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Taking a High Flyer
Down a Peg or Two

A few days ago, I was on a plane returning on a high from one of the best arboriculture meetings I have ever attended. I had the pleasure of being a speaker at the 15th anniversary celebration of the birth of modern arboriculture in Italy. Along with our industry guru, Dr. Alex Shigo, I had the opportunity to be with such industry leaders as Daniele Zanzi, conference organizer; Pius Floris, and Glen Read. We spent the week with Clive Sorrell, Ken Palmer, Tobe Sherrill, Jim Clark, Klaus Vollbrecht, Niels Hvass, Luis Moreno, Erik Brudi, and Kevin Smith among others. Fourteen countries were represented. I had the chance to see some of the best presentations and enjoyed absorbing the enthusiasm that was pouring from this meeting. You'll see more on this in a later issue.

Back to my plane ride … As I left on this high, totally psyched about how I get to spend my time with such great people – how lucky I am to work with members who want to see trees cared for properly and safely – the guy sitting next to me decides that he may as well have a chat to pass the eight hour ride home. We do the normal, “So what do you do for a living?” I'm rattling happily away telling him about these great people that I get to work with; telling him what a fantastic service arborists provide to our communities; relating how important trees are in all of our lives; and recounting what a great conference I've just had the privilege of being part of.

And do you KNOW what he had the AUDACITY to say to me? “It sounds pretty good to say that you’re president of a trade association until you get to the part about working with tree trimmers. That really lowers your professional dignity in what you do.”

First of all, let me assure you that my dignity in being employed to work on your behalf is not only in good shape, but I am very proud of having the opportunity to work with you for the betterment of the tree care industry. I happen to genuinely like the people who work in the tree care industry too. I certainly respect the work that you do.

Obviously, I spent quite a bit of time correcting his thinking and sharing a different point of view with him. He later apologized if he had offended me in any way. (I guess he figured it could be a really long eight hours!!) I did some thinking about what he said, though. I continue to grieve at the poor reputation that some of the people in this industry reign down on companies that work so hard to do things the right way.

It's why I firmly believe in TCIA working with members to establish best business practices for the industry; to offer a way to improve companies; and to have a recognition system in place for their accomplishments. I believe a program like this is going to go a long way toward improving the general public’s view of this industry.

So I beg of you one more time to remember: It does matter what your equipment looks like; what your employees look like; how you interact with the public; and how you present your company within your community. You ARE worth it. Your service is worth it. YOUR DIGNITY is worth it.

Mine is just fine by the way. I took the joker down a few thousand feet in altitude that day, but I would appreciate some more help from your end. Remember that bringing the companies into the choir – yes, the ones whose business and tree care practices you don't like – helps all of us to fly higher together.

Cynthia Mills, CAE
Publisher

Cynthia Mills, CAE
Publisher

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Pruning saws: New styles and old reliables

New styles and new uses for handsaws

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 Tree Care Industry 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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SPEED. POWER. HANDLING. PERFORMANCE.
Hand Saws
Matching Tool to Task
By Lana Robinson

Hand saws. Now there’s a subject with some teeth in it! So many makes and models. Blades that are straight or curved, rigid or folding ... saws with conventional or Japanese-style teeth ... decisions, decisions. With a number of superior, cutting-edge products on the market, today’s arborist has many choices.

Matching tool to task is the first consideration. Quality construction should be at the top of the list, too. Quality saws are a better buy in the long run because they will last longer. Sharp arborists compare saws for features, including simple things like how it fits the hand, and value.

“First, look for a folding saw or straight-handle saw you can put on a pole,” recommends Larry Figas, president of the pruning division of Bahco Tools Inc., formerly Sandvik Saws and Tools. “It depends on if you will be extending it, or just using it standing on the ground or on a ladder. Then look at tooth pattern. You can see the difference in tooth patterns. Saws have, in colloquial terms, a bigger tooth or finer tooth. Visualize which are more aggressive saws or finer saws. You can generally make some determinations by sight.”

But before the search begins, it’s helpful to know something about how today’s saws evolved, which lends important clues regarding what to look for when choosing your hand saw.

Push cut, pull cut

According to Donald F. Blair, author of ARBORIST EQUIPMENT: A Guide to the Tools and Equipment of Tree Maintenance and Removal, traditional arborist saws fall into two main classes: push cut and pull cut.

“Early arborist saws were heavily modified carpenter-type saws that had straight blades and cut on the push stroke,” relates Blair. “My father’s custom-made Stockton Saw Works blades were shaped with extreme taper, to better enable him to fit into a tight crotch. Arborist saws were further distinguished by changing the handle from the distinctive carpenter saw shape to a smoother, more rounded form that better lent itself to use upside down, sideways and every which way a tree worker had to turn the saw to make a cut.”

Concerned by the number of upper leg cuts common among climbers, Blair says Keith Davey specified the Fanno No. 8 in the early 1930s, establishing a 50-year push saw tradition among Pacific Coast climbers.
Blair says curved "speed saws" with 20- to 24-inch and longer blades that cut on the pull stroke evolved from much smaller pole saw blades, such as the Seymour Smith No. 20, and popular orchard saws such as the Fanno No. 14.

"By the late 1920s, Bartlett Manufacturing was listing their 26-inch Paragon No. 127 as well as a copy of the Fanno No. 14, called the California saw. Atkins introduced the Silver Flash line of saws about this time as well. Disston, Seymour-Smith and Corona all introduced "speed saws,"" he says.

Fanno's No. 20 series of saws (20, 22, 24) were developed in the late 1920s to the early 1930s, but it wasn't until after World War II that their line of arborist-curved saws began to see appreciable growth.

"This was after Karl Kuemmerling worked with them to develop the gulleted K-24," Blair notes. "Out on the West Coast, we'd kill ourselves pushing a No. 8 and view anyone who came to work with a short, adjustable lanyard, a 'suicide' saddle and a K-24 as 'one of them climbers from back east.' The fact that 'them climbers' actually expected to work in the rain convinced us that they were all nuts."

Robert Fanno, president of Fanno Saw Works in Chico, Calif. and grandson of the company's founder, recalls that the advent of lightweight chain saws in the mid-1960s diminished reliance on the earlier, large tree saws.

"Chain saws made larger cuts faster. The demand for large tree saws went down. So from the 1960s forward, we had manual saws, which were usually smaller handsaws that were lighter and quicker for clean up or detail. That was the beginning of the small saw trend," says Fanno.

According to Blair, an interesting development occurred with chain saws. "For 45 years, we were looking for a chain saw that would replace handsaws. Then the Japanese-style saws came out in 1986, and the opposite occurred. Handsaws have replaced the chain saw," Blair suggests. "Chain saws are back to doing larger cuts, over 2 inches in diameter, rather than using them for fine pruning. You can't do quality work with just a chain saw. These new saws cut so well that arborists are beginning to use handsaws more than ever. The result has been a safer and quieter workplace with higher quality work as the net result."

Tooth patterns

Tooth design is an important factor in cutting preference. Regardless of the pattern, the gauge of the size of the tooth, the ppi (points per inch), determines the fineness of the cutting edge. Blair suggests that an eight-point saw is the best choice for delicate, close work on small shrubs and trees. Average saws, which measure 5-1/2 to 6 points, are for medium-sized jobs, while 4-1/2 point saws are recommended for heavy limbs. Larger teeth will cut faster, but they leave a rougher surface and are virtually useless on springy limbs less than 1/2 inch in diameter.

A variety of tooth patterns, which have developed over time, include: needle, diamond, raker, Tuttle and Fanno. The most recent introductions to the American market have been the Yardvark and the Japanese three-faceted tooth, also known as a tri-edge.

"Around 1985, Oregon Saw Chain developed a handsaw line with a unique tooth called the Yardvark that was easily sharpened with a chain saw file," Blair recalls.

"Skodco-Hawera brought the ARS line of saws from Japan in 1986. The tri-edge tooth has three facets that cut so smoothly they leave a surface that appears to have been sanded! The first saws were straight, but they cut on the pull stroke, confusing the user and breaking the blades left and right."

Fanno notes that the Japanese tooth design has been adopted throughout the industry. "Corona calls theirs the Razor 2; PRS, the Turbo; Barnell, the Tiger Tooth. Everyone is offering their own version, but basically - without too many exceptions - they have the same tooth and same type of construction. They are basically the same design," says Fanno. "That original tooth started in woodworking, the cabinetmaking side of wood cutting, and it got into landscaping. The first one offered was a straight blade, a small one. However, we saw back then the benefit to offer it in the curved blade design. That tooth design is probably still the most popular. It does give a very smooth cut. The wound closes faster [and] looks a lot better."

Fanno points out the advantages and drawbacks of both the conventional, or European, tooth and the Japanese tooth.

"The strength of the Japanese tooth is smoothness of the cut. The downside is the
tooth loads up and binds easier, especially in softer wood,” stresses Fanno. “The conventional tooth design is a sharp saw, very rugged, very durable. The tooth is self-cleaning. Debris does not stick in the saw as easily. The drawback on those is they do not cut as smoothly as the Japanese style tooth. One plus – it cuts better on larger cuts, especially in softer wood, or less dense material.”

According to Fanno, the conventional tooth saw is usually less expensive and has a longer useful life.

“The conventional tooth can be resharpened, several times,” he says. “The Japanese models can only be sharpened a very small number of times. With either one, the user can sharpen the blades themselves. The trend is not to resharpen – just buy new ones. As a manufacturer, we can resharpen saws, but only a small percentage request it. It’s more of a convenience issue. Some blades last a year, some only weeks. It depends on the type of work a person does. Detail and ornamental pruning require more usage,” he says.

Tom Dunlap, owner of Canopy Tree Care in Minneapolis, Minn., agrees that knowledge can be resharpened on some saws, but not by amateurs.

“This is a skill that takes training, a special eye and lots of practice,” cautions Dunlap. “Not all blades can be resharpened. I tried my hand at a Fanno blade and failed miserably. Some blades are hardened by the manufacturer so this makes it impractical to hand sharpen. I’ve sent blades back to Fanno for resharpening. The factory did a good job and I got another use out of the blade before it went into the recycling bin. The cost, including shipping, made sense to me. The resharpened blades didn’t seem to last as long as brand new blades but, it was a good value.”

Blair says arborists once took a lot of pride in being able to sharpen their saws, and measured their success by how thin they could get the blade. Today, however, he suggests it may be impractical to resharpen blades.

“Theoretically, it’s possible to resharpen them,” admits Blair. “Some people buy files, but by and large people don’t send them to be resharpened. They just buy a replacement blade when it wears down. Twenty-five years ago, a Fanno hand saw probably cost around $12, and it could be sharpened for $3. These new saws are $20 to $30 and replacement blades are $15 to $20. So they sell replacements. Today, blades produce so much gross volume for $20 life, it’s not worth resharpening.”

Straight vs. curved blades

Fanno emphasizes that straight blades were designed for push cutting.

“They are similar in appearance to carpenter handsaws,” he notes. “Curved saws were developed for the tree industry. As the saws and tooth size go up, the capacity goes up. It’s important to match the length of the blade with the size of the tooth. The kind of saw you use depends on the job.”

Fanno suggests that the curved blades are more efficient when used underneath the limb as opposed to over the limb.

“The power transfer is easier, ergonomically. When you are above pushing down, the feeding nature has to be above the cut. With the curved saw, you can be below the cut. Sometimes preference has more to do with use. A lot of saws in West Coast pruning are still straight,” he says.

Thickness of blade is important to some arborists. The straight Fanno blade, for example, is almost half the thickness of the curved blade. It produces a finer cut, removes less wood and is a little faster. The straight blade can get in places that cannot always be handled with the curved saw. On the other hand, it may bend or break because it’s thinner. It depends on the kind of pruning job at hand. For crown cleaning or just removing dead limbs, you might not need it. But someone who does a lot of detail work may favor it for getting out to ends of limbs and branches.

For general use, Blair currently favors a curved blade.

“My favorite saw has a Japanese tooth, measures 13 inches, has a curved blade, and a wooden handle with a D-shaped grip. As a climber, I’m less likely to drop it, and the knuckles are protected from hits by sharp sticks. I can cut upside down with a good grip. It’s also less likely to get
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5919
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5936
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5908
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5948
92 PETERBILT 375: CAT 3176, 325 hp, 6 spd, 58,000 lb GVW, with 25 ton MANITEX 2592 crane, 148 ft hook height, load moment indicator, 20 ft wood flatbed, 61K miles. $74,500.

5917
87 CHEVY C70: 6.2L Fuel Pincher diesel, 170 hp, 5 spd + 2 spd rear, 30,000 lb GVW, 8 ton JLG 800BT crane, 65 ft hook ht, 16 ft steel flatbed. $23,900.

5934
98 FORD F800: 7.8L diesel, 210 hp, 5 spd + 2 spd rear, 33,000 lb GVW with 8 ton NATIONAL 446 crane, 56 ft hook ht, 18 ft steel flatbed, 20K miles. $28,500.

5667
98 FORD F800: Cummins 5.9L, 230 hp, 6 spd, 33,000 lb GVW, with 14 ton TEREX TC2863 crane, 73 ft hook ht, 18 ft steel flatbed, 18K miles. $49,500.

5901
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5852
98 FORD F800: 5.9L Cummins, 230 hp, 6 spd, 33,000 lb GVW, with 15 ton PIONEER 1000 CRANE, 113 ft total hook ht, 360° area of full capacity operation, 16 ft steel flatbed, 30K miles. $62,500.

5699
97 FORD LT8000: 8.3L Cummins, 275 hp, 8 spd +lo, +lo/lo, 58,000 lb GVW, with PIONEER 2000 crane. 124 ft total hook ht. $79,500.

5926
90 INT 4900: DT466, 185 hp, 5 spd + 2 spd rear, 33,000 lb GVW, with 3 ton IMT 4825 knuckleboom, 25'1" max side reach, 11 ft steel flat/util bed. $22,500.

5658
98 GMC T7500: 3116 CAT, 6 spd, 6.5 ton HIAB knuckleboom, 26 ft side reach, 19 ft steel flat. $39,500.

5818
99 FORD F800: Cummins 5.9L diesel, 215 hp, 6 spd, 33,000 lb GVW, with 55 ft TECO VSA-55P-2TFE2 BUCKET, 2 man end hung basket, 14 ft utility body, 25K miles. $44,500.

5810
98 GMC C7500: 3126 CAT, 345 hp, 6 spd +lo, 33,000 lb GVW, 6 ton PALFINGER PK14080 knuckleboom, 218" max side reach, 22 ft steel flatbed. $39,500.

5870
89 FORD LNT9000: Cummins LTA10, 240 hp, Allison 5 spd auto, 56,000 lb GVW, with 11 ton HIAB 260AW knuckleboom, 20 ft side reach, 16 ft steel flatbed. $29,500.

5775
93 INT 4900: DT466E, 230 hp, 8 spd +lo, 32,900 lb GVW, 4 ton PALFINGER PK8000A knuckleboom, 236" max side reach, 18 ft steel flatbed with 24" fold down steel sides & rear gate. $29,500.

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vered by brush out of the scabbard,” he says. “Curved works for my style of cutting. I pull it to me. The shape of the saw helps put teeth into the wood. It cuts with less effort.”

In recent years, saws have been sold with leg scabbards. These newer scabbards have not been addressed by industry safety standards. Employees should get permission from their employers before using leg scabbards.

“When the standards were written, it never occurred to them that someone would come up with a saw strapped to the leg,” notes Blair. “I won’t do it. I’m not comfortable with it.”

Like Blair, fellow arborist Tom Dunlap also prefers a curved blade. “With the curve, more of the teeth are kept in contact through the arc of the cut. More importantly, the user’s wrist isn’t bent as much during use. Using a straight blade handsaw during removals or when blocking down wood is handy. The chain saw can be used to make the back cut through most of the wood. Then the chain saw can be put aside and the back cut finished with the straight blade. The straight blade will cut the same amount of wood all of the way across the hinge wood, not just the corners.”

Dunlap notes that most arborists use a 13-inch curved blade. However, for accessing small, tight branch unions and for shrub pruning, some climbers prefer a straight blade.

Folding pruning saws are also handy in the field. Some triangular saws collapse for carrying. Other folding saws have a curved blade with teeth on the underside attached to a short handle by a bolt and wing nut. The bolt and nut lock the blade open for use and closed for carrying, like a pocketknife.

Most climbers like to have several types of saws and blades readily available.

Fanno makes this comparison: “The variety of blades is like a golfer and his bag of clubs. Depending on where the person is in the tree, he can pick the best one to meet his needs.”

Handle shapes are really more of a matter of personal preference than function. Some have curved handles, enclosed handles or notches for fingers. Corona and Stihl saws, among others, have curved hardwood handles for a solid grip.

Pruning saws have traditionally had either a “D” handle or pistol grip handle. “D” handle saws can have a straight or curved blade and are usually double-sided with coarse teeth (six teeth per inch) on one side and cleaner cutting teeth on the other (eight teeth per inch). They are usually about 18 inches long. The pistol handle saws are one-sided and can be fixed or folding and range from 18 inches down to 10 inches.

Almost all Silky saws have rubber compound elastomer handles. The rubber is either inserted or vulcanized to ABS plastic or steel. The manufacturer suggests that rubber handles are “comfortable to hold, reduce vibration and offer superior grip when hands are wet, cold and when wearing gloves.”

With so many high quality saws available, today’s arborists needn’t ever have a dull moment.

**Various brands for different users**

Tim Walsh, staff arborist for the Tree Care Industry Association, says handsaws sold by the better-known manufacturers all have attractive features, so personal preference comes into play. And in the final analysis, choices are often influenced by the cost.

“A smaller company may be willing to pay extra for a quality cut, but if you’re a big company and you need to buy 5,000 to 6,000 saws, you want a decent cut with a saw for a reasonable rate,” says Walsh.

ARS brand saws from Japan are imported by Val Box, owner of Growtech Inc., in Roselle, Ill., and available at most arborist supply houses.

“Where we excel is that we finish our blade,” says Box. “Our blades have either a chemical-nickeled finish or they are hard chrome plated. Both finishes work like Teflon, but never wear out. And they are also harder than steel. The finish makes the saw slick, so fewer deposits can adhere to it. The plating is the best selling factor for our pole saw blades and 13-inch curved arborist blade. The plating is more expensive, but it pays off in the long run. Arborists don’t have to scrape off deposits and risk hurting themselves doing it.”

Box recommends the more pliable, chemical-nickeled blade for cold weather pruning. ARS’ most popular model is the 13-inch curved saw, and the second most popular is the curved folding saw (GR-17). The ARS pruning saw in sheath is a two-way tilt grip with Super Turhocut teeth.
The specially set teeth cut smoothly into green wood—straight, across or diagonally to the grain. The lightweight, easy-to-carry sheath has dual rollers at its mouth which firmly hold the saw even when turned upside down. A thumb operated lever sets the blade for two different angles so that the saw can cut sharply into the trunk or branches stretching high or low in any direction.

“Our new ‘UV’ version raker tooth for better chip removal, our Turbocut, is great for the thicker branches but not a good choice for areas where trees have a lot of little twigs. It would get hung up. The even toothing, our CT series, or Supercut, is for people who have normal branches,” Box advises.

The Bahco professional pruning saw makes fast work of pruning jobs. Features include extremely sharp tooth design and handle angle that reduces arm fatigue.

Bahco has three saw blades—two are folding, in two different tooth patterns. Another is a straight blade saw. They are roughly equal. The folding type is popular, since the tooth pattern is protected when covered. It’s easier to carry around, and safer since the blade and tooth are not exposed.

Bahco’s 396-HP folding saw boasts hard point, coarse XT7 toothing for fast cut and durability. It’s especially good for cutting in hard, dry wood. It features a two-component plastic handle for a good grip and a safety lock when folded.

Bartlett Manufacturing President John Nelson suggests that curved saws are here to stay and straight ones are almost obsolete.

“Our pole saw is really catching on. It has the bi-cut tooth design, which is cheaper than the tri-edge and just as effective. Blades can be resharpened by the arborist,” says Nelson.

Bartlett’s most popular saw in terms of sales is an imported 13-inch curved Japanese saw with a wooden handle that retails for $12.95.

Corona Clipper saws are constructed of a tempered steel alloy which resists rust and holds it edge. Corona sells two curved-blade folding saws—one with an 8-inch blade ($16.95) and the other is a 10-1/2-inch ($18.95) blade for small to medium branches. They have seven and six precision-ground teeth, respectively, and blades fold into the hardwood handle for safety, storage and easy transport. Corona’s self-cleaning raker tooth model for large branches resists binding on green or woody limbs. The raker saw, which sells for $39.95, features a laminated hardwood D-style handle, a 20-inch curved blade and four precision-ground teeth per inch.

Fanno Saw Works offers 40 to 50 different saws, according to its owner.

“We kind of specialize in handsaws,” says Fanno. “That’s why our position in the industry is such. My grandfather developed the first pole saw in fruit and nut growing. We developed the first folding saw back in the 1930s. We try to respond to different needs.”

The Fanno K-24 was specifically designed for tree service companies desiring a saw with deep gullets. This provides the user with a faster self-cleaning saw in soft or fibrous type woods. Commercial pruners often choose the No. 1 Fanno Folding Saw, which features a 10-1/2 inch cutting edge, 6 points per inch lance teeth and can be carried in the pocket. The Fanno Saws Nos. 16 (16.5-inch cutting edge) and 17 (20-inch cutting edge) cut on the pull stroke. The unique pistol grip handles make these saws favorites for close-quarter tree work.

Felco, imported by PYGAR, Inc., has a diverse line of pruning tools including saws, shears, loppers and knives. The Felco 60 Folding Miracle Saw has a patented blade design where the shape of the blade is thinner at the top and thicker at the bottom—where the teeth are. This feature is designed to keep only the teeth in contact with the material to be cut and prevents clogging and binding. The F-60 is meant for use on branches up to four inches in diameter. The overall length of the saw is 14 inches, with a blade length of 6 inches. The F-60 weighs 4.9 ounces.

In addition to the F-60, Falco also offers the F-61 Pruning Saw, which takes advantage of the same tapered blade design, but is designed for use on limbs up to 9 inches. Hard chrome plating prevents blade rust. The F-62 Turbocut Saw comes with a sheath with belt-loop and has a 9 1/2 inch blade which is taper ground. The F-61 and F-62 saws are not folding. Blade replacements are available for both. The
The new and improved Bartlett Pole Saw Blade features razor-sharp Bi-Cut teeth for quicker and cleaner cuts than ever. Made of high quality saw steel, this blade is stiff and strong. It still features three position holes and can be quickly adjusted without tools when mounted on our strong, lightweight Bartlett head. This blade also fits most other standard pole saw heads.

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800-457-8445
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The Stihl PS 70 has a 13-inch, high-carbon tool steel blade with nickel plating.

The Felco 60's unique blade design helps prevent clogging and binding.

F-61 and F-62 weigh 8.2 ounces and 8.4 ounces respectively.

Silky saws, made in Japan by UM:KOGYO INC., cut on the pull stroke, for less energy expended and more control over the action of the saw. Silky's conical setting-free blades are made from SK-4 high carbon steel and taper ground to reduce resistance and ensure smoother, easier, faster-cutting performance. Hard chrome plating produces an exceedingly hard, durable surface, making the blades resistant to rust and the effects of tree resin. They are mirror polished and wipe clean easily. Silky 4-RETSUME (Ibuki) saws have teeth set in a way that there appears to be four rows of teeth. Saws marked with the 4-RETSUME symbol are rough-cutting handsaws for heavier tasks. Silky taper saws marked with MIRAI-ME symbol have precision ground, razor sharp teeth with four cutting angles along the length of the blade. Both saws cut on the pull stroke for faster, more efficient cutting and excellent free flowing discharge of chips. They can rip-cut, cross-cut and slant-cut. Teeth of blades are impulse hardened for sharpness and durability. Silky's Zubat series of saws is its best selling line in North America.

Tom Dunlap, together with world champion tree climber Mark Chisholm, offer a climbers' online message board called Buzz Board. Tom notes many climbers are starting to use the Silky hand saws.

"The cut that the saws deliver is smooth and they cut with less effort," Dunlap contends. "Since the saw comes with a scabbard, the blades are replaceable and the blade stays sharp for a long time. Thus, the higher price is offset.

Stihl offers a variety of quality hand saws. Stihl's PS 30 Precision Pocket Saw folding blade is curved and measures 6-1/2 inches. The PS 40 Precision Pruning Saw features a 7-inch fixed blade. The PS 60 Precision Pruning Saw has a 9 1/2-inch fixed blade with nickel-plated finish. Billed as the "do it all" tool, the PS 70 Precision Arboriculture Saw is fitted with a 13-inch curved chemical nickel blade and hardwood handle.
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Growing Your Business With Improved Customer Service

By Kennette Reed

Is your tree care company providing great customer service? How would you know? Most company owners might answer, “Well, I haven’t had many complaints.”

Customer service goes beyond just a suggestion box approach. Companies that provide great service talk to their customers, one on one, and find out if they are providing all the services that customers — and potential customers — require.

Companies that overlook this important barometer of customer attitudes are not focused on the critical aspects of growing a business.

Myths of customer service

To provide exceptional customer service, a company must go above and beyond expectations. How do you know what your customers expect? Simple: Ask them — before and after you perform the job.

Before you start your tree work, ask your customers what they expect. After the job is complete, ask them if your service has met their expectations.

Focus on what they asked you to do and what they needed. Sometimes what they think they want is not necessarily what they actually need. In such situations, explain your view of things before you start work.

Be proactive

As a tree care company owner, how do you keep the customer yourself happy? Plan for the future and understand expectations. Look for things that might become problematic.

Customer Service the S&S Way

Steven Sylvester, president & CEO of S & S Tree & Horticultural Specialists, Inc., emphasizes customer service in all of their operations.

For example, S&S was called in to take care of the trees at Hidden Shores, a 100-unit housing complex. The trees had never been pruned, other than tipping and some removal of low-hanging branches by the lawn care contractor.

"Tree budgets are tight now for homeowners' associations," notes Sylvester, "because their insurance rates have shot up in recent years. They don't have any money for paving or tree work. We are willing to work with them to help them over these difficulties."

In addition to completing the original work bid on the contract, S & S returned to the site several times to take care of special requests from individuals. "People who weren't there when we were on site wanted specific limbs removed," says Sylvester. "After the job was done originally, we had a walk-through with the client to make sure everything was done properly and the client was happy. They were."

Then the call-backs started — three in all. Whichever crew was in the area would go back to take care of the limbs. On average, the calls took 15 minutes and produced a very satisfied repeat customer.

"We aren't the cheapest company in the area," he notes. "We're right in the middle. We bid work based on what we need to be profitable. When you pull into a gas station, you can get full service or self-service. We offer full service by catering to our customers."

The company, which has been in business 27 years, has a very detailed customer service tracking system. Every customer gets a thank you note along with the bill and a survey card to rate the work. When those cards come back with even the most minor critique, that customer gets a phone call asking what S&S can do to make things right.

"First-time customers are blown away that we respond at all," says Sylvester.

S&S starts with a survey card when they do the initial estimate. The customer is asked to rate the folks who answered the phone, the estimator, and the total experience. A second card, sent with the invoice, asks the customer to rate the work done and how they heard about S&S.

"We make copies that we post out in the crew room," relates Sylvester. "The wall is plastered with positive comments. We want the crews to see that customers appreciate what they have done. Our customer service promise is 100 percent customer satisfaction, or we give them their money back. The Web site, Angie's List, is a national service where customers can rate various companies and services. Two years in a row we were No. 1 — for all companies not just tree care — in the Twin Cities. This is unprecedented for a service company. We have received very good press from this."

S&S has never had a customer demand a refund.
for customers, even though this might not be your responsibility.

Let's say for instance that you have a commercial client who has a very large tree on the front of the property. The roots have grown to the point where they are pushing up the pavement. This would not necessarily be an issue for you because you probably aren't the person who would replace the pavement. Nevertheless, you see that this is a potential issue; someone could trip and injure himself. By pointing this out while you are on the job, you provide a service that costs you nothing, yet exceeds customer expectations. You may have also made them aware of a budget issue that they need to consider.

Keeping customers

It is cheaper to keep customers and service them than it is to find new ones. Landing new customers is very expensive. You have to send people out into the field without a guarantee that they will bring any business back.

Focus enough time and energy on the customers you already have. They trust you and are doing business with you. They understand the good (and the bad!) aspects of your service, and they are the most likely candidates to buy from you again.

Raise your service level so high that everybody else has to run after you to catch up. Then customers will remember that your service is better than your competitor’s, and they will call you the next time. I once heard the advice, “make your service so great that a customer would be a fool to go to anybody else.”

Business owners don’t realize just how much an unhappy customer can cost. An unhappy customer can cost you in more ways that you can ever imagine. They can make sure that everybody close to them knows that they are unhappy. They can tell many people that your company did not provide them with the level of service they expected. One unhappy customer could influence the buying decisions of 10 to 40 others. If each one of those people represented a potential job worth $500, that’s $5,000 to $20,000 in lost revenue from one customer who complained to friends about your service.

When you lose customers, you may lose staff you can’t keep busy. You’ll have higher unemployment compensation costs. When business picks up again, you have to recruit new employees and you have to train them, which all costs money. Be thankful for the customers you have.

When a customer complains, you become aware of a problem that you may not have been aware of previously. This is an opportunity to correct a problem before it adversely affects another customer.

Let’s say a customer calls to complain that a crew didn’t clean up properly. You absolutely have to send that crew back. Just as importantly, you need to determine if this crew regularly fails to clean up properly. If so, they may have created lots of unhappy customers – and cost you business – because many customers won’t call

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TREE CARE INDUSTRY - JUNE 2003

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A customer complaint is an opportunity to save a relationship. Most unhappy customers don’t complain, they simply hire someone else. All you know is that you have not heard from them lately. When they complain, you have the opportunity to show how much you care.

When you do respond positively to complaints, a satisfied customer will tell people about how easy it was to work with you. You got a complaint, you addressed it in a timely manner. You provided excellent service and fulfilled the customer’s expectations. As a matter of fact you went above and beyond them.

So often companies do extra things and don’t mention them to customers. If you let them know, customers will be pleased. Make sure you communicate – even if “extras” are part of your normal business practices.

For repeat customers, especially commercial clients for whom you do a variety of jobs, start a checklist of all the things you do. At the end of the quarter, send the list to the client detailing all the services provided during that quarter. You will find that most customers really do not have a clue as to how much work your arborists do on a regular basis at their properties. Make them aware of all the services they get for their money. This way, they’ll know all the services that you provide when your competition comes calling.

Reward customers who complain

Some company owners think that rewarding customers who complain is crazy. Make sure you let your customers know that you are grateful when they take the time to complain.

When you let them know that you are glad that they helped make you aware of a service issue, and you thank them for helping, you have just taken an important step in creating a very loyal customer. People like praise.

I recommend you go a step further. Give them a gift, perhaps $25 off their next service as a thank you for their help. That customer will tell enough people about your service that the increased business will more than make up for the cost of the gift. Make sure that you are always looking at customer relationships as win-win situations. If they aren’t, then you need to evaluate to see which ones you want to keep.

Measuring customer satisfaction

If you don’t survey your customers at least once a year (twice a year is preferable), then you are selling your company and customers short. You can’t be fully aware of customer satisfaction without doing your research. If you’re just guessing, you’re making it harder to create win-win situations.

There are a number of low-cost ways to do surveys. You can call with a list of questions to ask. You can assign a salesperson to talk to customers directly. You can do online surveys. You can include surveys with your invoices. Make sure you follow up on surveys.

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“Mystery shoppers” are a great way for you to find out how good your salespeople are and how professional your crews are in the field. Large companies may pay a business that specializes in pretending to be customers. Small companies might ask friends. Give them a list of questions to measure employee responses. I have talked with company owners who complain that they get a lot of calls but can’t seem to convert them into jobs. It could be that the people fielding calls at your company need more training or education.

Make up a list of questions for friends to ask your salespeople. Make up a checklist of services and ask your friends to remember whether the salesperson mentioned them. I spoke with one tree company owner who told me he has three people bidding jobs. One outperforms the other two consistently. The other two just meander along and he can’t quite figure out why. Most of the time, you will find that the salespeople who bring in less revenue are more comfortable selling your lower-priced services or don’t know the product mix very well. People sell what they know. If they are not trained well enough to know what your high-profit margin items are, or if they are not trained well enough to sell them, then they are only going to sell what they are comfortable with. That may be a $300 service instead of $1,500 jobs.

To rate your crews at the job site, give the mystery shopper a list of things to look for to see if work is performed according to company standards.

**Viewing the customer**

Make a determination as to whether or not you want to build a roster of clients based on relationships or a series of one-shot deals. This will help you determine how to spend your time and money. Relationships require appointments, customer service, newsletters and follow-up calls. One shot deals require a good price and more money spent on advertising.

If you want to build relationships, then you have to be willing to take the time to develop them. If not, you will need to re-focus your efforts on the type of customer you do want. Every customer deserves to have exceptional customer service and every customer expects it.

The 1990s philosophy for customer service was “the customer is always right.” There have been thousands of books written on the subject. This philosophy is wrong. The customer is king.

Kenneatta Reed is a customer service specialist, consultant and the author of “Everything You Need To Know About Customer Service, You Learned From Your Mother.” This article was adapted from a presentation at TCI EXPO 2002. To order an audio tape of the entire session, go to www.soundrecordings.org.
In my capacity as a consultant, I have employed the Trunk Formula Method (TFM) only in rare cases during the past several years. It is my impression, however, based on questions I receive and the reports that cross my desk, that many other appraisers—particularly consultants who are relatively new to appraisal—use TFM exclusively and feel TFM is why the Guide for Plant Appraisal was written. In this article I would like to caution appraisers to think through the possible challenges that may develop regarding any appraisal.

If you are to be successful defending an appraisal, you will need to be prepared to answer, hopefully in simple terms, questions that arise regarding how and why you employed the method and its protocols. The vast majority of questions directed at Council of Tree & Landscape Appraisers (CTLA) committee members regard TFM, and many of these questions are being asked by folks who have years of experience in the appraisal process. The volume of questions received regarding TFM suggests to me that many appraisers are not fully prepared to explain TFM if challenged. It has been my unfortunate experience that many of these questions can and will appear at the most uncomfortable times, like when you’re sitting in the witness box. Defending the reasoning you employed in using the retail cost and a 90 percent condition factor, when the opposing expert used the wholesale cost and a 75 percent condition factor, can quickly become lengthy and challenging. Even if you’re perfectly capable of explaining all of the intricacies of TFM, the judge will probably fall asleep.

While TFM may be the only method applicable in certain circumstances, please consider it as only one tool in your toolbox. My most used method of appraisal? Easy—cost of cure! With a little creative but reasonable thinking, the concept of developing a value by restoring the approximate level of benefit enjoyed by a property owner prior to an event can be simple and defensible. I offer a total value to:

1. Cleanup and repair an affected site;
2. Restore (within reason) to the approximate level of benefit previously enjoyed by the owner. (This is the creative part. Trust me, it can be done in many cases);
3. Offer a cost to provide after care. I have a simple and defensible appraisal. The process is easily explained to a layperson and the values are hard numbers offered by local contractors to supply material and perform services.

Any appraisal method selected by you must be defensible by you. The most defensible appraisals will be those that are as simple as possible, reasonable in scope, and are based on methods you fully understand and are comfortable employing. I have developed numerous cost of cure estimates for clients, and on completion, I have always been confident of my ability to defend those appraisals thoroughly. Is cost of cure always applicable and defensible? No, but we’re trying to have the perfect appraisal method ready for edition 13 of the Guide!

David Hucker is TCIA Representative to the CTLA.
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**cabling with endz**

Tri-Star Gage of Bloomfield, Conn. introduces a new way to secure weak branches and stem unions called “Endz.” Designed to eliminate broken preform splices without the cost associated with purchasing different types and sizes of eyebolts, Endz uses the same basic idea as field repair kits for skidder cables to replace traditional cable splices and preforms. A specially designed steel barrel and end cap provides a no-slip wedge to terminate cables and guy wires. The wedge effect puts the load on the barrel and end cap, not the set screws. For use with standard seven-strand EHS cable, Endz eliminates the need for preform splices. Installation requires only a Havens grip, ratchet strap for tensioning, and an Allen wrench. For more information, contact James Drude at (860) 243-3413 or www.tri-stargage.com.

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Morbark introduces a new addition to its family of brush chippers, the heavy-duty Model 12 Blizzard. At 5,720 pounds with horsepower ranges from 50 - 116, it is rugged and powerful. The Blizzard is a 12-inch capacity drum-style chipper. Standard equipment includes a large diameter single top feed wheel, an adjustable discharge deflector, 360-degree manual crank swivel discharge chute, air impeller, hydraulic feed wheel lift, folding infeed tray, telescoping tongue and a live engine-driven hydraulic system. The hydraulic motor powers a chain and sprocket-driven feed roller. A dual hydra-lift system uses live hydraulics to lift the feed wheel for quick maintenance and inspections without engaging the chipper drum. Options include an automatic feed system, hydraulic swivel discharge, rubber infeed curtain, tongue jack with castor, variable speed flow control, clear coat on paint, radiator brush guard, and a safety stop on the infeed. For more information, contact Morbark at (800) 233-6065 or visit them online at www.morbark.com.

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New RedMax Saw

RedMax has introduced a powerful new chain saw, the G5000, powered by a durable 49.3 cc engine. It is offered with a 16 inch, 18 inch or 20 inch bar for serious, heavy-duty cutting. To increase the saw’s reliability, the G5000 is equipped with RedMax’s, patented, dust-free intake and the company’s closed transfer port. The crankcase is made of strong, lightweight magnesium, and spark is delivered through a CDI ignition. The chain tensioner for this 11-pound saw is on the side for easy adjustment. For information, contact RedMax, a division of Komatsu Zenoah America Inc., 4344 Shackleford Road, Suite 500, Norcross, GA 30093. Phone: 1-800-291-8251; Fax: 678-380-6886; Web: www.redmax.com.

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MS 191T & MS 200T

Stihl’s MS 191T and MS 200T chain saws include the “lifetime” warranted electronic ignition system, lightweight, balanced design, and a high torque engine. The MS 191T has an 11 percent increase in power over its predecessor, the 019T. With 1.9 bhp and at a mere 8.8 pounds, it offers users an exceptional power-to-weight ratio and excellent balance. The MS 200T is the company’s lightest gasoline power chain saw. At 7.9 pounds, the MS 200T is 24 percent lighter than its predecessor, the 020S, and has a much narrower profile. For more information or for the name of the closest STIHL retailer, call toll free 1-800- GO STIHL (1-800-467-8445) or visit their Web site at www.stihlusa.com.

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Bayer ES Announces Reorganization

Bayer Environmental Science recently announced a reorganization within the Chipco Professional Products marketing group. The changes include several new positions, as well as adjustments within the structure of previous positions. The new slate of managers now includes:

Director of Marketing: Jim Fetter – leads strategic and marketing planning for all products and services related to the turf and ornamental industries.

Business Manager, Insecticides: Marc McNulty — manages fipronil and curative insecticide products (Dylox, Sevin, Tempo and DeltaGard), and acts as the marketing team lead for lawn care programs, projects and services.

Business Manager, Herbicides/PGRs: George Raymond — manages all herbicide and plant growth regulator products, as well as all industrial vegetation management (IVM) and biotechnology programs, projects and services.

Business Manager, Fungicides: Eric Kalasz — manages all fungicide products, and acts as the marketing team lead for all golf course programs, products and services.

Program Manager: Bryan Gooch — manages all turf and ornamental rewards programs, including Accolades and Greenback end user programs, as well as distributor, formulator and agent partner programs.

For more information, call 800-331-2867. Or visit them online at www.BayerProCentral.com.

RedMax Promotes McCallon

Komatsu Zenoah America, Inc. has promoted Phill McCallon to RedMax Distributing Field Sales Manager. He will be responsible for sales to dealers in Kentucky, Tennessee, Alabama and Georgia. McCallon joined RedMax Distributing, one of RedMax’s direct distribution units, in 2001 as territory manager for Western Tennessee and Northern Alabama. He brought to RedMax extensive equipment sales experience, including 12 years with Rasche Cycle Co., a RedMax distributor in Paducah, Kentucky. McCallon holds a masters degree in Agricultural business from Murray State University.

RedMax, Komatsu Zenoah America, Inc. is headquartered at 4344 Shackleford Road, Norcross, GA 30093. They can be reached at 800-291-8251, fax: 678-380-6886, Web: www.redmax.com.
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Orlando, FL
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June 23-25, 2003
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July 29-31, 2003
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The State of New York Welcomes Green Point

By David G. Marren

On Tuesday, Feb. 25, 2003, leaders from New York’s arboriculture and green industry community met on Long Island to discuss the political and regulatory issues affecting the industry. Present were the leaders of the New York Arborist Association, the Long Island Arborist Association, the Professional Certified Applicators of Long Island, and senior management from the Davey Tree Expert Company, the Almstead Tree and Shrub Care Company, and the F.A. Bartlett Tree Expert Company.

All parties agreed that the regulatory climate in the State of New York was aggressive, fast moving, and at times seemed anti-green industry. All parties agreed that not understanding and engaging in this process was hurting each business and organization respectively. All parties agreed that the arboriculture and green industry community had never been recognized in the state as a legitimate political force. Furthermore, all parties agreed that the time had come for this community to form a legal association, to seek political consultation and lobbying efforts from professionals, and to become involved in the regulatory process in New York from the ground up.

The result of this meeting was the formation of Green Point of New York. Green Point is now a legal association in the State of New York. Leaders have been elected. An organizational structure has been formed, and members have already begun reviewing the proposed legislative and regulatory actions that have the potential to impact the industry.

“I feel that for the first time in my career our industry has joined together intelligently in order to address the issues that affect all of our businesses in a meaningful way,” stated David McMaster, vice president of Bartlett Tree Experts, and the first president of Green Point. McMaster is referring to Green Point’s open and honest approach with New York’s legislative and executive branches of government. This is an approach that members of the state government have welcomed, and have shown a great deal of respect for.

This respect became evident during a recent discussion with Vincent Palmer, of the New York Department of Environmental Conservation. During a discussion with members of the green industry, Palmer stated that “[his] door will always be open to this group be-
cause it is professional and sincere.” With this kind of reaction from state officials, it is no surprise that several other important members of New York’s arboriculture and green industry community, such as SavATree, Alpine the Care of Trees, and the Nassau/Suffolk Landscape Gardners Association have joined Green Point.

Green Point has also gained the support of the nation’s leading association in representing arboricultural firms, the Tree Care Industry Association (TCIA, formerly known as the National Arborist Association). “Green Point’s time has come,” states Cynthia Mills, CAE, president of TCIA. “Our association fully supports Green Point, and we fully support the ways in which Green Point has chosen to represent the industry in the legislative and regulatory arena in New York.”

Mills notes that TCIA is providing a liaison to Green Point, which will assist membership in understanding the process and understanding the progress that TCIA is making at the national level on behalf of the industry. “It is critical that members of our industry join together and become engaged in the political process at both the state and national levels in order to solidify us as professionals whose voice must be heard,” Mills adds.

With this type of support, expert political advice, and a clear mission statement, Green Point will now begin to work with members of New York’s legislative body, regulatory agencies, the attorney general’s office, the governor’s office, and the local government bodies. The goal is clear. Green Point will gain a better understanding of the laws, rules, and regulations that have the potential to affect the arboricultural and green industry. Green Point will provide assistance and technical understanding to those who are promulgating such laws, rules and regulations. Green Point will provide alternate legislative proposals and interpretations where appropriate. Green Point will represent its membership to these bodies with professionalism and integrity. And, Green Point will communicate all developments with its membership in a timely manner.

Knowing this, it is easy to see why members of Green Point are excited about their future—a future in which they will be represented professionally. The membership of Green Point wants all those working in the arboriculture and green industry to understand that if they are interested in a successful future, and the idea of working with the agencies and bodies that govern our businesses instead of against them, then they should join and support this effort. There is no better way to explain why members should join than to agree with Cynthia Mills: “Green Point’s time has come.”

David G. Marren is director of regulatory affairs for the F.A. Bartlett Tree Expert Company.
What the TCIA/OSHA Alliance Means to the Tree Care Industry

By Peter Gerstenberger

Even though TCIA’s formal Alliance with OSHA is slightly over three months old, the association can already boast about tangible, positive results. There is every indication that the relationship will greatly benefit the industry and enhance worker safety. While there have been some short-term accomplishments, TCIA feels that the real benefit of the Alliance is yet to be realized.

The formal Alliance document was signed by all parties on Feb. 11, 2003, and announced in a Feb. 27 press release from OSHA.

Prior to the announcement, while the Alliance was still being negotiated:
- TCIA was provided with a draft of “CPL 2-1.38 - Enforcement of the Electric Power Generation, Transmission, and Distribution Standard”, the latest compliance directive for 1910.269. The draft acknowledged the association’s position relative to the use of body belts/lanyards by bucket operators. On Oct. 7, 2002, the association replied with two suggestions. The first was to revise an outdated definition of climber’s saddle, and the second was to write new language to address the appropriate specifications for climbing line. OSHA accommodated the first request but not the second, and issued the directive on Oct. 31, 2002.
- TCIA was provided with a draft copy of proposed changes to 1910.269, as well as general industry standards. Through correspondence with OSHA’s Standards Directorate, the association was informed of revisions to the minimum separation distances in 1910.269, which guided the revision of information in the industry consensus standard, ANSI Z133.
- We participated in a cooperative effort between OSHA Region I (New England) and the Massachusetts Arborists Association to help local companies implement safety programs.
- Almost immediately after the Alliance announcement, calls seeking assistance from Compliance people started coming in.
- A New Mexico caller was looking for guidance in investigating a struck-by fatality.
- An Ohio caller sought guidance for an accident under investigation.
- A North Dakota caller sought help in writing a safety bulletin, in the aftermath of an accident.
- CalOSHA’s training division would like to begin a dialogue with TCIA on training and outreach for compliance people, as well as affected businesses.
- Recently, OSHA invited us to nominate panelists for a “Small Business Regulatory Enforcement Fairness Act” (SBREFA) panel, which will help OSHA evaluate the impact of changes in OSHA regulations to small businesses. TCIA selected two representatives to participate.
- Some may think this close working relationship between regulatory entities and trade association is a new paradigm. For the tree care industry, however, it really is not. When the vertical standard regulating the utility line clearance industry was promulgated in 1994, it represented the culmination of about 12 years of effort on the association’s part. During that period, many dedicated volunteers and association staff worked closely with OSHA on those parts of the Standard affecting line clearance trimming. The result was a workable standard.

The Alliance hasn’t caused OSHA to make issues go away, nor has it caused TICA to ignore them. During its negotiations, TCIA helped two members, one in New Hampshire and one in Pennsylvania, successfully contest OSHA citations. Currently, the association is contending with two examples of what can happen to member companies in the absence of a strong working relationship and meaningful dialogue with regulatory bodies. In both instances, controversy arose in State-plan OSHA jurisdictions, and TCIA is actively engaged in a dialogue to find workable solutions.

A proactive, collaborative relationship with OSHA allows us to accomplish more good in a shorter time than does a combative, reactive relationship. There’s a very good chance that, had TCIA been able to nurture good relationships with those states a few years ago, it would have many different news to report today. In the worst case, the industry’s concerns and points of view would have been well documented, and it would still have recourse through tougher actions.

Peter Gerstenberger is vice president of business management, safety and education for the Tree Care Industry Association.
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The art of tree moving is spectacular and wondrous. Adding the majesty of mature trees can beautify a site very quickly. I have been involved with many successful tree-moving projects, and for several years now the relocated trees have been thriving.

I also have worked with and read the reports of those who claim tree relocation is a losing proposition, resulting mostly in tree failure. The field work I have been involved with included trees that lacked vigor and vitality from the start, had experienced heavy fire damage while boxed in the field, and suffered a lapse in care for a period of approximately one year. These circumstances clearly do not provide adequate grounds to arrive at a reasonable conclusion that tree relocation should be dismissed as a means of preserving our heritage trees from demise.

Tree relocation is a risky prospect that can be performed successfully. My experience is that a high rate of success can be expected when a healthy tree that is boxed correctly and at the right time is moved, and if a maintenance program is included.

There are only a handful of tree moving companies in the United States that have the capability of moving large specimen trees with root-balls in excess of 10 feet in diameter. I had the pleasure of working for one of these companies and served as their staff arborist for six years. During this time, I evaluated trees and the probability of relocating them, and supervised their care before, during and after a move. In addition, regular site inspections were performed on many projects for periods of two to five years to determine specific do’s and don’ts associated with tree moving.

This article focuses primarily on the relocation of coast live oak (Quercus agrifolia). Projects that form the basis of my experience include residential, commercial, community development, and golf course tree moves. Granted, formal documentation has not been recorded; nevertheless the information and opinions span more than six years of hands on relocation of mature trees.

Defining a good candidate

I always start by performing a reasonable and prudent inspection of the tree and site to determine the likelihood for survival and performance after relocation. The tree must be healthy and vigorous, showing little or no signs of stress. Structural integrity is also very important, since many trees are relocated from open spaces to areas of high traffic where failure could present a danger.

Trees must be inspected for pests and disease, included bark, girdling roots, as well as cavities and decay in trunks or branches. Species must also be considered; there are several that do not respond well to relocation.

Box size

Determining the box size for a tree requires experience. Considerations include, but are not limited to; species, trunk diameter, canopy size, structure and size of roots, and, of course, site conditions. According to the Tree and Shrub Transplanting Manual, by E.B. Himelick, the formula for de-
determining container size is approximately 9 inches for each inch of trunk diameter. Under competitive bidding pressure, tree-moving companies may tend to undersize boxes, putting trees in boxes that are too small. While some tree species may be suitable for small boxes in relation to their trunk diameter, others species are very sensitive to box size. My recommendation on the more sensitive species is to use the largest box allowed by the construction budget. Larger root mass usually results in an increased rate of success.

Preparation

The process of moving trees induces drought symptoms, usually resulting in stress due to the large amount of root system that is lost. Irrigate thoroughly two to three times within a two to three week period prior to any root pruning or excavation. This procedure will reduce stress significantly and may allow the tree to take up water for storage, which will aid in its sustenance until new root development begins. Watering will be especially helpful during periods of actual drought. The use of pesticides as prophylaxis, which is later discussed in this article, can also be beneficial in preparation.

Marking the tree’s orientation is important for reference when planting. It is preferable to replant a tree to its original orientation. This will reduce the risk of sunscald to the bark and minimize the expenditure of much needed energy that would otherwise be used in acclimating to the new exposure.

Pruning

My advice on pruning trees for relocation is cut and dried: Keep it limited. When I began working in this field, it was common practice to prune heavily. Often, I would see more than 50 percent of canopy removed prior to boxing. Common horticultural knowledge informs us that the less foliage removed the less adverse impact, and trees will acclimate through the process of abscission as needed. Foliage is necessary for the manufacture of hormones and photosynthesis required for root regeneration.

Pruning specifications have been reduced in recent years to recommend only the removal of dead or diseased wood. It generally takes relocated trees several years to recover from over-pruning. Since the employment of new pruning practices, I have observed a phenomenal change in how trees respond to boxing and relocation. I have seen a reduction in defoliation and faster root regenerated with greater mass. Much advancement has been made in the field of tree moving over the past few years, but none are as significant as the change in pruning practices.

Fertilization, supplements and soils

I have seen little in the way of fertilizers or supplements that provide a noticeable or significant difference in the survival of relocated trees. This opinion is based primarily on my own experiences with products that affect a tree’s survival during the first 30 to 60 days after boxing.

Fertilization and supplements can have an impact on tree performance during the post-planting maintenance period. I have tried many types of so-called miracle products and have not witnessed one miracle yet. I have also inoculated several trees to be relocated into standard sites using various forms and applications of mycorrhizae and have not observed an increased success rate. However, should the tree be transplanted to a site that has been graded or altered, resulting in a sterile or near sterile soil condition, amendments are beneficial. I believe that if the tree is healthy prior to relocation, there most certainly exists a favorable level of nutrients and mycorrhizae in the soil environment.
so if you are transplanting into the same area with the same type of soil, you should be okay.

Usually, amending the backfill for tree planting is not needed. Should a soil analysis reveal toxicity or deficiencies, however, corrective measures would be appropriate. Also, consideration must be taken when dealing with soils of different structures or textures; water percolation and irrigation practices will be greatly affected.

**Cabling/guy wires**

This is an extremely important topic in tree relocation. It can mean life or death to the tree or those nearby. Due to the major root pruning that takes place, anchorage is compromised. For this reason, all relocated large trees need to be guy wired. Typically, one considers installing cables after planting but it is also important to consider safety while boxing and planting trees. In some cases it may be necessary to provide temporary guy wires during these procedures. My experience is that cables should remain in place for a period of no less than two to five years. Maintenance of cables plays a vital role in the success and safety of tree moving. Proper cable installation and maintenance not only insures the safety and well-being of property and people but also the tree itself.

**Planting**

The planting of relocated trees is usually basic. When working with large trees, remember to install guy wires during planting to reduce the risk of the tree falling. In normal planting conditions, the planting pit dimensions will be 1 foot to 3 feet larger around than the root ball and up to 6 inches shallower than root ball depth. Backfill is rarely amended unless required to correct specific problems identified by soil analysis.

The compaction of backfill is very important. It not only increases stability but also affects irrigation by eliminating air pockets. When large air pockets are present, applied irrigation has a high probability of seeking out this space and bypassing the root ball. Conduct a perc test before planting to see if you need to install a drainage system for the planting hole.

**Maintenance/irrigation**

These two areas are the most critical in the success and survival of relocated trees. If nearly 80 percent of the tree’s root system is removed during transplant, the remaining root zone will be extremely sensitive to levels in soil moisture. With the reduction in the tree’s ability to access and take up water, normal watering requirements are greatly altered. Trees that usually survive without water for long periods now require regular irrigation, resulting in an increased risk of soil pathogens. A fine balance must be found between too wet and too dry. This can only be achieved with regularly scheduled service by an experienced tree care professional.

Although the practice of irrigating a tree may sound simple, great effort is required to insure proper soil moisture. It is imperative to check soil moisture by use of a soil probe before and after watering to determine the correct action to be taken; monitoring of soil moisture can be scheduled. Two of the most common problems are over or under-watering.

I have found that the highest danger to relocated trees is over-watering. I would rather see irrigation err somewhat on the dryer side. Over-watering can occur when the tree is either planted too deeply or soil grade has been increased around a tree. Other circumstances associated with over-watering include broken irrigation lines, planting at the base of a slope, and poor drainage. Under-watering occurs most often when the water applied does not percolate into the root ball, which happens most commonly as water sheets over the top of the root ball and into the backfill. Soil watering basins can be used to increase percolation. They must be maintained just inside the edge of root ball to ensure percolation.

I have found mulching to be very beneficial in aiding the regeneration of root growth. Since newly developing hair roots are highly susceptible to desiccation, mulch helps maintain a moist, cool soil condition conducive to new root growth without constant irrigation. One of the key downfall related to maintenance is that few contractors, developers, or homeowner’s budget for post-relocation tree care. Problems will surely arise without a maintenance program, and correction or remedy is often impossible. Most people wait until it is too late before recognizing a problem and calling for help. A high percentage of the failures in relocated trees are maintenance related.

**Pest & disease problems**

Naturally there is an increased susceptibility to certain pest and diseases
associated with the relocation of specimen trees. The best defense is a good offense. Hence, selection, preparation and timing must be strongly considered. Some pest and disease issues can be dealt with by the use of pesticide as prophylaxis, which is especially true in the prevention of bark boring insects. As mentioned earlier, trees undoubtedly become stressed during relocation. Therefore, preventative measures must be taken. The most common disease problem encountered is Phytophthora Spp., a root rot disease usually associated with over-watering. The control of Phytophthora diseases is best achieved by irrigation management, though prophylactic applications of fungicide may be helpful. Many pest and disease issues that arise do not pose a threat to tree health and survivability and thus do not warrant chemical treatment.

Establishment

As a reminder, most of the observations and recommendations in this article refer primarily to the responses of coast live oak. The establishment period of relocated trees varies widely among species. Trees reestablish their root/shoot balance by first regenerating root at the expense of shoot growth. As a result, some trees may have a period of reduced aesthetic quality. This period can be short, providing the tree was healthy and vigorous from the start. My experience is that a minimum of two years or longer is required for establishment of a transplanted tree – contingent upon a closely supervised maintenance program. After approximately two years, maintenance demands are greatly reduced, lessening cost of care.

Trees that have been relocated will require some maintenance and monitoring for the remainder of their lives. At the very least, relocated trees need to be evaluated no less than three to four times a year.

Conclusion

I have been involved with several projects that include the relocation of coast live oak in box sizes up to 18 feet. Many of these projects are over 10 years old and include trees that have performed beautifully and continue to show vigor. In more recent years, with education and industry innovations, some trees hardly miss a beat when relocated. I attribute these successes to selection, preparation, proper pruning, and maintenance. Tree moving is an investment and must not be taken lightly. Not only is the process costly, but long-term maintenance and monitoring must be considered when budgeting. Please remember, too, that large tree relocation includes risk and is usually considered a last resort to save the tree. Tree moving is a benefit to trees and communities, allowing some of our landmark and heritage trees to survive relentless encroaching. Before removing any tree carelessly, consider the possibility of moving it so that it may continue to beautify and enhance our lives and our environment.

Kerry Norman is owner of Arbor Essence, a horticultural consulting business in Southern California. He may be reached at kerry@arboressence.net.
ANSI A300 Update: Transplanting

The ANSI-accredited Standards committee (ASC) A300 met on April 9 and 10, 2003 in Williamsburg, Va. The committee accomplished great deal during this short period. ANSI A300 Part 2 — Fertilization revision had a public review period in late 2002. All comments were considered, resulting in substantial changes to the revision draft. The committee approved the revision for an intended final public review this summer. The committee then worked on drafts for new standards: Part 5 — Management (in relation to site planning, construction, etc.) and Part 6 — Transplanting. The committee finished the first drafts for both of these and approved the first public review periods.

The first public review draft of Part 6 - Transplanting is published below in this month's edition of TCI magazine. If you want to submit a comment, visit the TCIA Web site at www.treecareindustry.org/default.asp?main=content/laws/publicreview.HTML for instructions. Email comments are preferred: Rouse@treecareindustry.com. Snail mail comments can be directed to TCIA, 3 Perimeter Rd., Unit 1, Manchester, NH 03103. Check the TCIA's A300 web pages at: www.treecareindustry.org/default.asp?main=content/laws/a-300.htm to learn more. Keep an eye out for the Part 2 — Fertilization and Part 5 — Management public review drafts.

1 ANSI A300 standards scope, purpose, application, and implementation
60 Part 6 – Transplanting
61 Normative references
62 Definitions
63 Transplanting practices

Annex A Transplanting information

Foreword (This foreword will not be part of American National Standard A300 Part 6)

An industry-consensus standard must have the input of the industry that it is intended to affect. The Accredited Standards Committee A300 was approved June 28, 1991. The committee includes representatives from the residential and commercial tree care industry, the utility, municipal, and federal sectors, the landscape and nursery industries, and other interested organizations. Representatives from varied geographic areas with broad knowledge and technical expertise contributed.

The A300 standards can be best placed in proper context if one reads the Scope, Purpose, and Application. If approved after the public comment period, this document will present performance standards for the care and maintenance of trees, shrubs, and other woody plants. If approved after the public comment period, this document will be used as a guide in the drafting of maintenance specifications for federal, state, municipal, and private authorities including property owners, property managers, and utilities.

The A300 standards stipulate that specifications for tree work should be written and administered by a professional possessing the technical competence to provide for, or supervise, the management of woody landscape plants. Users of these standards must first interpret wording, then apply their knowledge of growth habits of certain plant species in a given environment. In this manner, the user ultimately develops his or her own specifications for plant maintenance.

When approved, ANSI A300 Part 6 - Transplanting, will be used in conjunction with the rest of the A300 standards when writing specifications for tree care operations.

There is a public review period, scheduled for Summer 2003, after which the Part 6 draft may be submitted to ANSI by Accredited Standards Committee on Tree, Shrub, and Other Woody Plant Maintenance Operations - Standard Practices, A300. Committee approval of the standard will not necessarily imply that all committee members voted for its approval. At the time it distributed this draft, the A300 committee had the following members:

Tim Johnson, Chair (Artistic Arborist, Inc.)
Bob Rouse, Secretary (Tree Care Industry Association)

Organizations Represented
American Nursery and Landscape Association: Craig J. Regelbrugge
American Society of Consulting Arborists: Tom Mugridge; Donald Zimar (Alt.)
American Society of Landscape Architects: Ron Leighton
Asplundh Tree Experts: Geoff Kempter; Peter Fengler (Alt.)
Associated Landscape Contractors of America: Preston Leyshon; Debra Holder (Alt.)
Davey Tree Experts: Joseph Tommasi; Dick Jones (Alt.)
Bartlett Tree Experts: Peter Becker; Dr. Thomas Smiley (Alt.)
International Society of Arboriculture: Ed Brennan; John Ball (Alt.)
National Park Service: Robert DeFeo; Dr. James Sherald (Alt.)
Professional Grounds Management Society: Jennifer Gulick
Society of Municipal Arborists: Andrew Hillman; Mike Dirksen (Alt.)
Tree Care Industry Association: James McGuire
U.S. Forest Service: Ed Macie; Lisa Burban (Alt.); Mike Galvin (Alt.)
Utility Arborist Association: Jeffrey Smith; Matthew Simons (Alt.)

Additional organizations and individuals:
American Forests (Observer)
Beth Palsys (Observer)
Fred Deneke (Observer)
Peter Gerstenberger (Observer)
Professor Charles Moore (NFPA-780 Liaison)
Richard Rathjens (Observer)
Sharon Lilly (Observer)
Clause 1 excerpted from ANSI A300 (Part 1) - 2001 Pruning

1 ANSI A300 standards

1.1 Scope

ANSI A300 standards present performance standards for the care and maintenance of trees, shrubs, and other woody plants.

1.2 Purpose

ANSI A300 standards are intended as guides for federal, state, municipal and private authorities including property owners, property managers, and utilities in the drafting of their maintenance specifications.

1.3 Application

ANSI A300 standards shall apply to any person or entity engaged in the business, trade, or performance of repairing, maintaining, or preserving trees, shrubs, or other woody plants.

1.4 Implementation

Specifications for tree maintenance should be written and administered by an arborist.

60 Part 6 – Transplanting

60.1 Purpose

The purpose of this document is to provide standards for developing specifications for transplanting existing landscape plants.

60.2 Reasons for transplanting

Transplanting is performed to relocate landscape plants to meet specific objectives. Horticultural production or silvicultural purposes are exempt from this standard.

60.3 Safety

60.3.1 This standard shall not take precedence over arboricultural safe work practices.

60.3.2 Operations shall comply with applicable Occupational Safety and Health Administration (OSHA) standards, ANSI Z133.1, as well as state and local regulations.

60.3.3 The location of utilities shall be taken into consideration prior to relocating any tree or plant. Utilities include gas, electric, communications, sewer, drainage, and any others above and below ground. Locations include candidate landscape plants, transportation route, and planting site.

60.3.4 The initial assessment/design shall include an inspection of the installation site (proposed and/or existing) for hazards, soil conditions, obstacles, and utilities prior to beginning the transplanting process.

61 Normative references

ANSI Z60.1 American Standard for Nursery Stock

ANSI Z133.1 Arboricultural Operations – Pruning, Trimming, Repairing, Maintaining, and Removing Trees and Cutting Brush – Safety Requirements

ASME B30.9 Slings.

29 CFR 1910, General Industry

29 CFR 1910.268, Telecommunications

29 CFR 1910.269, Electric Power Generation & Distribution

29 CFR 1910.331-335, Electrical Safety

62 Definitions

62.1 anti-transpirant: Material applied to foliage, formulated for the purpose of decreasing transpiration.

62.2 arborist: An individual engaged in the profession of arboriculture who through experience, education and related training, possesses the competence to provide for or supervise the management of trees and other woody plants.

62.3 arborist trainee: An individual undergoing on the job training to obtain the experience and the competence required to provide for or supervise the management of trees and woody plants. Such trainees shall be under the direct supervision of an arborist.

62.4 balled and burlapped (B & B): Plants established in the ground which have been prepared for transplanting by digging so that the soil immediately around the roots remains undisturbed. The ball of earth containing the roots of the plant is then bound up in burlap or similar mesh fabrics

62.5 bare root (B.R.): Harvested plants from which the soil or growing medium has been removed.

62.6 boxed: A method for protecting roots that includes digging a trench, constructing and installing a box around the roots, and then using the box to lift, transport, and install the landscape plant.

62.7 burlap: A loose-weave fabric that is not biodegradable. Types:

62.7.1 chemically-treated burlap: A fabric treated with chemical preservative that biodegrades at a very slow rate.

62.7.2 combination burlap: A fabric with both natural and synthetic fibers that biodegrades at a slow rate.

62.7.3 natural burlap: A material that is 100 percent biodegradable.

62.7.4 synthetic burlap: A material that is not biodegradable.

62.8 caliper: In the landscape or nursery trade, this is the diameter of a tree, measured at a point 6 inches above the ground line if the resulting measurement is more than 4 inches. If the resulting measurement is 4 inches or less, the measurement is made at a point 12 inches above the ground line. In contrast to the method used to measure caliper in the timber industry, which is to make the measurement at a point 4.5 feet above the ground line, or the "diameter breast height" (DBH).

62.9 connector clamp: A device used to secure a piece of cable to either another piece of cable or device such as a turnbuckle or anchor.

62.10 D.B.H. [diameter at breast height]:

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[Image: Miller Machine Works advertisement]
Measurement of trunk diameter taken at four and one-half feet off the ground.

62.11 digging spade: A specially designed shovel used to dig, shape and form a root ball.

62.12 drum lace: A specific pattern for tying that holds and supports the root ball when transplanting landscape plants with the balled and burlapped method.

62.13 eyebolt: A bolt with a closed, looped head used to secure a support cable to an anchor, tree trunk, or turnbuckle.

62.14 foam protection: A pre-formed soft foam sheet, pad, or pipe insulation.

62.15 girdling root: A root that may impede proper development of other roots, trunk flare, and/or trunk.

62.16 grade: A datum or reference level; especially: ground level.

62.17 guy: A steel cable or synthetic-fiber cable system installed between a tree and an external anchor to provide supplemental support.

62.18 installation site: The location to which the landscape plant will be installed.

62.19 lifting chain, certified: A chain certified for a rated load capacity.

62.20 lifting sling, certified: A sling certified for a rated load capacity.

62.21 lifting strap, certified: A strap certified for a rated load capacity.

62.22 percolation test: As used in this standard, a field test conducted to determine site infiltration. The test consists of digging a small hole at the proposed planting site, filling the hole with water, and then timing the rate at which the water drains.

62.23 planting: Installing a plant in the landscape.

62.24 protective material: Fabric or device used to limit injury to any portion of the landscape plant during preparation and transplanting operations.

62.25 root ball: A term used to describe the volume of roots and soil of a landscape plant being moved.

62.26 root collar: The transition zone between the trunk and the root system.

62.27 root pruning: The cutting of roots to meet specific goals and objectives.

62.28 shall: As used in this standard denotes a mandatory requirement.

62.29 should: As used in this standard denotes an advisory recommendation.

62.30 soil amendment: Any material added to soil to alter its composition and structure such as sand, fertilizer, organic matter.

62.31 soil anchor: A device driven, buried, or otherwise inserted into the ground to which a guy is attached.

62.32 spreader bar: An apparatus used to spread the lifting chain or strap to avoid damage to the root ball and crown.

62.33 tensiometer: An instrument for determining the moisture content of soil.

62.34 thimble: An oblong galvanized or stainless steel fitting with flared margins and an open-ended base.

62.35 transplanting: The process of relocating an existing plant in the landscape.

62.36 tree spade: Equipment used to transplant large trees.

62.37 tree wrap: Material, often made of paper, that is wrapped around a tree trunk to protect it from sun injury.

62.38 trunk flare: An area or zone that indicates the junction between the roots of a plant and its stem(s). This area is usually discernable on trees as an increase in width at the trunk base.

62.39 turnbuckle: A device used for tensioing that consists of drop-forged, closed-eye bolts and a drop-forged link with screw threads at both ends.

62.40 wire basket: A pre-fabricated wire mesh designed to wrap the root ball.

62.41 wire-wrapped root ball: A method to support the root ball using a wire mesh.

63 Transplanting practices

63.1 Transplanting objectives

Transplanting objectives shall be established prior to beginning operations.

63.2 Plant and site inspection

63.2.1 A qualified individual shall conduct a feasibility and suitability assessment prior to recommending transplanting.

63.2.2 Specifications for transplanting should be based on the assessment. See checklist in Annex A.

63.2.3 If a condition is observed while the work is being performed, requiring attention beyond the original scope of work, the condition shall be reported to an immediate supervisor, the owner, or person responsible for authorizing the work.

63.3 Tools and equipment

63.3.1 Equipment and work practices that cause damage to the plant, beyond the scope of the work, should be avoided.

63.3.2 Pruning tools shall be sharp.

63.3.3 Lifting chains, straps, and/or slings used to lift shall be certified.

63.4 General

63.4.1 The needs of the individual landscape plants being transplanted shall be considered.

63.4.2 Timing of transplanting

63.4.2.1 Season and phenology of the landscape plant shall be taken into consideration.

63.4.2.2 Transplanting should occur during the optimum time of year for the species.

63.4.3 Transplanting site

63.4.3.2 The percolation rate should be adequate for the species being planted, otherwise corrective action should be taken.

63.5 Transplanting practices

63.5.1 Protection

63.5.1.1 Roots, trunk and crown should be protected from damage during the transplanting operation.

63.5.1.2 Protective materials should be used to minimize damage to trunks.

63.5.1.3 Branches and/or the crown of the landscape plant shall be tied, when needed, in a manner that minimizes damage.

63.5.2 Preparation

63.5.2.1 Compass orientation of landscape plants should be marked.

63.5.2.2 The root ball or box size should be determined according to trunk diameter. Trees should have a minimum of 10 inches of root ball for every inch of trunk diameter.

63.5.2.3 Root pruning should be considered prior to transplanting.

63.5.3 Digging

63.5.3.1 The following shall be considered acceptable methods for preparing a root ball for relocation: Balled and burlapped (hand dug); Boxed; Tree spade.

63.5.3.2 Estimated finish root ball size shall be identified prior to digging operations.

63.5.3.3 Mechanical and hand
digging operations shall start outside the finished root ball size. Exception: Tree spade excavation.

63.5.3.4 Tools used to place finish cuts on roots shall be sharp.

63.5.3.5 Digging operations shall not damage roots within the ball.

63.5.3.6 Root balls should be tapered.

63.5.3.7 Balled & Burlapped

63.5.3.7.1 Burlap used to cover and support the root ball should be tight.

63.5.3.7.2 Drum lacing should be the preferred method of tying.

63.5.3.7.3 Lacing and tying of the root ball shall be done in a manner that does not damage the trunk and root collar.

63.5.3.8 Boxed

63.5.3.8.1 Box sides shall be tight against the root ball.

63.5.3.8.2 Box sides should be fastened together to limit movement.

63.5.3.8.3 Box bottom, if installed, shall be tight against the root ball.

63.5.3.8.4 Box top shall be installed if the box will be tilted during transport.

63.5.3.9 Tree Spade

63.5.3.9.1 Soils should be prepared to accept spading operations.

63.5.3.9.2 Lower crown should be adjusted to accept spade.

63.5.3.9.3 Tree spade shall be properly maintained and free of fluid leaks. Blades should be sharp and aligned.

63.5.3.9.4 The trunk should be centered in the spade.

63.5.3.9.5 Adjustments shall be made for differences between slope of the old and new site.

63.5.4 Lifting

63.5.4.1 Prior to lifting, root balls shall be loosened from soil beneath.

63.5.4.2 The system used for lifting shall be designed to minimize damage to the root ball and evenly distribute weight.

63.5.4.3 Rigging for lifting shall use certified slings, straps, and/or chains. Spreader bars should be used to minimize crown damage and to distribute forces on ball or box.

63.5.5 Transporting

63.5.5.1 Bare root plants shall be treated to prevent drying of the root system or transported in a manner that prevents the drying of the root system.

63.5.5.2 The tree crown shall be protected from drying during transport.

63.5.5.3 Tree(s) being moved should be secured.
63.5.6 Storing the landscape plant before planting

63.5.6.1 Bare root plants shall be stored in a manner that prevents the drying of the root system.

63.5.6.2 Balled and burlapped and boxed transplant landscape plants shall be stored in a manner that prevents stress and conserves moisture.

63.5.7 Planting

63.5.7.1 Digging the hole

63.5.7.1.1 The planting hole width should be a minimum of 1.5 times the diameter of the root ball. Exception: Tree spade holes.

63.5.7.1.2 The sides of the planting hole shall be dug to form tapered edges with narrow end of the taper at the bottom of the hole.

63.5.7.1.3 The sides of the planting hole should be scarified.

63.5.7.1.4 The depth of the planting hole shall not exceed the depth of the root ball.

63.5.7.1.5 The soil at the bottom of the planting hole should be firm undisturbed native soil when transplanting into an established site.

63.5.7.1.6 The digging operation should not compact soil at the bottom or on the sides of the planting hole.

63.5.7.1.7 Drainage should be installed when needed.

63.5.7.2 Installing the landscape plant

63.5.7.2.1 Landscape plants should be placed in the same compass orientation in which they originated.

63.5.7.2.2 Bare root plants shall be installed so that their root system is evenly distributed in the planting hole.

63.5.7.2.3 The root collar shall be installed above grade.

63.5.7.2.4 All materials should be removed from the root collar and the top third of the root ball prior to backfilling.

63.5.7.2.5 Backfill should be similar to the soil at the planting site.

63.5.7.2.6 Backfill amendments, if added, should meet a specific objective.

63.5.7.2.7 Organic backfill amendments shall not be incorporated deeper than 18 inches.

63.5.7.2.8 The backfill soil shall be installed to limit settling of the soil and landscape plant.

63.5.7.3 Supporting the landscape plant

63.5.7.3.1 Guys or other support systems should be installed when needed.

63.5.7.3.2 Guys shall be attached using a method that limits damage to the trunk and branches.

63.5.7.3.3 A minimum of two guys should be installed at an
angle sufficient to support the landscape plant.

63.5.7.3.4 For trees over 10-inch diameter, guys should be installed in accordance with the ANSI A300 Part 3 Tree Support Systems Standard — Guying established trees.

63.5.7.3.5 Guys shall be secured to a ground anchor(s) sufficient to achieve the objective.

63.5.7.3.6 Guys should be taut following installation.

63.5.7.3.7 Guys or other support systems shall be maintained and be removed when they are no longer needed.

63.6 After-care practices

63.6.1 Specifications for care of the landscape plant after transplanting should be provided.

63.6.2 Proper after-care for a minimum of one year should be provided. Specifications or after-care should include: Soil moisture management; Mulch; Integrated pest management; Pruning; Monitoring; Nutrient management; and, Maintenance and removal of guy and other support systems.

Annex A Transplanting information

A-1 Initial assessment

The following shall be evaluated in the initial assessment of the candidate landscape plant(s):

a. general health of the landscape plant(s) including foliage color and density, signs of insect and disease, and past care;
b. structural condition of the landscape plant(s) including the root system, present defects, past injuries, crown shape, and growing environment;
c. species data for tolerance of transplanting;
d. crown shape;
e. size of root ball/quality of root system;
f. foliage color or density;
g. signs of insect disease infestation;
h. present defects from past injuries;
i. effects of pruning before transplanting; and,
j. any other related issue that will impact the estimated rate of success.

A-1.2 Plants with girdling roots, deformed roots, or inadequate root systems shall not be considered acceptable candidates for transplanting.

A-1.3 The following shall be evaluated in the initial assessment of the existing and installation site:

a. above and below ground hazards;
b. access;
c. soil conditions;
d. obstacles;
e. slope;
f. utilities; and,
g. critical structures, i.e. rooftop plantings.

A-2 Specialty transplanting practices

A-2.1 Bare Root

Bare root digging method should be done when the plant is in a dormant state.

A-2.2 Palms

Palm transplants shall be considered a bare root method.

See page 36 for instructions on how to comment on this draft standard.
Ask Jim Benfield of B & T Bobcat Tree Company in Inman, S.C., whether he thinks it’s a good idea to landscape beneath a tree and you’ll get an unpopular response to a popular request. “If you think anything of the tree,” says Benfield, “don’t do it.” He says he has seen too many old oak trees die as a result of careless under-planting.

Provided it’s done properly, it may be possible to create a garden beneath the boughs without harming the tree.

A large tree requires gallons of water each week and will rob the surrounding garden, so it makes sense to avoid those plants that are heavy feeders or require moist soil. Landscape plants will struggle to survive if there is not enough water for both the tree and the plants.”
Vital signs
Lance Wallace, owner of Wallace Tree Care in Glendale, Wis., suggests beginning by taking the tree’s vital signs. “Look at the overall health of a tree first,” he says. “Determine whether there is a lot of deadwood, if there are signs of disease or pests, and what condition the soil is in.” If the tree is under stress or recovering from drought, under-planting puts the tree at further risk.
Also take into consideration the age of the tree. If the tree is near the end of its life expectancy, disturbing the roots may hasten its demise. It is particularly difficult to landscape beneath the sprawling roots of older trees without causing harm. Do your homework on how the species handles root disturbance. Red oaks, for example, do not tolerate root disturbances as well as a willow might.
Assess the tree’s root system to determine how landscaping will affect it. Dig around the tree in places to see how deep and far out the roots run. “Identify how close to the trunk or root zone you’re going to be,” Wallace suggests.

Mulch matters
Mulch is a better alternative to water-hungry lawns, which struggle under the shade of the tree canopy. A thin layer of mulch around a tree offers a number of benefits. It helps to minimize weeds, retains soil moisture, maintains soil temperatures, and adds a finishing touch to the landscape.

The best mulch mimics the tree’s natural environment. For example, opt for a bed of pine needles beneath a pine tree or shredded leaves beneath deciduous trees. “Leave it as natural as possible,” says Richard Huntington, President of Mayne Tree Experts, San Carlos, Calif. “That’s what the tree likes.”

Consider that the forest floor is rich in organic matter that breaks down over time to feed the soil, an example of composting at its best. “You can mix soil and mulch together, which hastens the process of decomposition and recycles nutrients into the tree’s system,” suggests Huntington. He says larger type mulch will break down more slowly and provide a longer aesthetic value.

Limit mulch to a 3- to 4-inch layer around the tree. A depth greater than 4 inches can prevent the exchange of gases and can keep oxygen and water from reaching the roots. In addition, if mulch is too deep it can cause temperature...
changes, interfering with the tree’s climate control. Avoid spreading the mulch up around the trunk.

If possible, extend the mulch out beyond the drip line, recommends John Harrison, owner of Dot Palm Landscaping in Marathon, Fla. He recognizes that it’s not always possible to do so. “Some trees are so huge, you’d take up half the yard with mulch.”

Huntington cautions against building up the grade around the tree to accommodate under-plantings. “If you raise the grade, you may hinder percolation to roots, or hinder the exchange or gases to roots, causing an anaerobic situation.”

Benfield puts it in simpler terms: “A tree is like a person. If it can’t get air and it can’t get water, it dies.”

Edging: the root of the problem

Edging around a tree can present other challenges. When mulch stops short of the drip-line, edging the bed invariably requires cutting through roots. This is particularly troublesome in trees with shallow surface roots, such as swamp maples.

Just how many roots can be safely cut varies from tree to tree. It’s best to evaluate trees on a case by case basis, says Huntington. In general, cut no more than 20 percent of a tree’s roots.

Whenever possible, Huntington stresses, avoid cutting large roots, which provide the majority of life-sustaining functions such as taking up water and nutrients in exchange for carbon dioxide. Just what is considered a large root? “I use a 3-inch root as the defining number,” says Huntington. “But some trees have hundreds of roots smaller than three inches.”

Cutting a large number of smaller roots can be just as damaging, warns Huntington. “It’s not so much the individual roots, it’s the total. If you cut all the way around a tree, cutting 50 or 60 roots, you’re going to have an impact.” He suggests making a clean cut through roots with a sharp shovel or hand saw because: “An axe or other machinery tends to shatter the tree side of the root.”

Time of year also plays an important role in cutting roots, explains Gary Hunisberger, Plant Health Care Manager at Antietam Tree Service in Hagerstown, Md. “The best time to do any root pruning is while the tree is dormant.” Hunisberger defines dormancy as the time from when the leaves fall through bud-break.

“Once the tree is in ‘translocation’ – pulling moisture and nutrition out of the ground – you’re taking a chance by cutting roots,” Huntsberger warns.

Irrigation tricks

Jerry Prim, a commercial landscaper at Complete Landscape Systems in Wichita, Kan., suggests one way to minimize the number of roots cut when installing irrigation systems: “Rather than cutting across tree’s roots,” he says, “the lines can be laid so they radiate out...
from the tree.

Primm cautions that an irrigation system that waters the top 2 to 3 inches of soil each day can cause problems for the tree. "The roots come to the surface for water," he explains.

He suggests watering trees with a long, deep soaking around and beyond the drip line for about an hour or two each week to keep roots growing deeply. "If you get roots of the tree going down into the soil where they belong," says Primm, "you will not have a lot of competition from plants."

Look also to the natural water patterns of the region, advises Huntington. "Native California trees don't get water from April to October." He says improper irrigation can create problems.

What to plant?

Huntington suggests following the tree's lead when it comes to choosing landscaping plants. "Plan everything around when you water the tree," he says. "If it's a native tree used to a certain amount of water, stick with that routine for the flowers," he advises.

When choosing plants, Primm recommends looking to the long term. "When you plant a tree, there isn't a lot of shade. In ten or 20 years, that can really change." Fortunately, a variety of shade-tolerant plants are available.

A large tree requires gallons of water each week and will rob the surrounding garden, so it makes sense to avoid those plants that are heavy feeders or require moist soil. Harrison says landscape plants will struggle to survive if there is not enough water for both the tree and the plants. "You may want to boost up the water, depending on the plants," he says. Or, choose plants that are native to the growing conditions or drought-tolerant.

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Partnering With Landscape Contractors

By Scott Jamieson

Few things are more discouraging for an arborist than getting a call from a landscape contractor to help preserve mature trees on a new site only to find you were the last person called in on the project. With all the site work and accompanying root damage complete, the arborist is often called upon to “fix” things. Trees can be an integral part of the landscape plan, key to the client, yet are often little more than an afterthought in the implementation process.

We know that mature trees add considerable value to residential and commercial sites. The presence of well maintained trees can add thousands of dollars to property values, but if abused or neglected trees can become a serious liability. Arborists can provide the valuable service of assessing potential risk with trees for landscape contractors, as well as helping enhance trees so they contribute to a site’s aesthetic and property value.

Tree care can be one of the most dangerous operations for a landscape contractor to perform. Just recently, a client of ours decided they could handle pruning some small trees themselves. They had an employee out trimming smaller trees with a stepladder and chain saw. The person fell off the ladder and broke both wrists. He was lucky. In another case, a landscape employee was killed when he was struck by the tree he was trying to remove by pulling it over with a backhoe. Safety is an important concern for most landscape contracting firms. Using the services of a tree care firm that focuses on safe operations is a smart way for a landscape firm to manage risk.

Arborists often criticize landscape contractors for never “looking up” – referring to landscapers’ focus on ground-plane plants. The reverse, however, is often very true of arborists – they never “look down” to incorporate landscape and design issues into arboriculture. Magic happens when landscape contractors and arborists work together to bring value to a site for their clients. Nothing is more powerful to a client than experts in their respective fields working together to solve problems and anticipate needs.

Many of our “best” clients at The Care of Trees are landscape contracting companies. The magic occurs when there is mutual respect between our organizations and between our salespeople.
The irrigation system and the walkway were too near to this oak.

Hardscaping

While a ring of cobblestone or boulders nicely edges a bed, consider how much area it takes up over the roots. More risky to trees, though, are hardscaping features like a flagstone patio.

Wallace is currently trying to talk one customer out of putting a patio beneath a tree. “If you hardscape over a tree’s roots, eventually it will fall over or die because the roots won’t be able to spread.”

For example, street trees, like those set in sidewalks or along driveways, do pretty well for a while. But Wallace notes they are planted with the understanding that they probably won’t last too long. He tries to bring this point home to customers. “The homeowner needs to be clear that somewhere down the road, the tree is going to die.”

While a shady spot beneath the maples might seem to be the perfect spot for a patio, a hanging swing might be the alternative that allows both homeowners and tree to comfortably co-exist.

Jacqueline Gately is a freelance writer from Massachusetts. She welcomes correspondence at jgately@magwriter.org.

working to deliver value to the customer. Partnerships between arborists and landscape contractors are not the norm. Many landscape companies perform their own tree care for clients and mistakenly position themselves as competitors of arboricultural firms. In some cases, landscape contractors may not be aware of the value of quality tree care and simply do not recommend those services to their customers because they don’t know what to suggest. In these tough economic times it is very likely that many contractors, in an attempt to retain as much revenue as possible, will not want to include other experts like arborists onto their sites.

Our best relationships with landscape contractors have moved beyond a client-vendor relationship. When we are able to develop a partnership with a firm that is built on trust and a desire to do right by the landscape, the trees, and the client, everybody wins. As arborists, we work on landscape contractor client sites at their request; we serve them as our client. When we can use our expertise on that site to bring added value, they in turn can offer that value to their client. We strive to build that kind of partnership.

Clients, especially commercial ones, want a “one-stop-shopping” experience, which can be misinterpreted as meaning one company to do it all. The reality is that clients want the best value and really don’t care how it is delivered. Many of our landscape contractor clients sell their customers on the fact that they have a team of experts under their umbrella ready to serve. Clients don’t want multiple bills and multiple contact people, but they do want professional quality work at the best value.

When an arborist has a strong reputation in a marketplace, it is often advantageous for landscape contractors to partner with him, especially if trees play a big role at particular sites. On projects where we are called in directly by a client to deal with the trees, we in turn look to partner with a landscape contractor to handle the other landscaping requirements. I have not found a landscape contractor yet who didn’t appreciate a lead for business from our company. We look for every opportunity to involve our landscape contractor clients on the sites where we perform tree care.

You might ask, “Don’t you offend your other landscape contractor clients when you bring one onto a site with you?” We work very hard to give our clients several quality landscape contractors to choose from. We also assess each site and may recommend certain contractors that are best equipped for that particular site or that client’s needs. Our landscape contractor clients are not one-size-fits-all to us, just as we are not to them. If you want referrals and partnerships on site work, you have to give referrals as well. What you give is what you get.

The best partnerships we have developed are those in which both partners are integral to each other’s business. When values are aligned and purpose between the firms is clear, I have seen our sales teams go above and beyond to serve that landscape contractor. The worst relationships we have had with landscape contractors weren’t relationships at all. When we are treated as vendors-only by the landscape contractor, no partnership exists, and service becomes a commodity with price the only issue.

There has to be an alignment of values and organizational purpose for things to really click between the landscape contractor and the arborist. More than anything else, we find this happens at the personal, one-on-one level. Even when there seems to be an organizational alignment, what happens on the front line, between people is what really matters. Business is still about face-to-face, one-to-one trust building.

We are the tree division for many landscape contractors. With others, we are only brought in on specialty jobs, while routine projects may be handled by other tree care firms. In any case, it’s our responsibility to strengthen that relationship by constantly proving that our service and expertise can bring higher value to both the landscape contractor and, ultimately, to the client. Of course increasing value makes happier clients, which in turn generates more business, and that means opportunity for greater profits.

Scott Jamieson is president of The Care of Trees in Wheeling, Ill., and a director of the Tree Care Industry Association.
Understanding Lyme Disease

By Ruth Foster

Lyme disease is the most common vector-borne illness in the United States today. It’s transmitted by a deer tick, whose main host, ironically, is the shy white-footed mouse. However, as the range and population of deer has exploded, so has the incidence of ticks and the disease they carry. In some heavily infested areas on Long Island and Nantucket, half of the population may carry antibodies to the disease.

Arborists who work outdoors – both in suburbia and in the brush and tall grass at the woodland edge (a preferred deer habitat) – are very much at risk for the disease. Understanding the deer tick, plus the latest medical recommendations, can help protect you and your workers.

Many people do not get very sick at first. However, symptoms may occur later and eventually, if untreated, the disease can become chronic and debilitating. Fortunately it usually responds to antibiotics, but the sooner the better.

First understand the tick

(May through July) Immature tiny nymph ticks, the major vector, are most infectious in spring and early summer, especially for one month on either side of the summer solstice (June 21). This is the time window when the most cases of Lyme disease occur.

Female *Ixodes scapularis* tick spreads Lyme disease. Photos courtesy CDC/Jim Gathany

The nymphs are hungry for a blood meal to complete their metamorphosis, and the disease carrying spirochete (bacteria inside the ticks) is most virulent during this time. Not all nymphs are infected, but about 30 percent may carry disease in the spring.

The nymph tick waits close to the ground on leaf litter, tall grass or weeds at a height of around 2 to 3 inches. It attaches to shoes, then climbs up pants legs to skin, often settling into hairy areas. The nymph is tiny; the size of a poppy seed – a little bigger than

**What Do Deer Like?**

<table>
<thead>
<tr>
<th>Rarely Damaged</th>
<th>Poisonous or bad tasting</th>
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<tbody>
<tr>
<td>Barberry</td>
<td>Arum family (calla lily, dumbcane, caladium lily)</td>
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<tr>
<td>Paper Birch</td>
<td>Nightshade (Belladonna and Solanum families)</td>
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<tr>
<td>Common Boxwood</td>
<td>Black Cherry, Black Locust, Laburnum trees</td>
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<td>Russian Olive</td>
<td>Euonymus, Vinca, Lantana, Delphinium, Lily-of-the-Valley, Hyacinth</td>
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<td>American Holly</td>
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<td>Drooping Leucothoe</td>
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<tr>
<td>Japanese Andromeda</td>
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(October, November) In the fall, the adult ticks (about 50 percent infected by this period. But when engorged with blood, it swells to the size of an appleseed. This is the most dangerous time.
now) also are looking for another blood meal to get the protein to make eggs (which they lay the following year). The incidence of disease in humans, however, is much lower. Adults usually overwinter under leaf litter. They may also bite in spring but have mostly finished by May. (Unlike the larger dog tick, the deer tick is not attracted to carbon dioxide exhaled by warm-blooded mammals.)

By fall a brood of newly hatched larvae nymphs are also looking for a blood meal, but most have not yet become infected, so they are not as worrisome as in spring. These nymphs usually pick up the disease from the white-footed mouse, in whose nest they often spend the winter.

To protect your workers

Everyone should always tuck their trousers into their socks to keep the ticks from climbing up inside the pants leg. Also use DEET repellent, particularly on shoes in the spring nymph season. Heavy boots can probably be safely sprayed on the outside with pyrethrum, which lasts for several days or longer. Pyrethrum should never touch the skin.

More prevention

Because the tick has to be attached for more than 24 hours to transmit disease, it’s most important to look for ticks and feel for bumps every single day. If found, pull them off. Use tweezers. Try to get near the head. Pull steadily, patiently and continually until the tick lets go. If the tick breaks, remove all the parts. Alcohol does not make them let go, but is useful for disinfecting the wound after they are removed.

Deer ticks do not transmit disease when dead. (However, the larger dog ticks may transmit Rocky Mountain spotted fever from bodily fluids, even when dead.)

What’s new: treatment for high-risk regions

If an engorged tick is found on one’s body, during this summer solstice season when they are most virulent, the new current recommendation is to get a preventative single dose of antibiotics. This has been shown to lower the incidence of infection rate from almost 10 percent to less than 1 percent. If any symptoms develop later, they must then be treated with at least a 14 to 21 day course of antibiotics. But a 1 percent incidence is better than 10 percent.

One can get Lyme disease multiple times. There is no immunity. The vac-
cine is not being manufactured anymore because of side effects, limited effectiveness and legal problems.

Recognizing Lyme disease

After a tick bite, symptoms usually take three days to a few weeks to appear. But sometimes it may take months, even years, before symptoms develop. Active disease usually begins to appear in July just after the Summer Solstice. The red, ring-like rash, which slowly expands around the bite, is the most common sign. Everyone who gets this ring rash this season and who lives in an area of high risk (see map) should see a doctor about a course of antibiotic treatment. The earlier the treatment, the more effective the control.

About 80 percent of people infected get the tell-tale red rash. Some 10 percent may develop flu-like symptoms: low fever, chills, headache, fatigue, nerve and joint pains (but no cough, runny nose or upset stomach). Another 5 percent may have meningitis or even facial palsy. Some people don’t have any symptoms of illness at all.

But months later, nerve pain or arthritis may develop (especially a knee) which can become chronic. Three antibody tests, one just newly developed, can identify whether one has contracted the disease, though they don’t register for the first several weeks after being bitten. Tests are most useful for late developing symptoms, particularly single joint rheumatic type, to help doctors determine treatment.

Lyme disease was described in 1975 as a new, unusual arthritis found in the sailing port of Lyme, Conn. However “potato knees” had been known for quite a while among the potato farmers in Patchogue, Long Island, located just across the Long Island Sound from Lyme.

What can you do for homeowners to lower the risk?

What services can you sell? Cleanup. Ticks live on the edge of a lawn because that’s where the white-footed mice are. So, when you step off the lawn into the weedy brush, your chance of tick bites increases by 90 percent.

Since the spring nymph ticks hide in this weedy grass and litter, cleaning up the yard, especially under shrubs, trees and even in ground cover will help lower the risks. Also, clear trash, leaves and woodpiles that may offer mouse habitat. Stone walls also harbor mice, so be aware. Mow the grass low until the ticks become less active in August.

Though the incidence of disease is highest in the spring and early summer, it may be transmitted in fall when the larger adult ticks wait opportunistically in brush for a blood meal to pass. They clutch onto deer or hikers or hunters, and even dare to latch onto tree workers.

Cutting or removing the brush and shrubs that deer browse on may discourage their visits and thereby help lower tick populations. Clip shrubs near the house. Deer repellents are useful to a modest degree for protecting plants, but probably don’t reduce tick populations.

Consider planting things that deer don’t eat (poison plants) but be forewarned. Deer will acclimatize to almost any food. It takes just one new generation of Bambis to develop a tolerance to most toxins. Deer browsing of any particular plant depends on population density, alternative food availability and environmental factors. No one plant is always safe under all conditions.

Each region generally has its own deer list. Check your local agricultural college or Extension Service for the recommended plants for your area. In the meantime, here are a few poisonous plants and some other plants that deer generally don’t like.

Thanks to professors Andrew Spielman, Harvard School of Public Health, and Dr. Allen C. Steere, Harvard Medical School, for their erudition and current information.
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<th>Knife Description &amp; Size</th>
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<td>BC1220-BC1250</td>
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<td>Model 90XP, 280XP</td>
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<td>Model 100XP-250XP</td>
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<tr>
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#### Asplundh

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<tr>
<td>12&quot; Drum</td>
<td>KCH30001</td>
<td>Single Edge 12&quot; x 3&quot; x 3/8&quot;</td>
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<tr>
<td>16&quot; Drum</td>
<td>KCH30002</td>
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#### Mitts & Merrill

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Keep Breathing: How you can run "clean" equipment

By Don Dale

What better fuel for the green industry than a clean and renewable one? And what better place to use it than enviro-conscious Seattle? That’s John Hushagen’s thinking. That’s why he’s converted all his diesel-fueled vehicles to biodiesel. It’s not an economic decision, it’s a personal decision.

“Diesel stinks. Diesel pollutes the air,” says Hushagen, owner of Seattle Tree Preservation. Biodiesel is much cleaner, and it suited the way he thought about the world energy situation. “The overriding notion is to think globally and work locally.”

As a result, Hushagen, who started his Tree Care Industry Association member company in 1987, is now using biodiesel fuel in all of his diesel vehicles. He runs three diesel chip trucks, a diesel bucket truck and a diesel crane truck. His company, which primarily does residential tree pruning and removal, switched to biodiesel last December after much thought about how his business impacted the environment.

“It seemed the right thing to do,” he points out, because not only is diesel a heavy polluter and carcinogen, it also is part of America’s dependence on foreign petroleum products. Biodiesel is produced domestically from agricultural products, which are renewable and boost our own economy.

The fuel is basically soybean oil, a byproduct of soybean processing. It is a straight substitute for petroleum diesel, and Hushagen uses it in his trucks without any kind of mechanical modification. His trucks run exactly the same, he’s found.

Biodiesel looks like cooking oil and smells like linseed oil. Instead of the black fumes put out by diesel, biodiesel emits a "light blue" emission. Instead of petrochemical odor, his vehicles “smell like you’re frying French fries.”

One problem, which he was informed of ahead of time, is that biodiesel picks up particulates from the fuel tank left over from diesel fuel and carries them into the fuel lines. This can lead to stalling, and he had to change the fuel filters a couple of times soon after beginning to use it in a vehicle.

“You have to change your filters regularly anyway,” Hushagen says. He has also been informed that biodiesel may have more of a corrosive effect on fuel lines over time, but this isn’t certain. It’s a risk he’s willing to take.

All in all, he calls the switch “painless,” though there have been a couple of drawbacks. One is availability. There are not many distributors in the Seattle area, and the one Hushagen found was all the way across town. It wasn’t on the normal
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For Information, contact John Geissal, Director of Development, TREE Fund, Phone: (217) 239-7070, E-mail: treefund@treefund.org, www.treefund.org
route to most of Seattle Tree Preservation’s jobs.

But he was able to make a deal with the distributor to deliver fuel to him at his yard once a week. This works out well, and his vehicles normally can run an entire week on that tank of fuel. If one runs short, he will route it past the distributor.

The other drawback is the price. Biodiesel, because of its limited availability, costs almost a dollar more per gallon than regular diesel. In April, when diesel was $1.90 in Seattle, biodiesel was $2.85. Hushagen saves some of that in the chipper, because he doesn’t have to pay the 47 cents in road tax.

Biodiesel can be produced from any oil product, or even animal fat, using a process called transesterification, which removes the glycerin. It can be used in any diesel engine straight up, or blended with petrol diesel. It is designated as a fuel source by the U.S. Departments of Energy and Transportation. It meets even the stringent California clean air standards. Recent tests by the Environmental Protection Agency show that biodiesel reduces diesel particulate emissions by 47 percent, unburned hydrocarbons by 67 percent, and carbon monoxide by 48 percent.

For businesses interested in purchasing biodiesel fuel, www.biodiesel.org has a guide to buying it. It also lists distributors that make the fuel available in all 50 states. Some petroleum distributors carry it as an alternative fuel, and a handful of public pumps are available around the country.

The U.S. and Canadian governments are working on legislation to reduce the pump price by offering tax incentives. Hushagen points out that he chooses to pay the higher price for environmental reasons, but he hopes to recoup some of that cost eventually by advertising as a “green” company.

Although he hasn’t noticed a major impact on his bottom line because of the higher price of his fuel, he says he has begun bidding a little higher on jobs to make up the cost. When bidding a job, he emphasizes the environmentally conscious nature of his company. He feels that will eventually pay off with the Seattle market.

So does Scott Selby. His small Seattle company, Four Seasons Tree Care, recently purchased its first diesel truck. With that decision, Selby also decided to use biodiesel fuel.

“The biggest concern was the environment,” Selby says. “You know, we are in the green industry.”

Selby says the decision was somewhat difficult to make, because of the extra expense of the fuel to a small company. But he likes the fact that the truck doesn’t have that nasty diesel smell or the black emissions.

“We feel very strongly about doing things that are environmentally sound,” he stresses, adding that because of the highly educated customer he caters to, he should eventually see returns on his use of clean fuel. His Yellow Pages ad and a sign on his truck advertise his switch.

Four Season Tree Care is also getting the word out through a press release that reads: “No one in business these days can ignore the fact that environmental concerns are a part of the decision-making process of most consumers. By using biodiesel, we’re supporting a cleaner environment and letting the public know that environmental responsibility is at the core of how we conduct our business.”

For John Hushagen, biodiesel was the answer to a number of questions that had nagged at him for a while. They revolved around using a non-renewable petroleum product that not only made the United States more dependent on foreign oil, but also has proven to be a heavy, and dangerous, polluter of the environment.

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www.treecareindustry.org
The industry’s Web site

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57' W/H Hi-Ranger on 1990 Int'l, Flat Bed, Diesel, 5/2, 96k Stock #: 1040 $27,500
75' W/H Hi-Ranger on 1992 Int'l, Utility Bed, Diesel, 7/2, 6k Stock #: 1061 $45,400
55' W/H Altec AA-600 on 1987 F-700, Gas, 5/2, 121k Stock #: 1067 $111,400
60' W/H, OC, Altec, Mat'l Handler on 1995 GMC Top Kick, Forestry, Gas, 5 Spd, 64k Stock #: 1073 $34,400
60' W/H, OC, Altec, Mat'l Handler on 1992 Top Kick, Diesel, Auto, A/C, 159k Stock #: 1074 $31,500
55' W/H Telelect Mat'l Handler on 1988 GMC, 4X4, Diesel, 5 Spd, 104k Stock #: 1076 $18,400
60' W/H, OC, Altec, Mat'l on 1991 Ford F-500, Diesel, 5/2, 51k Stock #: 1077 $27,400
55' W/H Altec, Flat Bed, Mat'l Handler on 1990 Int'l, DT-466, 5/2, 90k Stock #: 985 $26,500
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TREE CARE INDUSTRY - JUNE 2003
Our cast of international storytellers will convene in an enchanted land not so far away, the romantic city of Montréal, Québec

Join ISA and the Québec Chapter August 2-6, 2003, in a celebration of arboriculture old and new at the 79th ISA Conference and Trade Show, the largest gathering of professional arborists in the world. With more than 2,500 in attendance, it not only offers the best in educational programs and 80,000 square feet of Trade Show, it is a networking opportunity second to none. Mark your calendars, prepare your budgets, and plan your vacations now!

CONFERENCE HIGHLIGHTS INCLUDE
- The 27th International Tree Climbing Championship and Field Day—50 of the world’s best climbers compete in this two-day event held in Parc Jean-Drapeau
- ISA Outdoor Trade Show featuring equipment demonstrations on Sunday at Parc Jean-Drapeau and expanded Trade Show hours Monday and Tuesday at Palais des Congrès Convention Centre
- Climbing demonstrations by ISA World Champions Bernd Strasser, Mark Chisholm, Ken Palmer, and Rip Tompkins on the Trade Show Floor
- Three full days of educational sessions with specially designed tracks for commercial, municipal, utility, and research arborists
- More than 60 educational sessions with a total of 24 ISA Certified Arborist continuing education units available
- Welcoming Reception featuring French cuisine, circus acrobats and aerial displays
- Come early for Saturday’s Tree Academy workshops on Plant Health Care by John Ball, John Lloyd, and Dan Marion; Producing Quality Shade Trees by Ed Gilman; and Savoir Lire l’architecture des Arbres pour Mieux les Gérer by Claude Edelin

Register by June 9, 2003, and receive an $85 early-bird discount!
Reserve your seat now ... for TCI EXPO 2003

The greatest tree care show on earth returns in 2003 to its grandest location — Baltimore.

You may not recognize the show if you haven’t attended since our last visit in 1998. You’ll find more floor demonstrations, the best in technical training, and expert, industry-specific business management information that will help you run your company more profitably.

Don’t miss the greatest tree care show on earth, TCI EXPO 2003, Nov. 13-15, in Baltimore.

Preparing your Excellence entry?

The first requirement for an Excellence in Arboriculture entry is photographs. Did you take before-and-after pictures of any project in the past year? Do you have a project coming up in the next few weeks that might test your expertise — if not excellence? Then you have the makings of an Excellence in Arboriculture entry!

Every TCIA member, large or small, works on a project that could qualify in one category. Enter your work today! Entry deadline: June 30, 2003. Call 1-800-733-2622, or go to www.treecareindustry.org to download entry rules and forms.
Baltimore bound – for TCI EXPO

PACT partnerships still available

Partners Advancing Commercial Tree Care is a program designed for companies to offer partnerships to support and help deliver programs to the industry.

A limited number of opportunities are still available for Student Career Days at TCI EXPO. To gain visibility and market exposure to the next generation of industry leaders, consider becoming a PACT partner in TCI EXPO.

We would like to thank the following companies that have already made an investment in their future and the future of the profession:

Wright

We have room blocks at two hotels in Baltimore. Both properties are in close proximity to the Baltimore Convention Center, approximately one block away.

1. Host Hotel –
Baltimore Marriott Inner Harbor
110 South Eutaw Street
Baltimore, Maryland 21201
Phone: (410) 962-0202
Single/Double Occupancy: $169 (please reference TCI EXPO to ensure the preferred rate.)

2. Holiday Inn Baltimore Inner Harbor
301 W. Lombard Street
Baltimore, Maryland 21201
Phone: (410) 685-3500
Single/Double Occupancy: $135 (please reference TCI EXPO to ensure the preferred rate.)

Contracted Airlines for Baltimore:
US Airways
US Airways has been selected as the primary air carrier. Special discounts have been arranged on your air transportation. Plan ahead and receive an additional 5% discount by ticketing 60 days or more prior to departure.

US Airways also offers exclusive negotiated rates for attendees who are unable to meet the restrictions of the promotional round trip fares. Call US Airways’ Group and Meeting Reservat, Office toll free at 1-877-874-7687 and refer to Gold File No. 30142788.

Southwest Airlines
Southwest Airlines has been selected as the alternate air carrier. Southwest Airlines is offering a 10% discount on most of its already low fares for air travel. You or your travel agent may call Southwest Airlines Group and Meetings reservations at 1-800-433-5368 and reference ID Code D0234. Reservation sales agents are available 7:00 a.m. – 8:00 p.m. Monday – Friday, or 8:30 a.m. – 5:30 p.m. Saturday and Sunday, Central Standard Time.

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- 11% lighter than aluminum
- Comfort: Climber Weight Comparison:
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- Stronger than Steel/Stronger than Aluminum
- Easy Gaff Change Out
- Accepts Climber Foot Plate
- Gaff Angle – 16°
- Options:
  - Offset or Straight Stirrup
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Available in Replaceable Pole Gaff & Permanent Tree Gaff

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To find out how to participate as a Career Days partner, call Sachin Mohan at (516) 625-1613.
The penalty for paying "under the table"

Investigators from the California Department of Insurance (CDI) Fraud Division and the Employment Development Department (EDD) arrested a San Francisco roofing contractor on three felony counts of workers’ compensation premium fraud and nine felony counts of payroll tax evasion.

Young II Kim, 48, of Fremont, was arrested and booked into the San Francisco County Jail. Bail was set at $100,000. If convicted, Kim faces up to 13 years in prison, $250,000 in fines and $113,000 in restitution.

The investigation revealed that Kim, owner of Noah Roofing, obtained a workers' compensation insurance policy through the State Compensation Insurance Fund (SCIF) in June 1998. However, it is alleged that from April 1, 1998 through June 2000, Kim paid cash to employees to avoid paying the proper premium to SCIF and underreported his total payroll to EDD. The investigation revealed a total of $75,649 in lost premium to SCIF; a tax audit determined that wages paid to employees were underreported by $175,215.

The San Francisco District Attorney’s Office is prosecuting the case.

Sherrill discounts for TCIA members

Under the agreement, Sherrill Arborist Supply will contribute 2.5 percent of total ONLINE purchases (less shipping) made by confirmed TCIA members to be applied toward dues of members who make purchases. The company will also contribute 2.5 percent to TCIA to be applied toward the development of safety and educational programs for the tree care industry.

For Example:
If you buy $2,000 worth of products from the Sherrill Web site, you will receive a credit from TCIA for a reduction in membership dues by $50; and TCIA receives an additional $50 royalty from the company for development of safety and educational programs. Can you think of any reason why you wouldn’t want to reduce your membership dues and contribute to industry safety — all at no additional cost to you? Neither can we.

Sherrill has a full line of equipment and supplies for arborists. Go online — and be sure to click the “I’m a member” box — at www.wtsherrill.com to start reducing your dues payment today.

Volunteer position available

ASC A300 alternate representative

The TCIA alternate must have the technical training and experience to represent and lobby for TCIA positions effectively. Professional training should meet the minimum equivalent of a 4-year degree in arboriculture or related field plus 100 CEU’s. A minimum professional experience of five years in commercial tree care in the field, in sales, or in any combination of the two that equals five years. Strong support for volunteer activities from the volunteer's employer is a must.

Please submit resume:
Email: Rouse@treecareindustry.org; Fax: (603) 314-5386; TCIA, 3 Perimeter Rd., Unit 1, Manchester, NH 03103.
Equipment needs

Do your crews have all of the equipment that they need to perform their job safely and efficiently? Do they make do with what they have, cut corners, exceed equipment ratings, or use equipment in unsafe ways? Are you so cost conscious that you put your crews at risk?

I can think back to the time when I had my company when I made things extremely unpleasant and a bit unsafe for some of my employees. A crew and I were working out of town on a municipal pruning contract and didn’t leave the other crew everything they would need. We had taken all but one ground saw and all of the gas cans with us. To make a long story short, the second crew ended up using a hand saw to finish felling a tree. They ran out of saw gas just after they had set up the hinge with a bore cut, but leaving several inches of wood on the back strap. It was, at best, inefficient, at worst the crew was put at risk because they didn’t have the proper equipment. It was definitely a bit more fatiguing using a hand saw than using a chain saw.

Have you ever put your crews in this situation? Have you ever discovered your crews didn’t have enough equipment, or the right equipment? Ever send out too few people to finish the job? Have your crews ever seen you “cheat” before, like using the boom of the bucket to move a log, or using too small a rigging line or a climbing line to pull over a tree because you forgot the rigging line?

Spend the money and plan the job out right before you send the crew out the door. You’ll make your crews safer and more efficient. They will be happier and will make more money for you, too.

FMCSA revises hours of service rules

The Federal Motor Carrier Safety Administration (FMCSA) increased driving hours and decreased on-duty hours for drivers of commercial vehicles in their “hours-of-service” (HOS) final rule, which was released April 28.

The regulation includes the following provisions:
- 11 hours of driving time following 10 consecutive hours off duty.
- No driving after 14 hours of on-duty time (a combination of driving and all other on-duty time) following 10 consecutive hours off duty.
- The 60 hour/7 day and 70 hour/8 day limits remain unchanged, but now include a provision that allows a driver to restart the 60 or 70 hour clock after having at least 34 consecutive hours off duty.
- The driver returns to the work reporting location on that day, and is released from duty at that work reporting location for the previous five on-duty days;
- The driver is released from duty within 16 hours after coming on duty (no additional on-duty time after 16 hours); and
- The driver only uses this exception/exemption once every seven consecutive days (unless the driver has complied with the 34-hour voluntary restart provision).

The FMCSA issued the Notice of Proposed Rulemaking (NPRM) for HOS three years ago. The ensuing comments from the spectrum of stakeholders found the proposed “driver type” categorization did not work for a multitude of reasons. The categories created confusion, problems for enforcement, and did not fully meet the objective of accommodating the diversity of the industry. The distinction between an over-the-road truck driver and a local truck driver, however, had fairly broad acceptance among motor carriers. The agency’s own research associated a significant portion of the fatigued commercial driver problem with long-haul, tractor-trailer operations. For these reasons, FMCSA has decided to drop the categories proposed in the NPRM.

The new requirements were published in the Monday, April 28, 2003, Federal Register. Compliance with the new requirements is mandated on Jan. 4, 2004. Until that date, drivers and motor carriers must comply with the standards currently in place.
Ants as Bodyguards

Tree-dwelling ants munch on other insects that are harmful to trees, right? Carnivorous ants, scientists believe, benefit forest plants and trees by eating the leaf-chewing insects that damage them.

According to a University of Utah study, reported in the journal Science, professor of biology "Dinah" Davidson may have chewed some holes in that commonly held theory recently. According to her 20-year long investigations in the rainforest of Peru, the arboreal ant's chemistry looks more like it is feeding on plants!

And the reason for the carnivore to herbivore classification switch is even more startling.

The reason, she believes, is that ants may be tending and protecting sap-sucking insects. The ants, she says, actually protect the sap-suckers and feed off the large honeydew sacks the sap-suckers carry, which are filled with sap. The vast majority of ants, the ones that are super-abundant in the rainforest canopy, are tending sap-sucking insects.

In an e-mail to the Deseret News (Salt Lake City, Utah) from Peru, professor Davidson said that once scientists know that ants are feeding as herbivores, "there are so many new and interesting questions that arise." She hopes the team's results will "stimulate much more research."

Symbol of Eden Withers

If Adam, according to the Bible's Book of Genesis, was the very first arborist, put alongside the tree of life "to dress it and to keep it," then Saddam Hussein may go down in history as the man that finally destroyed the Garden of Eden.

That is, according to a recent Associated Press report, unless the U.N. Environment Program can save it.

At the confluence of the Tigres and Euphrates rivers, in the small town of Qurnah in Iraq, a tree, representing the one that Eve plucked the forbidden fruit from, once flourished in commemoration of the spot that Abraham is said to have visited around 2000 BC. The spot — once surrounded by lush marshland, dense vegetation, and myriad varieties of trees and wildlife — now sits vacant and littered with trash and debris. On a wall surrounding the garden, anti-American graffiti is scrawled. During Iraq's 1980-88 war with Iran, the marshlands were used by Iranian armed forces. Opponents to Saddam and the Iraqi army hid among the reeds, causing Saddam's government to accelerate a land reclamation project started decades earlier to drain salt waters from farmlands nearby. During the last decade, Saddam systematically drained all but 400 of the vast 7,000 plus square miles of saltwater marsh here, and the commemorative tree, once photographed by tourists on the site purported to be the Garden of Eden, has toppled over and now stands dry and lifeless, propped up by a makeshift concrete base.

Water Restrictions Create Flood of Protests

New water restrictions approved in mid-April by the Denver Water Board triggered a tidal wave of protest from arborists, landscapers, sod farmers and golf course operators, according to the Rocky Mountain News.

GreenCO, a coalition of nine landscape-related associations, unsuccessfully lobbied the water board for mandatory water-saving devices in commercial kitchens as well as more liberal time limits on lawn irrigation systems that use rotary sprinklers for reaching larger areas. The board even rejected a one-month reprieve that would allow watering of newly sodded lawns.

Under the rules, residents must limit their lawn watering to two hours twice a week, regardless of the size of their lots. All irrigation control systems must be programmed to receive no more than 15 minutes per zone, regardless of the type of sprinkler heads that are used. Golf courses will be placed on a water budget that cuts in half the amount they used in 2001.

GreenCO presented a Colorado State University 2002 drought study that estimated green industry revenues had dropped by nearly $200 million, 11,600 green industry jobs were lost — a 20 percent drop in employment.

John Gibson, director of operations for Swingle Tree & Lawn in Denver, said an eight-zone limit on automated sprinkler systems, regardless of lawn size, will affect 40 percent of the company's 15,000 metro area customers.

"Now we have to go out and tell them what part of your lawn do you want to save and what do you want to die," Gibson said.
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What's coming in...

- Chain saw advances
- Preventing accidents
- Cool tools
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Annual Buyers Guide

TREE CARE INDUSTRY - JUNE 2003
Friends of the Urban Forest is a nonprofit organization in San Francisco that helps citizens plant and maintain sidewalk trees. Two-thirds of street trees in the city must be maintained by the property owner. "Treeage" (rhymes with triage) is a program where we cruise the mean streets, look for young trees in trouble, and fix them. What follows are some excerpts from the Treeage Files...

9:00 a.m. Another foggy morning. I meet today’s volunteer, Stella. She says she is between jobs, but I don’t ask too many questions.

9:15 a.m. We roll up to a Ginkgo biloba that has been hit by a car and leans into the street – an all-too-common situation. Stella gets the stake pounder while I grab a hammer and a fresh stake. Stake-pounding “thunks” mix with traffic noise and pedestrian chatter. We tie the tree to the stake and it stands upright once again.

The tree next to it is a case of neglect. The screen that protected the tree when it was younger has been left on too long. Branches are growing through it and the wire is now a prison. With wire cutters, we delicately remove the screen, saving as many branches as possible. Twenty minutes later the tree is free. The owner’s attention for five minutes two years ago would have made this unnecessary. We make a note in the log, leave a door hanger on the gate, and move on.

9:50 a.m. A Brisbane box is bound to a stake by electrical tape. Interesting. Duct tape is the usual M.O. for tree repair on the street. At least electrical tape doesn’t take bark off when you remove it. There are no cracks in the tree. Someone was just looking to attach the tree to the stake. We decide to tie the tree loosely, since its trunk is thickening and the roots appear sound. We make a note in the log, leave a door hanger, and move on.

11:40 a.m. We get a tip on a leaning Jacaranda around the corner. The roots do the rumba when we shake the trunk yet the foliage is dense and lush. The usual suspects: bad nursery stock or poor planting practices. It bears further investigation. Meantime, we give the invalid a new set of crutches, cut a small circling root, put down some water, and leave a door hanger.

12 noon. Goodbye Stella and back to the office. The sun is shining and the sky is such a hard blue you could knock on it. We fixed a few trees, made a few friends. All in a day’s work.

Ellyn Shea is the tree care coordinator for Friends of the Urban Forest in San Francisco. In her spare time, she reads way too many detective novels.

Do you have a story
From the Field?

TCI will pay $100 for published articles. Submissions become the property of TCI and are subject to editing for grammar, style and length. Entries must include the name of a company and a contact person. Send to Tree Care Industry, 3 Perimeter Rd., Unit 1, Manchester, NH 03103, or Garvin@treecareindustry.org.
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