on," he insists "it's diesel only." The main reason is operating cost. Diesel is less costly to maintain (for example there are no spark plugs to change and R&R adjustments are few), and McBride maintains that diesel is more durable over time.

If it works in the woods and it has a diesel engine, it can be powered by Deere. With models from 20 to 500 hp, there's a John Deere engine for almost every forestry application. Whatever the equipment, whatever the brand, ask for Deere Power by name.

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TREE CARE INDUSTRY - MAY 1999

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The big reason? "I go with diesel because the price of off-road diesel is half the price of (transport) diesel fuel." In large operations, that adds up," McBride asserts. In addition, "The diesel puts more power right to the cutter," he maintains. McBride also operates a 1625 Rayco Super Junior, which he calls generally "too slow," for big jobs but the size allows him to get through small gates and into tight spaces the faster units can't reach.

Finally, McBride asserts the diesel unit affords him the best of both worlds—size and performance. He says that with the large flotation-type tires, he can pull the rig easily with his '94 Ford 4-wheel drive. And it's light enough to tow with a '91 Ranger. "That's quite a sight to see," McBride says. "The stumper is almost as long as the truck."

McBride also was candid about selecting the source of the machine, swearing by his local independent dealer, who "stood behind the Rayco 1665 when it developed trouble after a year. "They just took care of it and bent over backwards."

When it came time to move up, that kind of service meant he didn't look anywhere else. "I had the dealer bring it down and demo it. I bought it on the spot," he adds.

Another view comes from NAA member Tim Marshall, founder and owner of Stumps Gone in metro Detroit. He began his sideline business four years ago when he couldn't find anyone to clear away a stump for him "at a fair price," so he rented a stump grinder and did it himself. Soon, requests from neighbors and word-of-mouth referrals found Marshall in business.

His favorite is a small, very-used Vermeer with which he has taken on all comers, once even grinding a "stump" that was 7 feet high and 6 feet in diameter. The most time-consuming part of that job was hauling away chips, he notes.

"I like to stay small," Marshall relates, "because I prefer to do special, interesting work that no one else wants, like tight spots close to structures, and inside fences or near cement."

Because the Vermeer is small and of an older design, he isn't afraid to take on the troublesome jobs, knowing that he can offset losses caused by extreme wear and damage by effecting his own repairs.

The bottom line to stumper selection is that the combination of features and benefits becomes a very personal thing. Why? It has to do with profitability trade-offs. How much are you willing to pay and how much can you earn, depending on what you spend?

Richard C. Howland Jr. is a freelance writer in Bedford, Mass.
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Roanoke, VA
Contact: (804) 798-0045

May 10, 1999
MCFC Symposium:
The Impact of Forest Corridors in the Community: Proposed and Existing
Annapolis, MD
Contact: Mike Grant (410) 260-8595

May 14, 1999
California Arborists Association
Climbing Skills Workshop
Walnut Creek, CA
Contact: Denise Buffham (707) 254-8862

June 11, 1999
California Arborists Association
Back to Basics Pruning
San Jose, CA
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June 13-15, 1999
ISA Florida Chapter
Westin Innisbrook Resort
Palm Harbor, FL
Contact: (727) 786-2928

June 25, 1999
California Arborists Association
Climbing Skills Workshop
Chico, CA
Contact: Denise Buffham (707) 254-8862

July 1-3, 1999
American Association of Botanical Gardens and Arboreta
Annual Conference
British Columbia
Contact: Dorothy 610-925-2500 ext. 11

July 13-15, 1999
VA. Tech and VA. Turfgrass Council
Turf and Landscape Field Days
Blacksburg, VA
Contact: David McKissack (540) 231-5897

July 23, 1999
Third Annual Conference on Woody Plants
Swarthmore College
Swarthmore, PA
Contact: (610) 388-1000

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

August 1-4, 1999
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75th Annual Conference & Trade Show
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Competitive pressures have made being in business as an arborist or a landscaper more and more of a numbers game. With customers able to shop for price, profits are being squeezed, and there is far less room for error in preparing bids. As a result, mastering job bidding skills is the absolute best strategy for success, because hit-or-miss bidding is financially suicidal.

Tree care companies must know the bottom line on price and not work for less. To know where that line is, you must know your costs. Over the course of a year, you won’t earn much of a living if your price is no higher than your cost.

### What you need to bid a job

In order to figure out what to charge, you must understand:

1. How much time costs your company hourly/weekly/monthly/annually;
2. How much time the job will take;
3. Your hourly profit goal;
4. The importance of financial analysis.

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### 1. How much time costs

How much does time cost your business? Arborists and landscapers incur three kinds of costs:

- direct costs, such as labor, equipment and materials;
- indirect costs that follow direct costs, such as payroll, taxes and insurance;
- overhead costs that support the business operation, such as rent, utilities, advertising and administrative expenses.

If you look on almost any Profit & Loss statement, you will see that the accountants have broken these expenses down. The traditional approach on a financial statement is to split out all these costs to come up with gross profits. Some costs, such as insurance or rent, are incurred even when no activity takes place. Most costs, however, are the result of work being performed, equipment used, and wages paid.

As the owner, you must develop a solid knowledge of the total cost of the project, which will include direct cost, indirect cost and overhead. What you are really selling in this industry is time. Therefore, you have to know what time costs. When you know that answer, you can come up with a price. In addition, every time an employee turns the ignition key of your truck, certain costs start adding up—fuel, depreciation, insurance, repairs, maintenance and materials.

To determine the cost of your crews’ time, you must figure out how much work can be produced over the course of an hour or a day. Is it humanly possible to do the work assigned without bringing your people back at the end of the day so exhausted that they want to quit? Do they understand that working productively directly affects the profitability of the company, and, ultimately, their salaries and benefits? Can you convey that message to them and will they comply? In almost any service business you have to control labor, since direct labor is your biggest expense.

You may estimate it costs $30 or $40 of direct payroll costs and overhead to put an employee with equipment into the field. Don’t guess. You have to know the hourly cost for your equipment and labor to determine what to charge for that hour. You can find out through accounting records. Keep track of each job you do. Time all jobs for historical purposes and this will help direct your bids in the future.

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### 2. How much time the job will take

To bid a job you need a good understanding of what work is required, along with the most efficient methods. A sense for developing time goals for employees is crucial, which includes doing your homework before submitting a bid. If you just
drive by and do a quick and dirty bid, you won't bid with any degree of consistent profit.

Nothing beats experience as the source of your job bidding information. Keep accurate job time standards, which should be based on experience calculated from similar jobs. The best way to predict labor costs by the hour is to develop time/labor figures for every task your crews perform. From those times develop a handbook of standard times that you can use to prepare job bids. Chart how much time a simple removal takes. Chart the same removal with more difficult access. Once you think you know how long a given job will take, factor in expected versus actual time and cost. Test the times developed over different conditions with different crews to arrive at the most accurate estimates.

After the job gets under way, you need a way of controlling labor at the site. Are you scheduling a job to be completed within a certain time frame and then checking to see if it was? Do you have an accounting system that will do that for you? It will then be up to you to manage events to keep your productive employees working efficiently.

You should not send your people out in the morning with a basic worksheet that lists their first, second and third jobs of the day. You will never know if they are working up to your expectations, or if some crews are better at one thing than another, or how accurate your bids were for each job. Your crew may complete all of the tasks assigned that day, but you could have lost money on two and made more than you estimated on the other two.

If you are not out in the field, control the job sites is vital or cost and profit goals won't become a reality. This is probably the hardest area of tree care to handle successfully. You have to get people moving with the correct tools and an explanation of how to do the work. You may know the best production methods, but you must be able to communicate with your workers, who also need to be motivated enough to complete the job on time.

Rather than just handing out worksheets in the morning and telling your crews to do whatever they can before the day is done, you have to convey your cost goals and your initiatives by letting employees know what level of productivity you expect. If they do not know what you expect them to achieve, the average worker will go about his job with no drive.

If a typical crew works at 100 percent, they will probably be back in your shop at 3:00. They will be punishing themselves financially by punching out early. The average worker will pace himself all day—or all week for that matter. During the course of a regular week Monday starts out as a 60 percent to 70 percent day, Tuesday and Wednesday may find people working at 100 percent, whereas on Thursday things start going downhill (for every productive hour, you are probably getting 45 minutes of work), and by Friday people are ready to start slacking off. One company owner I know sends his workers out in the morning and tells them to work hard and come back when it gets dark. Do they work as hard as they can? Who knows?

You can make more money, without

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**Are You Paying Yourself Enough?**

I used to be amazed at how little I was making for the amount of time and energy put into the business. Take this test. Go back to the beginning of 1998, and ask yourself honestly, month by month, how much time you put into your business.

If you worked 70 hours a week in April, add it up. When you have arrived at a number of hours worked for the year, go to your P & L and find your salary—if you are drawing one.

Take that salary number and add your profit, which is not your taxable income. If you need help determining your firm's year-end profit, ask your accountant. Add your salary to your profit and divide by the number of hours you worked to see what your hourly earnings were.

When I first did this calculation years ago, I found out that I was making $27 an hour, which was not very good. I could have done better working those hours for somebody else. How do you earn more if your hourly pay isn't high enough? Understand the finances that underpin your business.
increasing prices, by getting a handle on costs and reducing them. There is not a tree care company in America that can’t save payroll money starting next week, even tomorrow, by investigating and managing the productivity of workers better.

Labor is your biggest problem and expense, which makes employees the most important expense to have under control. Trucks are much easier to factor into your business. You buy a truck and your accountant tells you it will last 10 years; therefore, depreciation is $3,000 to $4,000 per year. Insurance premiums are pretty straightforward too, but if people do not show up in the morning, you will not earn any money that day. Worse, you will have lost money because overhead, property taxes, insurance and rent keep piling up whether they work or not.

You know that the cost of labor within your own company is, say $15 to $20 per hour. Are your employees giving you $15 to $20 per hour of work for an hour? Are you teaching them the most cost-effective production methods? Every company will have fast people, slow people and the rest will fall somewhere in the middle. This world does not have room for people who slack off, work too slowly, take 20 minute cigarette breaks every hour or long lunch hours. Let those people work for the other tree care companies in town.

Imagine what would happen at a General Motors assembly plant if the person who attaches the steering wheels doesn’t feel like working very hard one day. All the cars are going to come out without steering wheels. Standards and pace have been determined in factories, and employees are expected to comply. There are a lot of job variables in the tree care industry that make it more difficult to establish hard-and-fast production standards. Your employees are not making the same car in the same way each day. Nevertheless, the more you develop standards of time and performance you can develop for your business, the more you will know in order to bid a job.

Finally, a feel and knowledge for the specifications within the job bid is also mandatory for accurate bidding. When the client is talking to you about the work that needs to be done, make sure you have a good exchange of ideas that will allow both of you to understand the scope of the project. If you don’t know what the client expects, it will be pretty tough to price it. Some people have unrealistic or uninformed requests with respect to tree care. Some have no idea what they want. You should take steps to develop good communication with your clients, so you will be able to justify the work in your price.

3. Your hourly profit goal

Learning about your cost and the price you need to charge to earn a profit will tell you if a job is worthwhile. Other companies can come in with very low bids, but are you willing to work for $10 per hour? Not if you want to make a profit and have enough money to live on.

You know you have to draw a line somewhere, based upon what you need to live. If you were out of business tomorrow, you wouldn’t look for a job in the fast-food industry because you know you couldn’t live on $6 an hour. Use that point of view in running your company. What does your business work for per hour? What are you producing in terms of profit per hour?

In my opinion, since people in business for themselves are taking risks and enduring the headaches of being in charge of everything, they should be earning at least twice as much as they would earn working for someone else. You need to provide for your own benefits, holidays, vacations and retirement.

If you are in a marketplace where the profit per hour is very low, while at the same time you know you earn the very best that your work is worth.
you have done as much as you possibly can to minimize cost, you have to ask if staying in business is worth it. Do not let the customers force you into ever lower prices. There are other options.

- **Raise prices**

  As costs go up, so should your prices. Truck prices have gone up considerably in recent years, so have wages. Only five or six years ago, workers in the New York area were earning six to seven dollars per hour. Now the earnings in that market are $10 to $12 per hour. Have your prices increased apace?

  In my neighborhood if I want a tree taken down, I will be charged $600, or I will be told to wait until winter. The economy is growing so fast these days that in upper income neighborhoods where homes sell for $300,000 to $700,000, they don’t even care about price anymore. I know companies that have increased prices by about 20 percent recently and they still have not met any resistance.

  At the same time, maintain a realistic attitude when adding profit versus how high a price the job and market will bear. You may be charging clients $500 to take a tree down. In your heart, you would like $750 or $1,000, though you always have to ask if the number is realistic and affordable.

  There are incredible income opportunities for arborists in this country. If you are meeting price resistance in middle-class towns, maybe you are in the wrong market. On the other hand, if you have more work than personnel, you don’t have to sell your services at the same price as last year. Supply and demand rules the American economy, and right now the supply of skilled labor in the tree care industry is scarce. There are only so many arborists around. Every business in this country is looking for help, so there is no reason for anybody to be working for the same price as a year or two years ago. How do you know when to charge more? Assuming you have accurately determined cost and time already, you need to make some judgements on each situation. When I was in the landscaping business, as soon as a potential client told me I was the only person who called back, I knew I would not have to slice a bid to the bone. On the other hand, if you have to chase the customer with follow-up calls for an answer, you know that the profit is going to be lower, and you should probably drop it. There should not be a need to chase low profit jobs unless you are in a highly competitive area.

- **Focus on competitors**

  If there are too many arborists scrapping over a limited number of jobs, consider merging. Try to cut down the competition in your area, so the customer cannot be able to get 15 bids. If every tree care company in your area is truly capable of providing immediate service, nobody is busy enough to ask the customer to wait.

  Keep tabs on your competition through your customers, who will let you know what the other tree care companies are doing. They will let you know that you were the only person who came out. That fact won’t tell you the client will spend a lot of money on a job, though it will indicate you might be by yourself on the bid.

  Don’t go overboard and get greedy, however. Gouging one-time clients isn’t the way to build a long-term customer list. Also, if your bid comes in excessively high, the customer will wait and get another bid. Nobody is interested in paying $2,000 for $1,000 worth of tree work.

- **Lower costs**

  What can you do to hold prices firm yet make more money? Is there a more productive machine available? Is there a pool of cheaper labor that you could
train easily for less skilled positions? Is the labor you have right now effective and productive? You have to ask yourself these questions. If your business is selling 20,000 production hours a year, saving one dollar an hour in costs will have a real impact on your profits.

You can find one dollar an hour in cost in your Profit & Loss statement if you look hard enough. The first thing I look at is insurance when I am hired as a consultant to evaluate businesses. Are you being charged for equipment that was put on an insurance policy three years ago and is now worthless because it has been depreciated? I see this all the time. Have you checked your policy recently?

Because of all the equipment in the tree care industry, insurance is a key expense to examine. When I was in the landscaping business, I was insured for book value, not replacement cost. For five years as new equipment became worth less and less, the insurance agent had never adjusted any of our figures. Was it the agent’s fault? No.

He didn’t have time to follow my depreciation schedule—nor will he have the time to examine yours.

4. The importance of financial analysis

Once you know time and equipment needs and you have arrived at an hourly profit goal, you must be able to understand key figures from your financial statement, such as hourly costs, overhead costs and average, company-wide productivity. Figuring all of this out isn’t easy. I came from an accounting background and I admit it can get very confusing. Nevertheless, you have to develop your financial knowledge. Spend $2,000 to have an outside CPA firm produce Profit & Loss statements, and ask for an opinion from the accountant. One of the best things you can do to give yourself a raise long term is to enroll in a basic accounting course.

Financial knowledge is most important of all. What you make at the end of the year—your lifestyle, savings, and ability to compete—is a numbers game. All of the physical activity involved in tree care is ultimately reduced to numbers.

I know companies whose bottom line is only half of what it should be. They are well-run businesses, except for a knowledge of pricing, cost and productivity. I am appalled at the profits I see in this industry.

In consulting, I have examined two companies doing just about the same business volume; one earned $100,000 a year and the other $50,000. They both had the same business volume, yet one owner priced too low, never passed on price increases to customers, never really considered the cost of running one piece of equipment versus another, and had too much equipment sitting idle back at the shop. If your company has too many employees or too many trucks, or too many expenses—and is not keeping track—your business won’t earn any money and you won’t know why.

In a small business, knowledge is the most powerful tool you can possess—not your chipper, chain saw or bucket truck. A small-business owner is the bookkeeper, psychiatrist, welfare department, salesman, mechanic ... and everything in between.

You have to be thinking on your feet all the time. Never stop educating yourself, so that you know your profit and loss, your prices, your competition, and every other facet of running your business.

Phil Nilsson is a consultant, speaker, and author. This article was excerpted and adapted from a presentation at TCI EXPO ‘98. For more information contact Nilsson Associates at (860) 621-6199.
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Where do you find employees in the tree care industry who are experienced and operate safely? For Tamarack, a utility contractor, the steady stream of eager, trained, experienced employees has become a trickle. What are the employees that we all will need in the new millennium doing? They’re taking job offers from other industries. Even some of those who do accept offers (and say they have experience) are aghast when you point out safety violations in their performance.

To help solve both dilemmas, we created an orientation program that is successful in preparing new employees for the demands of the art and occupation known as arboriculture. We call these training programs camps, and we utilize training and orientation in two areas—bucket camp and climbing camp. These camps have been highly successful in the past for our in-house training, so we decided to use this type of intensive training format for new employees.

The bucket/climbing camp for new trainees usually lasts one to two weeks. During training we actually trim privately owned power lines that can be shut off for safety. The orientation covers everything from backing chippers, sharpening saws, operating buckets, climbing skills and aerial rescue, both in a bucket and by climbing. By understanding the needs of crews who practice utility arboriculture, we can effectively train our people for superior field performance. With this type of training, a better comprehension and job readiness accompanies each new employee to the work site.

The bucket/climbing camp for new trainees usually lasts one to two weeks. During training we actually trim privately owned power lines that can be shut off for safety. The orientation covers everything from backing chippers, sharpening saws, operating buckets, climbing skills and aerial rescue, both in a bucket and by climbing. By understanding the needs of crews who practice utility arboriculture, we can effectively train our people for superior field performance. With this type of training, a better comprehension and job readiness accompanies each new employee to the work site.

We have had great success in training people in the skills required for utility arboriculture. Whether the recruits are training for climbing or bucket operation, they receive training in both and work with each. We decided on this approach in response to real situations when we pulled crew members for storm work or encountered an off-road (climbing) section with no climbers on the road (bucket) crew.

Our camp training may seem risky, considering that new employees may leave after extensive instruction. Our hope is that the employee will stay because of interest and ownership of newly acquired skills, which in turn allow them to move into a leadership position eventually. If they leave us for another company, at least we know they’ll be safe at performing daily operations. It may seem expensive, but compare the expense to the cost of a new employee in the system who requires constant guidance and supervision and slows a crew down. Inefficient work methods are nothing compared to the cost of an accident that results on a job with an inexperienced crew.

Think back to your initial training: did the company train you or did a tough-as-nails old timer take you under his wing? If you ask a new employee to take a wrap with a rope, are you looking down only to discover the wrap is the rope wrapped around a hand or wrist? This kind of misunderstanding causes injuries and costly accidents. Training is the key for safety in the tree care industry, and a great way to introduce a whole new generation of people to the joys of tree work by instructing them how to perform safely and efficiently.

Jim McGee is safety & education coordinator for Tamarack Forestry Service, Inc.
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Please circle 5 on Reader Service Card
Managing Your Insurance Coverage

By Phillip M. Perry

If a fire destroys your business tonight, will you be left holding nothing but a bag of ashes? Like most business owners, you expect rapid compensation after fire, flood, wind damage or burglary. Unfortunately, your insurance company may have other ideas. After receiving your claim, your carrier may:

- weasel out of paying by citing contract loopholes;
- deny coverage for many items until you prove ownership and loss;
- drag the procedure out for months before cutting you a check.

Whatever the tactic, the result is the same: costly delays that not only keep you from quickly re-launching your business but can even trigger bankruptcy.

Here's some good news. You can take action now to smooth the transition should disaster strike. Indeed, you have a plethora of resources at your disposal. To get a handle on the best ones, we interviewed a veteran insurance advisor who works with businesses around the country. Daniel C. Free is president and general counsel of Insurance Audit & Inspection Company, a 97-year old Indianapolis-based consulting firm. He is also president of the Society of Risk Management Consultants.

The root of the problem, according to Free, is that business owners fail to perform due diligence in assessing the financial stability of their carriers. "If you have a policy with a weak carrier, your claim may not be settled in a timely manner," he says. A financially weak carrier will nit-pick your claim and look for any reason to avoid coughing up money. On the casualty side, you face a different risk. A lawsuit for physical injury can be filed many months or years after an incident. If your carrier has gone out of business, you may be out of luck, because your new carrier will not cover lawsuits for incidents that occurred before you took out the new policy.

So the risk in choosing the wrong insurance company is high. Most business owners just pick a carrier with a name that "sounds solid," pay their premiums, and hope for the best. You can do better than that. Here's how.

Show me the ratings

Six major ratings services offer assessments of the financial health of insurance carriers. The oldest service is A.M. Best, which rates insurance carriers exclusively. Some of the others also rate corporate bonds.

Ratings can change. Make sure your agent...
checks your own carrier's ratings throughout the year, and informs you promptly of changes. “Avoidance of surprise is the big thing,” says Free. “Your agent should inform you promptly if a carrier’s ratings fall below your standard.”

Ask your state’s insurance department for reports. This is an important source that’s easily overlooked. All insurance companies certified to provide insurance in a state have to file annual financials with the state insurance department. Just as important, many states will provide reports on how many complaints have been filed against the carrier. Often, states calculate “complaint ratios.” These figures are calculated by dividing the number of complaints by the number of policies outstanding. The higher the ratio, the greater the problem.

Also ask for a record of any disciplinary actions that have been taken against your prospective agent, broker or insurance company.

Finally, ask your state insurance department if your carrier is licensed to do business in your state. If not, you will not have access to the funds in the state guarantee fund if the insurance company goes bust.

Keep in mind that some states maintain more comprehensive records than others. To find the contact information for the insurance department in your state, visit the following web page hosted by Insurance News Network: http://www.insure.com/states. When you select your state in the menu, the resulting page will have information including address and phone number. By the way, this site is an excellent place to get answers to insurance questions in general.

Does your agent know your business?

That takes care of insurance carriers. Now, how about agents? After all, your business relies on them for decisions on what risks to cover. To find out if an agent is knowledgeable, ask for the names of current customers and then call them.

“References are more important for brokers than for insurance carriers,” says Free. That’s because you generally only contact an insurance company when you have a claim, and your satisfaction level at that time may differ substantially from that of other clients, for a variety of reasons. But you work with an agent regularly throughout the year, so you want some feedback from other clients about the agent’s responsiveness, reliability, and expertise.

Find out how other businesses like the agent. Does the agent take an interest in the business and resolve claims promptly? When interviewing other clients ask:

♦ How responsive was the agent following a loss?
♦ Did the agent pitch in to help you negotiate with the adjustor or were you left on your own?
♦ How long before your renewal time did you get new quotes? Did the agent give you a last-minute unpleasant surprise?

Know-how is particularly important. Pick an agent who has other clients in your industry. This indicates the agent knows your risks, can suggest coverages to manage those risks, and knows which carriers specialize in your industry.

The agent should be willing to come to your business location and review everything to make sure you get covered properly. The agent who shrugs off a site visit may be indicating you are too small to be bothered with.

Avoid selecting an agent because of a famous company name. “You may get a lot more attention out of someone who is...
smaller," says Free. Avoid being a small fish in a large pond. Likewise, you don’t necessarily need a national firm unless your locations are scattered across the country. If you operate regionally or locally, look for an agent who is familiar with the carriers in your area.

Whether the agent is large or small, you want to make sure that you hook up with a knowledgeable and conscientious staff person. "Is the person a senior individual with experience, or a new person who has just come in with the agency?" poses Free.

Perhaps most important is the agent’s enthusiasm. "The crowning thing is the quality of service you get on a day-to-day basis," says Free. Your agent needs to understand what you do and what you want. Be proactive when managing your agent. Free suggests coming up with a wish list, sorting the items by importance, then giving the result to the agent as a written contract. Unless you are explicit, the agent has to guess what you want. Consider including items such as: coverage only with carriers with top ratings; response to all requests within three days; proposals 60 days prior to renewal date; monthly meetings to discuss risk management issues; reviews of open claims on a periodic basis; site visits to various facilities for loss control; and reduction of premiums.

You will want to obtain some assurances of financial stability on the part of your agent too. "There have been many cases where agents have had

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**When Disaster Strikes**

So what should you do if a fire strikes your building? The Insurance Information Institute suggests the following:

- Call your insurance company’s toll-free number. Follow the reporting requirements spelled out in your insurance policy.
- Make temporary repairs. Do only what you need to do, prior to the claims adjustor’s visit.
- Write a complete report and take photos of everything. You will need this information later when dealing with the insurance company.

For more information, contact the Insurance Information Institute, Publications Service Center, 110 William Street, New York, NY 10038. Telephone: 800/942-4242. You can also find most of the information on the World Wide Web at the institute’s http://www.iii.org address.

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*In the event Dr. Mattheck cannot attend, the seminar will be rescheduled
solvency problems and pocketed the premiums paid by insureds," says Free. "All of a sudden the policyholder finds out the insurance company never got paid."

While these suggestions will help you select a good agent, be on the alert for the number one bugbear of the insurance field: your relationship with an agent can change overnight when the firm participates in the great merger wave now breaking over the insurance industry at all levels. When agents merge, the policyholders often lose. Merged firms tend to lay off technical people who were valued contacts with clients. And larger agencies often start to ignore smaller clients who no longer fit into a revised strategic plan.

"Sometimes the new boss wants more sales," says Free. "The pressure is on to sell more business and not necessarily to service what the firm already has. The policyholder gets squeezed." The result: you no longer have access to that agent contact who really understood your risks.

Requests for account service start taking two weeks instead of three or four days. Responsiveness to claims slows to a crawl.

Given the dangerous minefields along the path to risk management, it’s clear that the prudent business owner must do more than pick an insurance company with a household name. This article has highlighted some of the most important factors to check. Take them to heart and when disaster strikes, you will hold the golden key to profits instead of a bag of ashes.

Phillip M. Perry is a freelance writer in New York, N.Y., who specializes in business topics.

Consult an Expert

If your insurance requirements are large enough, you can hire the services of a consultant who specializes in the field of insurance. But beware: some consultants also sell insurance, and may have a conflict of interest. For a list of independent risk management consultants who do not sell insurance, contact the Society of Risk Management Consultants, 300 Park Ave., New York, NY 10022. 212/572-6246. You can also search for a consultant at the association’s website. Tune to http://www.srmcsociety.org/.
New Programs & Services
Jump Start 1999 for NAA Members

It's only May, but already an impressive list of new or expanded programs and services from the National Arborist Association have been offered to members in 1999. Below is a summary of materials available:

♦ The new ANSI A300 Part II Fertilization Standard is finally here. Tim Johnson, chairman of ANSI A300 Committee, describes this new standard as "another silver bullet in an arborist's arsenal for promoting professionalism and producing high quality tree health management services."

NAA members will receive a free copy upon request until July 1, 1999.

♦ The biggest challenge facing the typical tree care company isn't finding work, but finding people to do the work. Today's tight labor market presents tough challenges to small-business owners who desperately need employees with any level of experience. There are two components to growing your work force—recruitment and retention.

To assist in recruitment, the NAA developed an "Employment Application and Personnel Record Form" for members' use. The application form will soon be available on disk and in Spanish. This employment application form and the other components of the NAA Management Guide are developed by the NAA Business Development Committee with the goal of easing the burden on members of creating business forms, which has proven especially helpful for smaller companies. All Management Guides are available free to members.

♦ One of the keys to employee retention is establishing consistent company policy as part of the foundation of a stable work environment. To raise retention levels, the NAA provides a Management Guide entitled, "How to Write an Employee Handbook." That Guide is now available on disk, free of charge, so members can easily insert their company names or make changes.

♦ The most recent Management Guide, "Developing a Sales Price Per Hour," taps the expertise of some of the most knowledgeable arborists in the industry to assist members in accurately pricing bids. This free Guide will be mailed to members soon.

♦ In response to a growing demand for training materials for an expanding Hispanic work force, the NAA's popular Tailgate Safety Program is now available in a Spanish version for the same low member price as the English version.

♦ The public is reaching out for information on tree care in ever-greater numbers, and the NAA is responding by directing these consumers to NAA member companies. For example, an expanded NAA Web site receives more than 40,000 hits per month, compared to an average of 8,000 just a year ago.

Due to the number of phone calls the office receives from consumers looking for arborists in their area, the NAA is offering two services which will give wider...
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For more information on any of these new programs and services—or for membership information—contact the NAA at 800-733-2622; e-mail: naa@NATLARB.com; Web site: www.NATLARB.com.
Employer Pays Provisions Could Prove Costly

A n OSHA proposal clarifying employer responsibility for payment of personal protective equipment (PPE) costs was published in the March 31, 1999 Federal Register.

The proposal is one of OSHA’s top regulatory priorities for 1999. The proposal affirms the agency’s past practices, which hold that employers must pay for PPE, except for safety toe shoes and prescription eye wear.

The proposal contains certain narrow exemptions from the proposed requirement of employer-payment for all PPE. The exceptions are for specific items which also are used for personal use off-the-job, and even then, only if further specific conditions exist. The PPE items which the proposal would exempt from the proposed general rule of employer-paid PPE are: safety-toe (steel toe) shoes/boots; logger’s boots required by the §1910.266 logging standard; and prescription safety glasses (where required by OSHA regulations or general duty clause).

These exemptions are proposed conditionally. Under the proposal, any of the above three exemptions would apply only if each of the following conditions also are fulfilled:

1 - employer allows the safety toe footwear/prescription safety glasses to be used in non-work time off-site; and,

2 - the footwear/prescription safety glasses are not used at work in such ways as to make them unsafe for use away from work; and,

3 - the footwear/prescription safety glasses are not designed specifically for the special demands of the employer’s job site work.

The proposed standard invites public comment on adoption, with a deadline of June 1 for filing written notice of intent to testify/examine OSHA at public hearing.

As a general rule in the tree care industry, any PPE required for employees (hard hats, safety glasses, work gloves, legging protection where used, face masks where applicable, etc.), already is being paid for by the employer. Thus, to the extent that employers pay for currently required PPE, the proposed employer-payment obligation is neutral in its impact—with the exception of the proposed standard’s issue of footwear.

Since the proposed standard requires employers to pay for PPE, including work shoes unless they are safety-toe shoes, the impact of the standard (if enacted) will be to force an industry practice of required safety-toe shoe use in order to come under the proposed exemption from employer payment of that footwear. The more typical employer’s practice of requiring merely work boots—which do not qualify for the exemption as proposed—would penalize the employer, since work boots are reasonably contemplated by the 1910 PPE footwear requirement and therefore by the proposed requirement that all PPE be paid for by the employer.

At a minimum, the utility line clearance industry should inform OSHA by written submission that the safety-toe shoe exemption not be limited to steel toe shoes, but should apply to dielectric safety-toe shoes which might be required in arborist operations. For instance, North Carolina OSHA (State plan) currently is contending that line clearance tree trimmers are required by general foot protection PPE standard to use dielectric safety-toe footwear. That interpretation of the general foot protection PPE standard currently is being contested.

Future impact—the “blank check”

Perhaps the most insidious aspect of the subject proposal is that it imposes an absolute employer-payment obligation on a constantly moving target of increasing PPE protection evolving from vague PPE standards. The proposal effectively would fix the employer obligation to pay for all non-exempted PPE. For instance, the general PPE, hand PPE and foot PPE sections have no specific content.

History proves that the trend is to require new and more, not less. PPE under the evolving process of prosecution, adjudication, promulgation and suppliers’ pressing regulators to force a market for a product. Along the same lines, new regulations seek to achieve greater protection by use of new products, such as ballistic leggings, dielectric footwear, non-flammable clothing, and items presently unknown which will be created. The standard will, as a practical matter, set an “absolute” premise of employer obligation to foot the bill for items not yet invented—hence effectively creating an obligation to sign a blank check to pay for items “contemplated” by vague and undefined PPE regulations.

Impact of turnover

The tree care industry is challenged by extraordinary turnover. If tree care employees had to provide work boots (non-exempt under the proposal) for all hires—many of whom leave soon after being hired—the obligation imposed by the proposed standard could be exponential. And work boots may be just the beginning.

OSHA already has recognized this very problem in creating grace periods for training under 1910.269’s CPR-training requirements. The tree care industry should evaluate seeking similar relief in the subject proposed standard, through either public comment and/or testimony/hearing participation.

For further information, or to express your opinion on this and other regulatory issues, please call the National Arborist Association at 1-800-733-2622, or e-mail the NAA at naa@natlaro.com.

Peter Gerstenberger is director of safety & education for the National Arborist Association.
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continued on page 64 ...
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Twenty years ago, on March 13, 1979, 113 employees of the Davey Tree Expert Company made a commitment to buy the firm from the Davey family. But the decision wasn’t an easy one.

“The original 113 had little capital of their own to offer,” recalls Doug Cowan, current chairman and CEO. “Key Bank (at the time Society National Bank of Cleveland) put up most of the capital, along with U.S. Trust in New York. What swung the deal was an Employee Stock Ownership Plan (ESOP) that convinced the Davey family the employees could afford to buy the company.”

Cowan first arrived at Davey in 1974 as a corporate controller. He earned his stripes five years later spearheading the sale to employees. Back in 1979, the Davey family was having difficulty deciding on the future of the company. Into its third generation, there were no more heirs who were working for the company.

“There were three branches of the family who owned approximately one-third each,” explains Cowan. “Nobody else was coming along in the next generation. Top management brought us into a meeting in early 1977 and made two announcements: They appointed Jack Joy president and informed us they were going to sell the company. We have kidded Jack all these years that their second decision was obviously based on their first.”

Once the Daveys decided to sell, employees found they weren’t the only bidders. Cowan says it took 18 months to finalize the deal. “The reason it took so long was that there was one faction of the family that kept trying to shop the company for higher offers. The other two branches maintained that as long as employees were offering a fair price, they weren’t looking for top dollar. There were at least three investment groups, a Fortune 500 company and an outside
director interested. We were one of the first in the country to use a leveraged ESOP as a buyout tool.”

Back then, the company had a market value of about $8 million. Assets have grown to nearly $150 million, and earnings have grown ten-fold.

Today, more than 2,800 of Davey’s 6,000 employees are owners. “We put together a stock purchase plan in 1985 that really opened ownership to a lot more people,” relates Cowan. “Employees could start buying stock directly with payroll deductions. The biggest benefit for employees is that the stock is evaluated twice a year by an outside firm. Most recently, it came in at $32 a share. If you take into account all the splits we have had over the years, we essentially bought the stock in 1979 for $.94, so it has gone up some 34 fold.”

For example, if an employee invested $30,000 in Davey back in 1979, today that stock is worth $1 million.

After a year, all Davey employees are eligible for the stock purchase plan, where they receive a 15 percent discount below market prices. But an employee can buy stock out of the treasury at full market value on the first day on the job.

Surprisingly, employee ownership isn’t a strong recruiting tool, especially with younger employees. “We think it’s a bigger deal than they do,” says Cowan. “They aren’t too learned about stocks, though that is changing rapidly. Eventually, they come to appreciate the opportunity. It’s a better retention tool than recruitment lure. If we can keep employees past the first three to five years, we usually have them for life.”

While celebrating 20 years of employee ownership, Cowan is also looking to the future. He notes that most employee-owned companies tend to have a life span of ten years, for a variety of reasons.

“We may have to consider various exit strategies,” he says. “The past year has brought the dramatic changes, with industry consolidation underway with LandCare USA and ServiceMaster. There’s so much money out there that is looking for a place to go. Frankly, I think we have only begun to see roll-ups by finance people.”

Despite the wave of mergers sweeping the industry, Cowan doesn’t foresee any immediate changes in Davey’s practices. “We think that employee ownership is a great way for the company to operate. It binds a nationwide company together. A lot of companies talk about employee ownership and they may make a small amount of stock available. But too many CEOs are afraid of employee ownership because they think the employees will try to tell them how to run the company. Nothing could be further from the truth. We function just like a publicly traded company. Employee rights are no different from any other stockholder rights. We know that if we work hard as a team, we will all benefit.”

Mark Garvin is editor of TCI.

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A Higher Profile Can Lead to Increased Sales

By Karen Raugust

Company executives who become known as experts in their field not only burnish their own reputations; their higher profile can boost sales and profits by association. Many people possess vast amounts of knowledge and wisdom about their industries, but relatively few earn reputations as experts.

The first key to becoming perceived as an expert is to raise your visibility among your colleagues and the general public. The second is to become a source for useful, credible information, rather than for overtly self-promotional public relations. While the first factor is understood by most business owners, the latter can be difficult for some. They tend to feel that their public profile must be accompanied by direct publicity about their firm. In fact, the association of your name with opinions and data about your industry as a whole lend credibility to you and your business. Self-promotion has the opposite effect.

Be quoted

Getting quoted in trade or consumer publications puts your name in front of readers’ eyes and makes them remember you. The article does not have to be a profile of you or your business; a simple statement that sheds light on a topic of interest within a larger context raises your profile and that of your company.

I received the call in the early evening. I smelled like pine from working in evergreens earlier in the day. A hot shower was waiting down the hall. A lawyer from Troy was on the telephone. He described a court case that he was involved in. An arborist had been working on a tree near a house and had made a judgment error. The top of the tree had fallen through the roof of the home next to the tree and injured a carpenter working inside. The lawyer wanted to know if I would be an expert witness for his client.

I was a little taken aback at this request. I had never thought about being in court as an arborist. I was there before for a divorce once, and I did not enjoy that experience at all.

He gave me some further details, and I agreed to see him in his office later in the week. I figured that it wouldn’t hurt to at least examine this possibility. Some arborists, particularly consulting arborists, are regularly called upon to offer their expert services. While I consider myself an expert in tree care (I started working

Speak publicly

Appearing on panels or as a highlighted speaker at industry events is an effective method of increasing your company’s profile. It is best to focus on industry trends, how-to information, business forecasts or other topics of interest and, as always, to avoid self-promotion. If you address the subject at hand in an organized, interesting fashion, you and your company will gain recognition by association.

Some speaking engagements, particularly those for general business audiences, can generate speaker fees. The primary reason for saying yes to public appearance opportunities, however, is to keep your company in the minds of your colleagues.

Once you have gained a reputation as an expert, you will probably be invited to speak at industry events. If you are less well-known, you can contact the organizations that sponsor forums. Send a letter stating your desire to be a speaker and outlining some potential topics, along with a biography. This process may not lead to engagements right away, but will help build a foundation for future appearances.

Write an article

Authoring an article in a magazine or newspaper is another effective way to gain the aura of expertise. These efforts most frequently appear as opinion pieces or guest columns, but some write how-to or other styles of articles—or even regular columns—in business publications or local newspapers. Writing such a piece creates the perception among readers that you know what you are talking about, as long as the work is well-researched, accurate and to the point.

To submit an article, send a one-page letter to the editor of the magazine or newspaper. Succinctly propose your idea and outline how you will support your points, who you will interview, and why you are the right person to write the piece. (Send along a copy of your resume as well.) Be familiar with the publication to which you are submitting and slant the article toward its needs. Once the piece is accepted, most magazines will supply writers’ guidelines and editorial assistance to contributors.

Karen Raugust is a Minneapolis-based independent business writer. Her company, Raugust Communications, provides editorial and marketing consulting services. Courtesy of Article Resource Association.
in trees in the early '70s and worked on the grounds of an estate before that), I had never considered putting knowledge to use in a court. Why couldn't I be an expert in court, I thought? It couldn't require any different knowledge than I used on the job. Or, could it?

At the law office the attorney read from a deposition on his desk. The whole thing did not sound so difficult. The fellow who owned the tree service had retired from a factory job a couple years earlier and decided he'd spend his early retirement years as a tree surgeon. He hired some men who claimed to be experienced tree men and bought himself a bucket truck. Presto, he was a tree surgeon.

On the day of this accident, his employees were working over a small house. One had cut a section of the top out that was a little over ten feet long and about the same number of inches in diameter. He had not tied the piece off. Instead, he planned to push it over, thinking it should clear the roof. There were no ropes in use at all.

The owner related that the worker in the bucket waited for the wind to die down before he pushed the top out from the rest of the tree. However, the worker misjudged the wind. A gust carried it backwards and it came down into the house. He had testified in the pretrial hearing that the work was being performed in a blizzard and it was very difficult to judge the wind in such conditions.

The lawyer continued, but I was already shaking my head at the situation. The risk of dropping (or pushing) the top out of a tree near a house without use of lowering lines was obvious. That neither the owner nor the crew considered coming back on a day with better weather was unthinkable.

I agreed to be the expert witness for the carpenter.

I was a little nervous going into court. Opposing counsel started by asking the judge to disqualify me as an expert. but my experience, education and certification spoke for themselves. Nevertheless, this somewhat confrontational start made me a bit wary. All I was expected to do was tell the judge the safe and proper method of topping a tree before removal. I had purchased a manual that had some very good graphics, thinking that this might be some help in describing the process. As it turned out, this was unnecessary. I described the methods used by arborists to remove a tree. I further stated that even with these techniques, I wouldn't have taken out this tree in such hazardous conditions. Instead, I would have waited for better weather.

Though I was confident of the accuracy of my testimony, I still felt sorry for the people on the other side. Until I saw the people involved, I had not considered the emotions that this would stir up. These people worked about 40 miles from my usual area, however, there was some likelihood we would cross paths. Would there be some enmity when we met again? I didn't like that thought.

I was informed later that we had won the case. The carpenter was awarded some funds to cover expenses and time lost from work. It wasn't as much as he'd asked for, but he was able to go back to work after several months and the money helped to offset the economic loss he had suffered.

That was two years ago; I have not been asked to be an expert witness in a court case since then. I did receive a referral to look at a tree locally which had been "pruned" by a local painting con-
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Richard King is a Massachusetts Certified Arborist who has been practicing arboriculture since 1965.

For those of you who are not special-

ists, but who might be intrigued by the possibility of appearing in court some-
day, Buchanan offers several tips that could prove critical:

♦ Be sure to observe the trees and sur-
rounding area yourself. Going into court
without a direct inspection may cause
your testimony to be labeled as hearsay
and be disregarded entirely.

♦ If an expert witness has been hired by
the other side, which becomes more likely
the higher the stakes, do your job thor-
oughly. If you are sloppy and miss
something, it will surely come back to
haunt you. Ask your client hard questions
so you know everything you need to know.

♦ Always evaluate the situation from
a professional and objective point of
view. If your opinion will not help the
case, let the client know immediately.
There will likely be an expert on the
other side, and you must maintain your
professional integrity.

The court will need proof that you are
an expert. The two major factors in es-
ablishing your credentials are education
and experience. If you are in short sup-
ply of either, you may wish to avoid this
job. It wouldn’t hurt to get more school-
ing or a few more years under your belt
before accepting an assignment that has
the potential of being grueling emotionally. Other factors that might add to your
credibility are certifications, awards and
memberships centering on arboriculture
or related fields.

In conclusion, being an expert witness
may prove to be an interesting assignment
but it is unlikely that you will want to use
it as your sole means of livelihood.

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<td>19. J.P. Carlton Company, Div. DAF, Inc.</td>
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<td>20. CEI</td>
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<td>22. The Davey Tree Expert Company</td>
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<td>63. Sherrill, Inc.</td>
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<td>23. Deere Power System Group</td>
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<td>64. Shindaiwa, Inc.</td>
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<td>24. Dow AgroSciences</td>
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<td>70. Tanaka - International Sales/Mktng</td>
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<td>71. TCI EXPO '99</td>
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<td>32. Good Tree Care Company</td>
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<td>73. Timberwolf Manufacturing Corporation</td>
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<td>33. Green Manufacturing Inc.</td>
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<td>74. Tree Tech Microinjection Systems</td>
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<td>35. Husqvarna Forest &amp; Garden Co.</td>
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<td>37. IML - Instrument Mechanic Labor, Inc.</td>
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<td>78. West Coast Shoe Company/WESCO</td>
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<td>38. Implemax Equipment Co., Inc.</td>
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<td>79. Western Tree Equipment &amp; Repairs</td>
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<td>39. ISA 75th Anniversary Conference</td>
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<td>80. Westheffer Company, Inc.</td>
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<td>40. Jameson Corporation</td>
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<td>81. Yale Cordage, Inc.</td>
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<td>41. Leonardi Teeth</td>
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* Please circle this number on the Reader Service Card for more information.
I can remember this particular day in the late ’70s as though it were yesterday. I was 35 then and foreman of a tree crew that worked out of Northampton, Mass. Our job on this day was pruning trees on the campus of American International College in Springfield, Mass. It had been a hot week with temperatures reaching the high 90s. Our crew had just finished a morning’s work and were settled down in the shade eating our dinner when a familiar campus grounds keeper stopped by.

“Say, could one of you guys climb that flagpole for me and put this rope through the pulley on top?” he asked. “Someone pulled it out the other day and we can’t put our flag up.”

I looked at the flagpole and thought, what a challenge—climbing a flagpole right in the middle of the campus quadrangle. “Sure,” I replied. “I’ll do it.”

Without even finishing my lunch, I got my gear ready to make the climb. The rest of the crew watched as I made stirrup hitches for both feet and fastened into the pole with my safety belt. I looked all the way up to the top of this steel flagpole and said to myself, “Well here goes, my first flagpole.”

It must have taken only 10 minutes of manipulating and sliding the stirrup hitches up inch by inch to reach the top, but it seemed like an eternity. Each section of pole was 10 feet in length and then went to a smaller diameter with each section held by what appeared to be rivets. As I got past the halfway point, the pole started swaying a little. At the three-quarter point, it started to wobble in the middle as if the rivets were not tight. I started to ask myself why I had volunteered to do this crazy thing.

I finally reached the top and looked down. I was 75 feet up and tied into a two-inch piece of steel that was wobbling like heck! The temperature had reached a record high for that day of 106 degrees. In my haste, I had left my hard hat on the ground and the sun was burning my scalp through my fresh crew cut. I quickly strung the rope through the pulley and was ready to come down when the groundskeeper had a request.

“Can you do me one more favor?” he shouted. “Oil the pulley with this can of oil that I’m sending up.”

I agreed and finally descended to the ground, which I was very glad to be on again.

Ironically, the rope was pulled out of the flagpole again two weeks later and my boss asked if I would put up another rope for the college. “I guess not!” I answered. “I only did that as a challenge.”

I found out later that a steeplejack was hired to do the same climb I had done—only he charged the college $100 for his services.

Ramon R. Sears is owner of Sears Tree & Landscape Service in Ashfield, Mass. TCI
Overall Body Dimensions:
Length 138" Height 60" Width 92"

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

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

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

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

Optional:
1. Top ladder pruner rack

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

Southco Industries, Inc.
1840 E. Dixon Blvd. • Shelby, NC 28152
e-mail: southco@shelby.net
(800) 331-7655 or Phone: (704) 482-1477
Fax: (704) 482-2015 or (800) 458-8296

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