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My intent isn't to badger you or remind you of all the details left unattended to during the busy season. No doubt many of you, after reading the above, will say, “Give me a break, Bob. It has been a tough haul for the past nine months. I need some R & R.”

Too many will say, “I’m doing great. My bills are paid. I have money in the bank. I don’t have anything to worry about.”

All that may well be true for your business. I’ve said for years that “Tree men make money in spite of themselves.” That’s not all bad. After all, what’s wrong with success?

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You can’t lose. See you in Charlotte in November!

Robert Felix, Publisher

TCI's mission is to engage and enlighten readers with the latest industry news and information on regulations, standards, practices, safety, innovations, products and equipment. We strive to serve as the definitive resource for commercial, residential, municipal and utility arborists, as well as for others involved in the care and maintenance of trees. The official publication of the non-profit National Arborist Association, we vow to sustain the same uncompromising standards of excellence as our members in the field, who adhere to the highest professional practices worldwide.
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Arborist Chain Saws:
Explore All The Options

by Ken Palmer

Professional chain saws are safer, lighter and more powerful than ever before, but the chain saw is only half of the equation. The knowledge gained through safety and productivity training is equally as significant. It is a mistake to assume that all one needs to operate a chain saw safely and productively is basic instruction. There are over 100 reported chain saw-related injuries in the U.S. every day! Experience is a good teacher, but it can be a very painful and expensive way to learn. Proper chain saw training can save your company very costly lessons, as well as reward you with safer, more efficient operations.

Today's tree care operations depend upon state-of-the-art chain saws to accomplish diverse tasks. Whether a company's focus is on tree health care, utility line clearance, or tree removal, it is very important to have the chain saws that fit your needs.

An Arborist needs a small, well balanced saw that can be carried into the tree tops with relative ease. It must be light, yet powerful. It must be rugged and easy to use in awkward positions, yet it must be affordable. Numerous manufacturers offer small top handle chain saws. In recent years we have enjoyed incredible advances in chain saw ergonomics, power and performance.

Top handle saws are not designed for one handed operation. The top-mounted rear handle design provides better balance, more maneuverability and reduced weight. These features are very important where the operator must work in restrictive positions in a tree. The top handle saw is designed with short wrist movements and extended arms in mind. Light weight and a good power-to-weight ratio reduce operator fatigue.

The Arborist that performs large limb and tree removal needs a larger, more powerful saw that can be used aloft when necessary. Balance, weight, ease of starting and reliability are critical.

The size and power range suggested is 2.5 to 3.5 cubic inches and 3.0 to 5.0 hp.

The medium-size saw is also a great work-horse for the ground crew, though many climbers prefer that saws intended for use in the tree be saved for that purpose in order to insure continuous productivity in the tree.

If large removals are part of your company's forte, it is important to have at least one large chain saw with enough horsepower to carry a long guide bar and chain while maintaining the power needed to finish the job. Every Arborist with large tree removal experience knows the frustration of lost time at the stump due to inadequate saw power or bar length for the finish cut. A 5.5 to 7.5 cubic inch, 6.5 to 9.5 hp saw will provide the power to tackle the longer bar needs.

Never operate a chain saw without an operable chain brake, throttle interlock and chain catcher. These three important safety features are available on most chain saws today, and have been known to reduce the frequency and severity of injuries during tree worker operations. Other feature to look for is an anti-vibration system that isolates the operator's hands from engine and chain guide bar vibration. This can reduce fatigue considerably, and fatigue is a major cause of chain saw operator accidents.

Always use proper personal protective equipment (PPE) - hard hat, eye, ear, leg and foot protection - when operating chain saws.

Having the right saws for the job will save time and energy. It's no secret that the right tools for the job will pay for themselves many times over.

See you at the top!

Please circle 14 on Reader Service Card
Why Wait Decades for a Finished Landscape?

By Mark Garvin

At Environmental Design, moving large trees is a specialty; creating instant landscapes is a successful marketing tool; and designing the world's largest tree spade is a passion.

Arborist Self-Preservation

By Don Blair

A guide to personal protective equipment from the noted author of Arborist Equipment: A Guide to the Tools and Equipment of Tree Maintenance and Removal.
IT'S AMAZING HOW FAST MATERIAL GOES THROUGH OUR NEW CHIPPER.

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See us at TCI EXPO '96!
Up, Up and Away

Crews break down and load the giant tree spade for its next assignment—Lowry Air Force Base in Colorado. The 2,000-acre facility, which was ordered closed, is to become a mixed-use development. The giant spade will help the community save the trees throughout the base that were planted 40-60 years ago.

The cheers have faded, the last anthems played and athletes from around the world have left Atlanta for their own countries. As the sun sets over the Centennial Olympic Park, its dying rays filter through the living, growing leaves of a 100-year-old pecan tree that was plucked, transported and planted by Environmental Design/Instant Shade of Houston.

The image of this tree—broadcast almost daily to every corner of the globe in the aftermath of the tragic bombing—serves as silent recognition that teenage gymnasts are not the only ones who have arrived on the world stage. Environmental Design, a small company with the world's largest tree spade, is making its mark and earning praise in the field of mechanical transplanting.

Environmental Design is owned and operated by Tom Cox, a 40-year-old Houston native with a knack for marketing and a global vision for his business. "We sell results," he explains. "All that matters to us is to have surviving patients. It doesn't matter if people took care of the trees or insects hit them or somebody changed the grade. All that matters is a good result to the end user—even if it is their negligence that caused a problem. We have to find techniques and communications skills that provide results."

Cox credits his father with sparking his entrepreneurial spirit at an early age. One of the elder Cox's many small-business concerns was a nursery. Before they were teenagers, Tom and his younger brother David began selling roses for 50 cents a bunch on the street. Their first day, they cleared $9, and a businessman was born. Before they reached high school, they had 30 neighborhood children working for them, and the brothers were making hundreds of dollars a day selling flowers on street corners.

That early success is never far from Cox's mind, and he credits his young days as an entrepreneur more than his formal
Setting Standards
Among the innovations pioneered by Environmental Design is a steel-boxing technique that maintains its structural integrity while allowing crews to tilt the tree on its side for easier maneuvering under utility lines. The company also developed several techniques for root pruning and restricting roots.

Cultivating Creativity
Beside the 40-story office building that houses BMC Software the owner wanted a place where the software designers could come down out of their glass tower to relax and think. Trees were surveyed by helicopter, then inspected more closely on the ground. The idea was to plant 48 pines on a perfect grid, creating a “zone of contemplation.”

education for his achievements today. While still in college, he convinced several executives at Exxon to invest some of their personal money in a greenhouse operation. He bought 60,000 square feet of space and began growing indoor tropical plants. In the 1970s, sales of indoor tropical plants were booming and the business grew along with the trend. Among his early clients were Safeway supermarkets and some of the major gardening centers around Houston.

This was his first up-close encounter with corporate America, and Cox watched how larger companies operated—especially in the area of marketing. He also discovered for the first time how difficult it sometimes becomes to chase down accounts payable. He and his street-corner employees had always operated on a strictly cash basis.

In 1975, he met a developer who hired him to landscape a new shopping center. Cox had no real expertise in landscaping (“I had never even thrown an azalea into the ground.”), but he agreed to take on the $250,000 contract anyway.

He hired a few high school kids and college buddies, and went to work. His day would start with classes at Texas A & M, followed by several hours of work at his greenhouse. Then it was off to Houston—about 60 miles away—to dig and plant at the shopping center.

“We would work from about three until midnight landscaping that shopping center,” Cox recalls. “Thank God we had a lenient landscape architect that we could push around a little bit while we learned the process.”

To complete the project, he bought a number of oak trees that were moved by a mechanical tree spade. “I watched the process and how quickly it was done. It looked to me that this was a business that would grow. Also, at $400 apiece for four-inch diameter trees, it seemed as if this was the highest profit end of the business.”

Shortly thereafter, he bought his first tree spade, a Vermeer 44. Houston was booming at the time, with residential and commercial development springing up everywhere. True to his entrepreneurial spirit, Cox went about marketing his services in a different way.

“We went to a couple of developers and sold them considerably bigger trees than were being offered in containers or balled and burlapped. We made those larger trees the focal point of the landscape, so that these new developments had a finished-looking landscape. We sold the landscape as a loss leader and the trees as a profit leader. We would plant three or four nice trees on a lot for a good profit, then put the plants and grass in at cost. It worked like a champ.”

Prospective home buyers came out and saw fully landscaped lots. Developers were happy because larger trees made their developments distinctive.

Keep in mind that Cox was still in college at the time. He did run into some resistance from skeptical developers, who wondered who this kid was that promised results. Cox found, however, that the architects were more of a problem than developers.

“The home builders paid for results. You did the work first, and then you got paid. If it didn’t work, they didn’t pay. And that happened. That is how we learned, how we honed our techniques over time.”
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Lakes at Parkway
An old farm outside of Houston had live oak approaching 20 inches in diameter planted on a grid. All the trees would have been lost when the developer raised the grade to drain the subdivision. Environmental Design moved 75 of them with the big spade from one part of the development to another for $2,000 apiece. The developer could have spent hundreds of thousands of dollars on new landscaping instead. For $150,000, this development now has a beautiful, tree-lined boulevard serving as a signature entrance.

Cover Story

Twenty years ago, landscape architects were not fully convinced that mechanical transplantation of large trees worked. Cox credits another Houston native, Steve Clark, with convincing developers to take a chance. Clark started with small trees, then moved on to larger ones. "He really deserves the credit for being the one who first convinced skeptics to try to save larger trees," says Cox.

Clark may have been persuasive, but solid results sold the technique. "We convinced the homebuilders, who were able to sell the houses because the mature trees gave the landscape a very different look," Cox remembers. "Over time, a number of architects came to accept the technology. They set the standard for requiring larger trees on their jobs. Developers saw it as a better bang for their buck over container trees or burlapped trees. We were selling trees for $400 that they couldn't buy in a container for twice that amount."

Also, Environmental Design had established an enviable record for reliability. "People knew that if a tree died, we would be there to replace it," states Cox. In addition to making a profit and running a growing business, Cox discovered one other thing: People like to save trees. "It's not just the rich who are trying to save trees—it's everybody," he relates. "That is why we are spending larger portions of our gross income on research and development, so that we can continue to have a mechanized way to bring down the cost of moving bigger trees."

New Techniques

In developing his unique business, Cox looked at the techniques that had been used in the past. Some he adopted, including round-balling using steel plates and scaled-up versions of hand-digging trees. "We learned the basics that everyone learns in the landscape business—how important the grade is; how trees need to be well drained; proper soil pH; basic nutritional needs. Learning those physiological requirements determines success."

Cox and his crews absorbed the essentials of large tree transplanting by trial and error. ("We killed enough trees to learn..."
Sometimes they had to keep a tree alive longer than expected because a development was behind schedule. They would notice that a tree had grown six inches of new roots while in limbo. Naturally, they tried to determine what worked and what didn't in encouraging a healthy waiting period. Over the years, they developed processes and techniques to improve their chances for success.

"We have the ultimate empirical knowledge," stresses Cox. "We have planted enough trees, in enough different ways, through enough hardiness zones to know what doesn't work. We know the proper techniques, watering, spraying, et cetera.

"There is no strict recipe published by anybody about the proper way to transplant large trees. It's something you have to learn. Even if you follow basic criteria, the site is important to consider, so is the feel of the earth. So much depends on the moisture capacity of the soil and the humidity of the day. There is nothing as good as going out and feeling the root ball to see if the tree needs to be watered again.

"You can't tell someone how to care for trees. You can't prescribe fertilizer from afar. Despite the body of knowledge about the size of roots that can be cut, you have to see it for yourself and learn."

As the business developed, Cox noted a demand to move larger and larger trees. It soon became obvious that a mechanized approach was needed if the cost were to remain reasonable.
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“We developed a reusable steel boxing technique with a self-loading trailer for a project for BMC Software,” Cox relates. “In the past, people would build elaborate wooden boxes that didn’t have the structural integrity to tilt over on their sides.”

With a year to prepare for the project, they used several different techniques for root pruning and restricting the roots, so that they had a virtually containerized tree that would fit into their newly designed steel container. The root regrowth was saved in the transplanting process. They also tried different fabrics to achieve the combination of root confinement and growth that is desired. They tried cardboard, soil separator cloth, plastic and various other materials that had different moisture and air permeability. In the end, they found that plastic worked best.

“We have an angled root pruner that tapers at the same angle as the box,” Cox explains. “We root pruned the trees, then we put the materials that we were testing on the outside of the trench. Finally, we backfilled with the soil that had come out of the trench. The trencher was six inches wide, so we had six inches of potential new root growth in that buffer zone. We were able to test all of our materials and apply the results to our next job.”

Cox and company didn’t make a lot of money moving larger trees at first, but they found that the same physiological principles applied—just on a bigger scale. It became more of a mechanical engineering issue than one of tree physiology. They learned that big trees are very resilient, and after a few setbacks, raised their survival rate for big trees to equal to or greater than the rate for small trees.

Pushing the Limits

As the business grew and Houston’s boom faded along with the oil industry, Environmental Design’s crews traveled to Washington, DC, and the upper Midwest.

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That was when the big tree moving portion of the business really got underway.

In 1993, Environmental Design bought Instant Shade Trees, a Houston company run by another pioneer in the big tree moving business, Al Korenek. Instant Shade came with a great reputation and significant machinery, including the world's largest tree spade.

“They were the cutting edge,” states Cox. “He had the giant tree spade built himself. The next largest tree spade digs a four-cubic-yard ball of soil. Ours digs a 20-cubic-yard ball of soil.”

In a large steel fabricated building that houses the offices of Environmental Design's headquarters outside Houston, the next generation of giant tree spade is taking shape. When finished, the newest tree spade will dig a 35-cubic-yard ball. “We can build the spade,” says Cox with confidence, “but can we get the tree down the road? That will be the challenge.”

The company's first big job in Washington was for IBM Federal Systems. The company was building a new office complex outside of the beltway and the area had 150-year-old trees that were protected by restrictive tree ordinances. The people and the government were not willing to lose those trees for another concrete structure.

Cox has found that though there is often initial resistance to saving and moving large trees, corporate executives usually feel really good about saving trees. By the end, everyone is congratulating themselves and agreeing that it is a wonderful thing.

Environmental Design has had a small role in history. Castle Rock Entertainment is making a movie about civil rights leader Medger Evers. Part of the filming was on location at his house in Jackson, Miss., where he was assassinated. His widow planted a tree there in his memory, and in order for the film to be historically correct, the 24-inch diameter oak had to be moved. It was transplanted to a new memorial and museum that was built in his honor. In the process of filming, Castle Rock wanted the driveway on which he had been slain to be moved as well and then put back after filming.

When the big tree spade hits the road, it becomes something of a road show. Environmental Design takes its specialized equipment down the Interstate in company trucks. Some items, such as cranes, are rented. The crews travel with the equipment, often spending weeks at a time on the road.

“Sometimes, we hire local labor, but we are so particular about how trees, branches...
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and root balls are handled that we prefer to send our own people,” says Cox. “Successful transplanting is surgical. The root ball must be completely intact all the way down to the feeder roots. The slightest bit of structural irregularity results in a less-than-desirable transplant. We are picky. We don’t want someone out there who is yanking roots with backhoes. That is part of the reason why our survival rate for large

Continued on page 17

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Root Balls and Beach Balls

At the Grand Casino in Gulfport and Biloxi, Miss., Environmental Design moved the heaviest tree that has ever been moved—690,000 pounds. The casinos wanted to expand into an area with a prominent canopy of mature trees on the water’s edge. These trees are live oak between 100 and 200 years old. The residents and the city were hesitant to let the hotels expand if it meant losing these trees. A compromise was reached whereby the casinos paid to build a public park and have the trees moved to that park across the street on the beach.
trees is 95 to 98 percent, depending on soil conditions."

Costs

Cox describes big tree transplanting as a "bang for your buck deal." The typical alternatives in the past have been to plant balled and burlapped trees. Now, the industry has matured a bit to where containerized trees are the standard. The alternative that Environmental Design offers is a fully mature tree. Cox sells his services by telling developers that he can deliver a tree large enough to have a picnic under right away.

Environmental Design charges roughly $2,000 to move a 20-inch diameter tree from one part of a development to another. A larger tree can be delivered for $10,000. The truly big projects? Try $50,000 a tree.

Cox argues that this is a wise investment. "It is not uncommon for a developer building an upscale community to spend hundreds of thousands of dollars on brick fences, water features and different types of small trees. We can supply a tree with a 40 foot canopy for $10,000.

"To spend the kind of money it takes to put a mature landscape in place makes more sense than putting a fountain or brick wall or other man-made structure in that place. And trees seem to be as well received."

... and Still Growing

Environmental Design is a family affair, with Tom Cox serving as owner and chairman of the board, brother David as vice president and brother-in-law David Marks as president. The company now has 35 employees, with seven crews roaming the country. And Cox, ever the entrepreneur, has plans to expand. He wants to set up regional centers around the country affiliated with top tree care professionals who know the landscape architects and consultants in their area and who understand the physiological aspects of tree care. His business is growing rapidly, but he doesn't think he has even begun to tap the market's potential. "When I first started in this business, I would go out with a 44-inch tree spade and we would attract a crowd. People just could not believe that we could move trees of that size. Even with the smaller spades that we have—the Big John 80s and 90s—it is common for people to stop and applaud. Crowds always gather to watch, which gives me the gut feeling that this market is bigger than anything we have seen thus far. Not just domestically, but on a global basis.

He hasn't done much business outside of the country, but calls are beginning to come in. "The techniques of tree transplanting are in the Dark Ages in most parts of this country and in most parts of this world. There is a tremendous demand for it in Europe and in the Far East. We will establish a beachhead over there in a logical spot, hopefully affiliated with people who have been in the tree business for a long time. "Our market is limited only by people's knowledge that big trees can be moved."
George Ware, emeritus dendrologist for the Morton Arboretum in Lisle, IL, has donated 27 disease-resistant hybrid elm trees to the city of Macomb and Western Illinois University. Ware has been working on the development and selection of new disease-resistant elm species at the arboretum since the late 1960s.

Associate professor Tom Green, who worked for the Morton Arboretum prior to his current appointment, helped Ware test and screen the new species and hybrids for natural resistance to Dutch elm disease.

"Macomb was hit by the disease in the late 1950's and lost a large percentage of its community forest," said Tim Howe, a certified arborist and community forestry research associate. "Despite the loss of trees associated with the outbreak more than 35 years ago, a surprisingly large number of elm trees managed to survive until last year when the disease hit again destroying more than 300 community trees."

Howe added that several dozen elm trees have already been infected this year as the disease outbreak continues, and a number of residents have gone to great efforts and expense in an attempt to save their favorite shade trees.

"The disease-resistant hybrids are from the Arboretum's research nursery. These trees aren't yet available through commercial tree nurseries. They were developed by Ware from species native to the Far East. Asiatic elms were cross-pollinated with other elm species and tested for disease-resistance.

Macomb mayor Tom Carper, who serves on the state's Urban and Community Forestry Task Force with Ware, stated: "We'll use the trees the way they should be used and they will be well-cared for. This town is interested in its trees, and the residents should be excited over the return of the elm to the community."

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I don't ever want to hear any more whining or griping about safety equipment: “It's not comfortable. It's too expensive. I'm careful, I don't need this stuff.” You're not fooling me, so stop kidding yourself. Arboriculture is not alone as a potentially hazardous occupation. After you read this article, I hope you'll realize that you've got it pretty easy compared to some. Quitcherbellyaching and wear all the right stuff.

ANSI and OSHA standards are very specific about your personal protective equipment (PPE) obligations. PPE refers to the safety equipment that is designed to protect your person, that is, your body, fingers, toes, eyes...

**Head Protection**

Head Protection shall be worn by workers engaged in tree operations. A cloth baseball hat with a chain saw logo on the front does not qualify as head protection. Although safety helmets are generally referred to as “hard hats,” there are actually two types: full-brimmed hats (Type I) and caps (Type II). Caps, of course, do not have a full brim and the shell extends at the front of the cap over the eyes only.

Perhaps inspired by the helmets of World War I, E.D. Bullard invented the hard hat in 1919. The Bullard Company’s “Hard Boiled” logo originated with the first caps, which were made from canvas soaked in boiled linseed oil.

All industrial safety hats must conform to applicable provisions of ANSI Z89.1. Class B hats, which meet the requirements for tree maintenance, provide limited protection by reducing the force of falling objects striking the top of the shell. While Class B hats will provide limited protection in other parts of the shell, they are not designed to provide front-, side- or rear-impact protection. Helmet shell suspensions are usually in a 4-point or 6-point style.

Hard Hat Care Common Sense

1. Avoid contact between the hard hat and electrical wires.
2. Never drill holes, alter or modify the shell or suspension system.
3. When appropriate, use original replacements parts from the manufacturer.
4. Never paint a plastic shell. Paint solvents can make plastic shells brittle and more susceptible to cracks. Aluminum hard hats may be painted.
5. Do not use winter liners that contain metal or electrically conductive material.
6. Adjust headband size so that headgear will stay on when the wearer is bending over, but not so tight that it leaves a mark on the forehead.
7. Do not put anything inside the hard hat. The full clearance between the shell and suspension is needed to help absorb shock in the event of a blow to the head.
8. Inspect your hard hat shell and suspension regularly.

Cleaning

Hard hats should be cleaned only with mild soap and lukewarm water. Use a wet sponge or soft brush and thoroughly rinse with water to remove soap residue as well as dirt.
Keep your hat clean! Who wants to wear a gray, grungy, encrusted-with-who-knows-what hard hat? Do not use solvents, chemicals, adhesives, gasoline or similar substances. If such substances are applied or come in contact with the hat, the impact resistance and other protective properties of the hat may be destroyed. These dangerous conditions may not be apparent or readily detectable by the user.

**Inspection**

1. Always make it a habit to check for cracks, frayed straps and any sign of damage before putting on your hard hat. If you notice any sign of wear or damage, the shell and/or suspension should be destroyed immediately and replaced.

2. Replace a hard hat if hairline cracks appear. These cracks will spread and widen.

3. Ensure that the suspension is in good condition. Its main purpose is to absorb energy. Replace any suspension that has torn or broken threads.

4. Look closely for cracked or torn adjustment slots, frayed material or other signs of wear.

5. Check suspension lugs carefully. Perspiration and hair oils can cause wear. Long periods of normal use can damage the suspension.

If the safety helmet has been struck by a forcible blow, it must be destroyed and replaced immediately, even if there is no visible damage. Don’t ever get mad at a safety helmet that breaks as it saves your head. That’s what it is for. The hat is supposed to split so your skull doesn’t. That’s the whole point.

**Eye Protection**

Charlie Dunn is an old-time tree guy in the San Francisco Bay Area. I like old Charlie, but he’d be the first to admit that safety hasn’t been his prime concern. Once, when roping off a deodora limb, he got caught in the back swing. If you know deodora, you know that there are a lot of dead, pencil-sized sticks along the branches. Well, one of those sticks poked Charlie right in the eye and dug in between the eyeball and socket. I believe he had to take the stick and all to the doctor, but first, he had to get down out of that tree! Miraculously, Charlie’s eye was saved, and I’m pretty sure I last saw him wearing a hard hat and safety glasses. At least I hope that was him.

ANSI Z87.1 is the standard that addresses eye protection. Eye protection is required of tree workers and may be accomplished through the use of safety glasses or goggles appropriate to the working conditions. Safety glasses are now available in an almost unbelievable assortment of designer styles and lens colors. There is certainly no reason now for an
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employee to complain that safety glasses are ugly.

I recommend the use of an eyeglass retention device such as Chums or Croakies with safety glasses. They help keep the glasses in place and help keep the glasses handy until needed. The use of such a device will pay for itself in loss prevention.

As a long-time user of eyeglasses, I can tell you with authority that my Chums have made my glasses 100 percent more comfortable. The temples don't dig into my ears any more and they no longer slide off my face when I'm hot and bothered by eastern humidity. Between hay fever and humidity, I hate August!

Goggles are available with clear, tinted or mesh lenses. Mesh lenses in tree work have some advantages. They won't fog up or scratch. Sight Shields are among the strongest mesh goggles available. They feature stainless steel mesh and polycarbonate frames. Ergonomically designed, Sight Shields have foam padding that forms a gasket-like fit to the face, sealing out nearly all chips. Steven Peacock of Portland, Or., tells me that one of his men was wearing when the time he got hit in the face by a limb. His eye and socket were saved from certain, serious injury. Unless approved, prescription eyeglass users generally need to wear goggles over their glasses.

With all the sawdust, grit and pollen loitering around on the job site, ensure that your first-aid kit is equipped with eye wash solution. A small mirror and a lint-free cloth are also good ideas.

Face Protection

Face protection is not required by OSHA. However, workers engaged in operations such as chipping or cutting brush may benefit from the additional protection afforded. There are visor and face shields that attach to hard hats. Visors are made of clear plastic wire mesh.

Be warned, however, that face shields or visors alone cannot provide adequate eye protection. They must be worn with safety goggles where flying particle hazards exist. Flying particles are not UFOs; they are brush chips, sawdust and the grit that can be kicked up by a stump grinder, chain saw or brush chipper. Be aware of the limitation of any face shield or visor you use. Inspect all shields frequently and replace if worn or damaged.

Hearing Protection

Hearing damage is more likely to occur during bucking operations on the ground than from pruning in the tree. When pruning, the climber might make a power saw cut and then use a handsaw or pole pruner, allowing the ear to recover between exposures. Felling and bucking operations involve longer periods of exposure.
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Hearing protection has been mandated since 1985 under OSHA Noise Exposure Standard 29 CFR 1910.95. Employers have a great deal of responsibility under this regulation. The following review of significant passages is not intended to be complete. The Federal Register contains the entire standard.

Noise, defined as sound that is loud, unpleasant, unexpected or undesired, is more than just annoying and distracting. Noise can cause fatigue, as well as physical and mental stress. Tests have proven that workers who practice effective hearing conservation suffer fewer injuries and less work-related tension.

Your hearing is permanently affected by exposure to noise over time. Permanent hearing loss occurs after lengthy exposure to 85 dB or above. Hearing loss begins with a noise-induced "notch" frequency or pitch of the sound being measured. Depending upon noise exposure, hearing loss can occur in a matter of months or more gradually, over a period of years. As the notch of hearing loss broadens and deepens, the ability to hear consonants is affected, making it difficult to fully comprehend normal conversation. Dating back, as I do, to the Hornelite 775G and the early Asplundh V-8 chippers, I find that although my hearing isn't too far gone, I have trouble hearing people if there is excessive background noise. For example, you'll find me in a quiet corner of a hotel lobby these days instead of in the bar. If you're going to tell me your stories, I want to be able to hear them. I've noticed that loud nightclubs and Euc bars tend to make me nervous these days.

Here are the basics of the Hearing Conservation Standard in plain language.

1. Employers must provide workers with a choice of at least one type of earplug and one ear muff (preferably more). The hearing protector chosen must provide adequate protection for the noise level encountered.
2. Hearing protectors as well as replacement of worn or broken units shall be provided at the employer's expense.
3. Employers must supply hearing protection to the workers whose TWA (time weighted average, eight-hour shift) exposure is above 85 dB.
4. Workers are required by the standard to wear their hearing protection if their TWA is above 90 dB. Employees proven by audiometric testing to have significant
Arborists have several options available for hearing protection. The NRR (noise reduction rating) is crucial to proper selection and the success of your hearing conservation program. If you are exposed to 110 dB, you will require hearing protection with a minimum NRR rating of 20 to bring your exposure down to 90 dB. A target of 85 dB is probably even better.

**Ear Muffs**

Ear muffs provide good NRR ratings (25 to 29 dB) but prove impractical for use with the mandatory hard hat. Muffs have the advantage of being generally more sanitary than earplugs.

The hardhat-muff-mesh visor combination is very popular and practical with arborists. Average NRR is 24 to 27 dB. The muffs help hold the cap in place, and they can be stored up on the helmet when not in use. As discussed under eye protection, most visors are considered by the manufacturers to be face, not eye protection, and safety glasses are still required for common sense and compliance with ANSI Z87.1.

The rapid progress that is being made in the development of safety equipment is

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very encouraging to the user in me and very frustrating to the author, who is trying to keep abreast of daily changes.

**Earplugs**

Earplugs solve some of the problems of proper fit along with a hard hat and safety spectacles. Tests conducted by Bartlett Tree Experts in the early 1980s concluded that earplugs were actually more effective than ear muffs for attenuating the noise generated by tree maintenance equipment.

Because of the unsanitary conditions associated with tree work, middle ear infections are also a problem with the use of earplugs. If you drop a pair in a steaming pile of dog droppings, it's usually a good idea to replace them. A Eucl Man, of course, wipes them on his pants.

Earplugs are classified as being either foam or silicone (or a similar material). Foam plugs, generally disposable, are rolled between the fingers into a cylinder and inserted into the ear; the plug will expand to the size and shape of the ear canal, creating a custom fit with each use. With NRR ratings as high as 33 dB, foam plugs provide the highest level of attenuation.

Silicone plugs are washable and reusable. Manufacturers usually use a series of graduated, flexible flanges to create a seal in the ear canal. NRR ratings for reusable plugs average between 21 and 26 dB.

Both foam and silicone plugs are available with cords or neck straps to help prevent loss when not in use.

**Hearing Bands**

Hearing bands look like a cross between ear muffs and earplugs. Most styles use a silicone plug attached to a plastic or metal band. Hearing bands are often rated for wear behind-the-neck or under-the-chin. A few models may be worn over the head, and others are intended for below-the-chin use only. NRR ratings range between 17 and 25 dB.

**Hand Protection**

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in a tree. It was cold in the fall of 1971, so I pulled on a brand-new pair of white mule gloves and went to work. I had put sharpened Fanno #5 blades in our pole saws over the weekend. A #5 blade has sort of a "shark fin" hook on the back to be used for pulling hangers, not for hanging. I hung it on a branch about six feet above my position and used my handsaw. Knocking it loose with my elbow, I made an instinctive grab for it and missed. Those sharp teeth ripped through the palm of my glove, shredding it. Years later, my palm still tingles when I think about how close I came to serious injury. The fact that I had to buy another pair of gloves never bothered me. Indeed, it was far less expensive and much more convenient than having microsurgery on my hand. My father's practice of equipping all pole-saws with a lanyard in the butt end suddenly made sense. It still does.

**Glove Selection**

According to OSHA requirements, if selection of hand protection equipment is not dictated by a specific requirement, the employer must provide whatever protection is effective against the specific work area hazards.

Identify your working hazards. Are they abrasion, chemicals, cold, cuts, electricity, flames, heat, oils, pinch points, sharp blows, slivers, etc.? The task of glove selection becomes a little more complicated when a given work area presents a combination of hazards.

Traditional arborist work gloves have always been leather. In the old days, before brush chippers, gauntlet gloves were popular. They are less common now and should never be used when feeding a chipper. Also, leather gloves are worthless protection for pesticide application.

High-tech synthetics have also found their way into gloves. Knit Kevlar is used to make extremely wear-resistant gloves. Nylon knit gloves grip-coated with PVC (popularly known as "Gripper" gloves) are very popular with arborists. Alex Bildeaux, Jr., at Tilton Equipment told me that when it gets "Minnesota cold" something happens to the PVC and trying to grip onto a steel bar, such as the handhold on a skidder, is like trying to get a grip on an icicle!

Gripper gloves are fine for climbing and general tree work, but any knit glove is useless against handling thorns. When you are dealing with cold, Thermax liners work very well when used with leather gloves. Dupont Thermax wicks perspiration away from the skin, trapping a layer of warm air between the glove and your skin.

**Chain Saw Protective Clothing**

Proper protective clothing operates on one of two principles: blocking or clogging. This is a highly simplified description, but it's the degree of blocking or clogging that counts.

Kevlar or nylon ballistic clothing relies upon the strength of the cloth to block the chain as the material clogs the teeth. The first chaps in the early 1970s were ballistic cloth and weighed nearly 20 pounds. They may have been effective, but they Continued on page 33
were not very popular in sticky, humid climates.
The other type of clothing uses layers of a loosely woven synthetic fiber that "explode" on contact with the running chain and rapidly jam the teeth and sprocket. Clothing styles are available in pants, leggings, and chaps.

Vests are also available to provide some upper body protection. ANSI Z133.1 strongly recommends the use of leg protection for ground work. Tree companies with established chain saw protective clothing policies have experienced dramatic reductions in chain saw injuries.

Make it a controlled cut in a log—not in your leg! Wear your chaps, watch your stance and maintain your saw.

**The Rest of the Body**

ANSI Z133.1 states that workers shall wear clothing, footwear and gloves appropriate to the work or location.

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**Clothing**

Although shorts are quite common among many friends in Australia, I cannot recommend them for tree work. There are just too many hazards that can scratch, cut or inflame on the average job site. Work pants should be tough enough to resist snagging, and loose enough to be comfortable but not so loose that they will catch on brush and equipment.

**Footwear**

Footwear such as moccasins, stiletto heels and sneakers are not suitable for tree work. The job site is a hostile environment for your feet. You should think of your work shoes as little hard hats for your feet. I have burned through the wrong composition of sole in foot locking only once! In elms and other trees with tight branch attachments, I have had my feet get wedged because my shoe soles weren't stiff enough to resist pressure against the sides. There is nothing like the feeling of standing in a vise all day to enhance the experience of tree climbing.

Remember, no more excuses about personal protective equipment! As Mark Twain said, "Clothes make the man. Naked people have little or no influence on society!"

Don Blair is the sole proprietor of the Sierra Moreno Mercantile Company, an arborist equipment, research and development firm.

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Angry Customers

A step-by-step guide to turning things around

Something has gone wrong. You can see it in the customer’s face, which is turning beet red. She may be raising her voice, or issuing veiled threats. Your knees feel a bit weak at this verbal onslaught and you’re frantically trying to compose a response while keeping your emotions in check.

You could easily encounter this situation. In fact, you probably do every so often. Handling it effectively is easier than you think—if you develop and practice anger response skills. Here’s what they’re all about.

The Beginning

First and foremost, listen. And listen immediately. No delays. And as you listen, remember the triggers that can deepen customer anger: a seemingly uncaring attitude, an argumentative attitude or officious bureaucratic behavior.

As you size up the offended customer, gauge his emotional type: Is he a methodical inquisitor? An avenger? A bureaucrat anxious to catch someone breaking the rules? A righteous victim? Understand his emotional type, and you’ll be able to gear your conversation accordingly.

As the customer speaks, listen with your entire body. Arch forward a bit. Keep your head erect. Gaze at the customer, and nod as he emphasizes key points. At the same time, however, guard against displays of emotion on your part, however upset or angry you may be feeling.

If you should find yourself becoming defensive or angry, count to 10 (yes, this technique really does work) or breathe deeply for a few seconds. After the customer gets the conversation going, signal your willingness to continue: Invite her to sit down or walk out to the tree she is complaining about. This simple action on your part symbolizes your interest in the customer, and sets the tone for a productive resolution of the problem.

The Conversation

Allow your customer to blow off steam if she must. Early in the conversation, let her know that you take all complaints very seriously and that you’re seeking a resolution of the problem. But don’t promise anything at this point.

Picture yourself as an impartial observer. Let your customer know that your immediate goal is to understand the problem, as well as the circumstances that caused it, and then work with the customer to address it.

Continue to listen carefully as you walk through the problem with your customer. When you must answer a question or respond to a comment, speak slowly and thoughtfully. When the customer raises his voice, nod and make a notation on your notepad; this is an expression of your attentiveness. If your customer’s anger persists, offer a subtle reaction to his outbursts—say, by moving your head back slightly.

Remember the customer’s emotional “profile”? Now is the time to use that knowledge. If the customer is angry that some rule wasn’t followed, for instance, you might explore your procedures. If the customer feels her pride was insulted, you might praise and affirm her. Model your communication style in response to the customer.

While you must continue to listen actively, you can relax your body somewhat during this phase of the conversation. Here, you may put the customer at ease for the first time. Continue to acknowledge the legitimacy of his emotions and offer anecdotes about poor service or problems you’ve encountered in the past. Move physically closer to the customer when he relaxes a bit.

If you can, ascertain why the customer is bothered by the problem. A customer who wanted to watch you prune her trees may not be upset about the quality of the work, for instance, but might be angry about having to change her plans because your crews arrived two hours early.

Attacking the Problem

Up to this point, you’ve made no promises to the customer. In fact, you...
may not have said much, preferring instead to let the customer speak. Apologize, if that’s appropriate. Outline in general terms how you’ll go about resolving the problem. If you can offer specifics—such as correcting an error, making an adjustment on the customer’s account, or replacing a shrub—do so, but be sure to under-promise rather than over-promise.

If you can’t firmly resolve the problem, indicate your next step: asking another individual to look into it, for example, or investigating further.

If possible, give the customer options: two or three ways you can address the problem. To most customers, options symbolize power. Or if you have the authority to resolve problems, simply ask: “What can I do to make things right?” While you might not be able to meet the customer’s exact terms, those few words can begin a fruitful negotiation.

If you find yourself unable to resolve the problem to the customer’s satisfaction, ruminate on potentially extreme solutions: dismissing an employee … tearing up the bill … replacing a tree. These suggestions, if presented properly, sound so extreme that even diehard complainers probably wouldn’t advocate them.

A word of inspiration: This stage of discussion is often frustrating and aggravating. But think of it as an opportunity to sell your responsiveness. If you can make a “sale” here, you may end up with a grateful customer for years to come.

Taking Your Leave
The close of your conversation is an opportunity for you to thank your customer for bringing the problem to your attention and creating learning opportunities for you. It’s an opportunity, too, for you to reaffirm the customer-seller bond. A firm handshake, a small gift or a warm invitation to call back anytime works wonders for the relationship.

How’d You Do?
After you leave the customer, take a minute or two to reflect on what you did right and what you did wrong during the encounter. Did you identify the problem quickly? Did you establish rapport with your customer? Did you meet your own complaint-resolution standards?

After assessing your own performance, make a note in your calendar to call or write the customer in another day or two. And note, also, any action you must take to meet promises you made to the customer.

Confronting and addressing customer anger, remember, is a skill. As with any skill, it improves with practice. Look upon encounters with angry customers not as occasions to be feared, but as opportunities to improve your skills and demonstrate to your customers that you’re really as responsive as you claim to be!

Richard G. Ensmann is a freelance writer based in Rochester, NY. He specializes in business topics.
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Root Solutions root barrier is the best method for deflecting tree roots downward away from hardscape. Root Solutions is an instrument to cut the cost of sidewalk repair and provide a legal foundation to avoid liability. According to the U.S. Forest Service, the most desirable plastic for use as a root barrier is polyethylene. The prestige that Root Solutions derives in the marketplace is reinforced by its versatility. The panels can be joined to form a circle around the root ball for new tree planting or snapped together to form a straight line between the curb and sidewalk. To stay on the safe side, your specifications for root barriers should read: Root Solutions. For more information, call 800-554-0914.

With the acquisition of FMC's sprayer product line, Durand-Wayland, Inc., is now turning out a full line of sprayers and accessories. Marketed under the John Bean sprayer name, sprayers are available in 50-, 100-, 200- and 300-gallon tank sizes that are now 50 percent thicker. The modular style DM05, DM10 and DM20 feature rugged five, 10 and 20 g.p.m. positive displacement Bean pumps and a recoil or electric start Honda engine. They are all designed to be skid-mounted in trucks or pulled behind utility vehicles with an optional trailer package. A wide selection of spray guns, hose reels and spray booms are also available. For information, contact: Ray Perry, John Bean Sprayers, P.O. Box 1404, LaGrange GA 30241. Phone: 800-241-2308; Fax: 706-882-0052; E-mail: Sales@durand-wayland.com.

The new Weather Guard aluminum under-bed boxes have been designed to be lightweight and durable. Tools and equipment remain dry and safe inside a storage box made of heavy,.10-inch thick diamond-plate aluminum that has had all seams fully arc welded for exceptional strength. Features include a rotary-style two-position "safety" catch latch system that keeps the door from opening in transit. The door also features a welded on reinforcing channel that increases rigidity and assures a weather-tight seal. Aircraft type cable with wedged fittings support the door when open, or they can be disconnected to allow the door to open into a full drop-down position. Send Inquiries to: Knaack Manufacturing Co., 420 E. Terra Cotta Ave., Crystal Lake, IL 60014, 815-459-6020, Attn: Brad Fagala.

Vermeer Manufacturing Company recently introduced wireless remote control technology to its stump cutter line. The radio remote control system option provides the operator more flexibility when positioning the machine in tight areas and freedom of movement in an operating range up to 100 feet from the machine. Currently available on the SC 1102 and SC 502 gearbox-driven stump cutters, it weighs only three pounds and is powered by a nine volt battery. The device will control the rate of movement of the stump cutter's tongue, the up/down wheel positioning mode and the swing of the cutter wheel in its sweep pattern. The remote control is equipped with an emergency stop control. For information, contact Doug Hundt at 800-829-0051.
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We offer outstanding Pro 91® and Pro-Lite® sprocket-nose bars equipped with 91VG and 22VB low-vibration cutting chain. The combinations are designed and manufactured specifically for the tree-service industry and are available through December 31, 1996 or while supplies last.

Both bars are made of high-strength alloy steel, have slim contours for excellent maneuverability in tight places, and have many professional features for full-time commercial arborists, tree surgeons, and orchardists. Quality, reliability and cutting performance is assured.

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<th>STIHL SAW MODEL NO’S.</th>
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Compare and you'll see! These are top-quality tree-service combinations. Experience why Oregon® is the number one brand worldwide. Available now at Oregon® dealers nationwide.
The Team Approach to Landscape Appraisals

By Lew Bloch

One of the most important factors a plant/landscape appraiser must consider when taking a case is whether he or she is an expert in the particular problem at hand. No one should ever take a case with which he is uncomfortable.

Many cases are straightforward and require only one or two disciplines of expertise, and the appraiser is usually competent in many areas of plant appraisal knowledge.

However, there will be times when the landscape consultant may not be comfortable with portions of the task at hand. Some of these may involve the following: soil testing; tissue examination; chemical spills; real estate values; landscape construction; forest management; erosion control; drainage problems; irrigation systems; and hazard tree evaluation. Of course, other problems may arise that are foreign to the consultant.

Rather than turn down the case because of unfamiliarity with all the aspects of the problem at hand, why not put together a team of experts?

You can be the leader of the team effort and coordinate all of the other experts to direct them to solve the problems and put together the final report.

There are so many experts with so much expertise in our trade association that it would be a shame not to take advantage of their knowledge and talent.

What could be more professional than to have an appraisal that lists a team of industry experts who solved the problem!

Lew Bloch is the ALCA Representative to CTLA

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**Designed To Meet Emerging Standards**
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**Cooling System Choice — Integrated Or Conventional**
You'll discover new levels of application flexibility with the 1011F's cost-effective cooling system options.
It seems as if arborist chain saws make quantum leaps in performance on a monthly basis. Engineers race to develop the best way to lower vibration levels, decrease emissions, increase power-to-weight ratios and lighten the overall saw to ease operator use.

Even though the use of computers to assist the design and fabrication of light-weight, space-age materials drastically improved the basic features of chain saws, they are essentially unchanged in purpose and cost (in relative terms) from the models used by our fathers.

Old timers might not recognize catalytic converters or heated carburetors, but they would acknowledge their usefulness. While the low-vibration models available today require less rugged arborists, they no doubt would appreciate being able to feel their fingers at the end of a long day.

Climbing trees is still a dirty, somewhat hazardous profession. But at least the arborist has a range of chain saws, accessories and protective equipment that helps make the job easier each successive year.
Large Saws

Made for professionals, the Husqvarna Forest & Garden Company’s new 5.4-horsepower 371XP weighs in at just 13 pounds. It features an air injection system that employs centrifugal force to remove sawdust, dirt and other particles from the air before it passes into the filter. The new saw also features the Volt Tech ignition system that changes the timing of the saw as the user’s power demands change. The 371XP also offers a CoolFlo II inboard clutch to transfer power from the engine to the chain without directing excess heat to the crankcase and main bearing.

This year’s newcomer in Jonsered’s big saw category is the 82 cc 2083 Turbo. With 5.9 horsepower from a 15-pound power head, it offers a responsive, high-torque engine. This saw is also a good choice for high-altitude and hot-climate cutting: the carburetor and fuel tank are housed together in a separate compartment, isolated from the heat from the engine.

Medium-Small Saws

The Jonsered 600 models are based on a classic design that offers excellent balance and good ergonomics for easier handling with greater control. The 600 series has insulators between the carburetor and cylinder to reduce heat transfer and ensure reliable performance and restarting.

Jonsered’s chain saws share several performance and safety features across their product line. For example, engineers have invented a Turbo air-cleaning system that separates 98 to 99 percent of all sawdust and debris from the intake air before it reaches the air filter by using the centrifugal force from the cooling fan.

All Jonsered saws have a smooth underside that does not get caught on bark and twigs. A rounded front edge provides a pivot point and support during limbing. The chain catcher prevents the chain from flying backward in the event of breakage or derailment. There is an additional guard for the right hand underneath the handle.

Electrically heated handles keep cold at bay. An electrically pre-heated carburetor is available on some models.

Jonsered handles feature a vibration damping system to ease fatigue and numbness. An inertia-activated, dual-action chain brake can activate the chain brake regardless of the saw’s position.

Also popular with arborists is Husqvarna’s 288XP Lite, a lighter version of the 288XP. With a new low profile top cover, compact front anti-vibration system and lightweight clutch, the 6.1-horsepower saw weighs just 15.9 pounds.

Shindaiwa’s newest, more powerful 357...
Chain & Bar Troubleshooting

Chain and bar maintenance is a critical element in overall maintenance for professional users of today's high speed chain saws.

Stop for a moment and think of it as you trim the deadwood out of that maple or cut that oak for your client's fire-place—about 630 cutters on your saw chain pass one spot on the bar in one second. That means approximately 2,268,000 cutters are passing the same spot in one hour of operation. Given the speed and the light lubrication the bar and chain saw receive, both are bound to wear.

The wear patterns on the bottoms of cutters, tie straps and drive links generally reflect the condition of your bar.

Check your components:

1. If the bottoms of the drive links are worn flat, then the bar groove is too shallow, normally in the tail section.
2. If the bottoms of the drive links are worn concave, the bar groove is shallow in the bar nose. Perhaps the hard tip material is worn off.
3. Worn tie straps and cutter bottoms are the result of bar rails that aren't flat or even.

Have you ever had a chain saw that was incapable of cutting straight? It can be pretty frustrating, especially when you're trying to flush off a huge stump. One of the first things to check for is proper chain sharpness and tension. But the problem could also be in the bar. Uneven bar rails can cause or contribute to other undesirable effects. Here's how you can check for bar wear:

1. Place a straight edge against the bar and cutting edge of one cutter. Force the chain sideways as far as it will go. There should be no less than a 1/16- to 1/8-inch gap between the straight edge and the side of the bar rails.
2. Check that the bar rails are flat and even. Both rails must be kept flat and square with the sides of the bar. The original shape and contour of the bar must be maintained.

3. Bar groove width should never exceed .002 to .005 wider than the gauge of chain being used.
4. Turn the bar over regularly to keep the wear even on both sides.

Sometimes, the time pressures of our job has us looking for expedients—the fastest if not necessarily the best way to "get it over with" and get back to the shop. For chain saw users, there are good expedients and bad ones. Running a dull chain until it smokes to get through the final few cuts is bad. When the wood smokes and the chain starts turning blue, you are heating the chain enough to take the temper out of the metal. That chain will be trouble for the rest of its short life.

Keeping a spare chain in your toolbox that can be swapped out quickly is a much better alternative.

Placing a brand new chain directly into heavy service is not a good expedient.

Break in a new chain at low speed, out of the wood, for about two minutes. Make sure it gets plenty of oil. Stop the motor and check its tension, and if it has loosened, tighten it to the correct tension. Check it again after a few light cuts, and readjust as necessary. Breaking it in this way will greatly prolong its life and enhance its performance.

Reduce wear and prolong bar and chain life by:

- keeping the chain sharp and touching it up frequently.
- filing cutters evenly. Be sure the filing angles are the same on both sides.
- keeping your depth gauges even on both sides of the chain and not filing them below their recommended settings.
- using adequate amounts of bar oil. Oil is cheaper than either a new bar or chain! Don't be tempted to use the cheapest motor oil you can find, either. Only bar oil is formulated to provide the protection that the bar and chain need.
- removing the bar periodically and cleaning saw dust from oil holes and bar grooves. After you reassemble your saw, check that your oiler is working. Run the saw holding the bar tip a few inches from a light-colored object such as a fresh wood slab. You should see oil slinging off the chain almost immediately. If not, check to see that you put everything back together correctly and the oil channels aren't clogged with sawdust.
- tensioning the chain properly, just tight enough to be able to pull around the bar by (a gloved) hand.

Finally, take that saw file and chain wrench out of your back pocket before you jump in the truck for home. Truck seats are worth preserving, too!

We would like to thank Michael Kelly of Oregon Cutting Systems for his assistance in preparing this article.

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The new 357 still weighs just 9.1 pounds, and its 35.5 cc, 2.2-cubic inch engine develops 1.8 horsepower and has an increase in chain speed of at least an additional 1,000 rpm. The engine incorporates an improved reed valve construction that contributes to the saw's low-profile design and high-torque performance. Arborists will find Shindaiwa's newest 357 a professional users of today's high speed top-handle chain saw is tougher than the original released in 1994. The 357, designed by arborists for arborists, now comes with a considerable increase in cutting performance. Its rounded case is equipped with a stronger top handle for easy trimming in all heights of trees. It has an improved secondary retainer for the chain brake support. Optional heavy-duty, anti-vibration mounts that offer more control in some cutting conditions are also available.

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much more efficient tool.

The new Tanaka ECS-3301 top handle chain saw features a completely new air conduction system. The AirForce air induction and filtration system effectively removes particles before they reach the air filter system, which increases performance and prolongs life.

Weighing just 6.8 pounds, the ECS-3301 is the lightest saw in its class. It also contains an inertia-activated chain brake that stops the saw instantly and reduces the chance of serious injury in case of kickback. Also, the safety throttle lock prevents accidental acceleration during idling. For operator comfort, the ECS-3301 has an anti-vibe, floating engine, and its top-mounted handle provides excellent maneuverability and control.

The ECS-3301 contains a 32.3 cc (2.0 cubic inch) 2.0 hp engine; stress relieved and chrome plated cylinder; transistorized electronic ignition; and a heavy duty centrifugal clutch.

Tanaka also recently introduced a rear handle chain saw, the ECS-3351, which has the same features and specifications as the ECS-3301 and weighs 7.5 pounds.

Among STIHL's line of saws are several that have found a following among arborists. The lightest model, the new 020T is specifically designed for arborists and line clearance workers who need high power and low weight. The new saw has seven different technological advances over STIHL's previous 020S model. It weighs only 7.7 pounds, has a 2.15-cubic inch (35.2 cc) engine. It is equipped with an attachment ring, single level master control (a first for a top-handle saw), side-access chain tensioner, lifetime-warranted electronic ignition system, anti-vibration system, translucent fuel tank and Quickstop inertial chain brake. It also features an Ematic guide bar, which when used with an adjustable chain oiler can reduce bar oil consumption by up to 50 percent.

On those cold winter days, the new STIHL 036 Pro Arctic chain saw reduces the possibility of carburetor icing by providing carburetor heating designed to

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From Poulan/Weed Eater, the Poulan PRO 190 Arborist is designed especially for tree care professionals. At nine pounds (dry weight without the bar), this is the lightest-weight Poulan PRO tree saw. It has a powerful 2.3-cubic inch/38 cc engine that generates a maximum rpm of 11,000 and features a DuraChrome cylinder for longer engine life. Running times are also improved with a 6.5-ounce bar and chain oil chamber and a 11.5-ounce fuel tank. Other standard features include a 14-inch reduced kickback bar and chain, an automatic oiler, an inertia chain brake and a rope ring.

Olympyk's saw designed especially for professional arborists, the 935DF, features a lightweight design and easy handling. This model includes a chrome-impregnated cylinder, dual counterweight, ball bearing-mounted crankshaft and an adjustable automatic oiler. It also features an inertia-activated chain brake for optimum safety and a five-point anti-vibration handle system for cutting comfort.

The veteran of Olympyk's chain saw line, the 264F Deluxe, is popular with arborists who appreciate its good torque under load. The 264 has a manual chain brake and an adjustable automatic chain oiler. It also features a rubber-mount anti-vibration system for comfortable operation.

Protective Apparel

OSHA regulations, less expensive fabrics, more manufacturers and increased volume have lowered prices for safety apparel. And it has become more comfortable in the process.

Changes and improvements with protective apparel are ongoing. Many manufacturers are surpassing government standards and increasing comfort for users. Unlike the bulky, hot pants of old, new fabric and improved ventilation make them cooler for the user.

When deciding which items to buy, remember: Your body deserves quality. Several things help distinguish quality. Gear that meets ANSI standards and UL classifications will be labeled. Look for UL classified labels on pants and chaps and an ANSI stamp on the inside of helmets.

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TREE CARE INDUSTRY - SEPTEMBER 1996
Expiration dates are stamped on some apparel. For example, a plastic helmet exposed to UV rays won’t be as effective over time as it was when new. Some helmets become obsolete after a year or two. Even one of the best materials on helmets, ABS Polymer, will break down after a few years. Expiration dates are helpful to insure a helmet stored in someone’s garage is reliable when the user needs it most.

Pants or chaps that are UL classified must do at least one of two things: Stop the chain on a running saw, or prevent the saw from cutting through for at least 1 1/2 seconds with a chain moving at 3,000 feet per minute.

On chaps, an APA class A label also requires four inches of additional padding on the left side of each calf, which is the most likely place users might cut themselves. Chaps have become lighter in design and on the wallet. If you gave up wearing chaps years ago because they were so uncomfortable, you should give the new breed a try.

Complete protective gear for chain saw users includes chaps or pants, helmet systems, hearing protection, boots, gloves and glasses. Jackets with shoulder and chest protection are another option.

Protective Wear

STIHL offers a complete line of protective wear, including gloves, hard hats, safety goggles and boots. Orange and green camo bib or apron style chaps feature attached suspenders with quick-release buckles, a full bib zipper pocket, pencil pocket and an oversized front shell pocket. One size fits all up to 56 inches, with 12-inch extender. All STIHL chaps, leggings and pants are made with Engtex cut-retardant material and meet APA standard 92-A-12 and are UL classified.

STIHL’s head gear is available with either nylon or metal fullface screen. Adjustable suspension and wide ear protector cushions provide a comfortable fit.

Protective leather boots are sewn with two layers of 352 woven Kevlar. The steel-toed high boot is treated with silicone to repel moisture. The waterproof rubber boots sport steel-toed protection and layers of cut-resistant nylon.

A new clothing line, designed especially for arborists and tree care professionals, will soon be available from Husqvarna Forest & Garden Co. The new line includes two types of chain saw protective pants, a shirt and footwear. The protective bib overall design does not interfere or compete with arborists’ climbing belts and harnesses. Quick-adjust shoulder straps and easy access side panels provide comfort and convenience during use.

Both new arborist pants are made with warp knit hybrid chain saw protective ma-
Chain Saws

Accessories

terial and a Caribou fabric shell. This 300 denier Cordura nylon blend is stronger, breathes easier and is more water resistant than most shells.

The Cordura blend works to repair small thorn-sized punctures and holes, yet it offers better durability per weight than cotton. The stitching is sewn in a pattern that allows for easy bending of the knees during climbing and also prevents the pants from pulling at the waist.

Both pants exceed APA class A requirements, which require four inches of additional padding on the side of each calf. This additional padding wraps around the entire calf and extends to the crotch area. Better ventilation in the crotch and pocket areas improves air circulation and comfort, and snapping zipper keepers on the legs help reduce snapping during climbing. The arbor pants come with zippered front and rear pockets to hold arborist gear.

Based on professional arborists' requests and testing, Husqvarna's flat-sole arborist boots are designed for climbing and foot locking. The boots are made with a Polymer Barrier for chain saw protection and full-grained oiled tanned leather around the ankle. The boots also include the Ultec 2000 non-metallic safety toe that meets ANSI Z41 PT91 standards for impact and compression protection.

Although it is non-metallic, this safety toe offers the same protection of steel-toed boots with 1/3 less weight, another benefit when climbing while using a chain saw.

The front and instep areas of Jonsered's logger safety boots have approved chain saw cut-resistant materials, which extend down to the CSA grade 1-approved steel toe cap. The boots are approved according to international safety standards. Boot soles are made of oil-resistant material, with a deep tread that gives a sure footing in the forest or country.

The shell of the helmet is made from age resistant HD Polythene, which has a high resistance to UV radiation. The fluorescent color is clearly visible in the woods. The complete helmet meets or exceeds international safety standards.

The mesh visor has a large surface area, with a wide viewing range. The mesh weave provides the best combination of protection and good vision. Should the chain cut through the fabric, the fiber material will become caught in the chain and the drive mechanism, stopping the chain.

The "built-in chain brake" in the safety pants, consists of several layers of material under the outer fabric.

Shindaiwa offers a safety helmet that is really a system for head, face and hearing protection. The helmet is made of durable, high-impact nylon, and 23dB NRR earmuffs fit the user with constant, comfortable pressure. Plus, the nylon mesh face shield ventilates in hot weather and...
Speciality carbide chains from Rapco eliminates fogging in cold weather.

Chain Saw Attachments

A carbide saw chain that looks like the standard chain—except that a carbide insert is fitted onto the clutter—is manufactured by Rapco Industries, Inc.

A regular chain saw must be sharpened at least once per cord of wood cut. With the Rapco Carbide Saw Chain, sharpening would be needed once per 20 to 25 cords. Carbide chain is not often used in general woodcutting operations because it costs slightly more than conventional chain. However, it is unmatched in its ability to cut wood that may contain nails or other chain blade obstacles.

Speciality carbide chains are available in any pitch, from 3/8-inch low profile to 1/2-inch, and in standard, skip and double skip configurations. Most of the company’s sales are in .404 pitch, since bigger chains seem to withstand abuse better.

Continuing development of carbide technology is a basic concern for Rapco, but ceramic tipped chain is seen as a possible future breakthrough. Oregon Cutting Systems has recently begun manufacturing low-vibration versions of its 3/8-inch pitch and .325-inch pitch cutting chains that are popular among tree workers. Cutting performance is not diminished by the low-vibration modifications. Changing the shape of the bottoms of the links allowed levels of impact between chain and guide bar to be reduced.

Oregon 91VG chain is the low-vibration version of the long-popular 91SG, a special 3/8-inch pitch low-kickback chain intended for use on small saws up to 2.5 cubic inches (41 cc). For saws using .325-inch pitch chains, tree care workers now get low-vibration performance from Oregon’s 20, 21 and 22VB chains. These chains are recommended for saws from 2.3 to 3.5 cubic inches (38 to 58 cc).

Small-saw bars with big-bar features can be found in the Pro 91 and Pro-lite lines of Oregon bars. Pro 91 bars are specially built for use with the Oregon 91 series of 3/8-inch pitch chains (91SG, 91S, 91VG, 91VS) and are available in 12-inch through 16-inch lengths. Pro-lite bars are often preferred where heavy commercial demands are placed on small to mid-size saws. Pro-lite bars can be used with .325 inch-pitch or 3/8 inch-pitch chains and come in 11-inch to 24-inch lengths.

An all-new narrow-kilf bar-chain system called Micro-Lite with similar low vibration characteristics is also available from Oregon. One advantage of narrow-kilf cutting is that less power is required from the saw. Micro-lite 95VP chain is a .325 inch-pitch chain for saws 2.2 to 2.8 cubic inches (35 to 45 cc). For arborists, Oregon recommends the use of Micro-Lite Pro bars, built with the same materials and processes as other Oregon professional bars.


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Equipment Adapted for New Uses

By Neil F. Mitchell

I’m writing to tell you about some techniques/equipment that I’ve used successfully for the past 10 years that may be useful to others in the business. For the record, I’m a 56-year-old retired Marine Colonel, a Certified Arborist and have run my business full-time since 1988. I still do all the climbing.

A. First, for removals, which is the bulk of my business, I use a six-foot long, 1/4-inch cable with safety clips on each end as a lanyard while climbing. The six-foot length is adequate for about 90 percent of the trees we take down in this area. This is the functional equivalent of a wire core flipline, only without the rope covering. The precaution for using it would be the same: Stay clear (meaning more than 10 feet) from electrical conductors, and inspect the wire frequently for fraying and fatigue, particularly at the points of attachment to the safety clips.

Once in position to make a cut, I snap in with a six-foot length of light chain fixed on the left with a screw lock and on the right with a steel carabiner. This is obviously easily adjustable and can’t be cut with a saw. Again, stay clear of the conductors. Lanyards must meet the minimum breaking strength requirement for climbing line of 5400 lbs., regardless of what they’re made of. Carabiners used to support a climber must be double locking to conform with ANSI Z133 requirements.

B. I also use a padded gear sling, a length of 1/2-inch line and locking carabiner to carry my saw into the tree. This arrangement is comfortable and handy. Suspending the saw just below my feet keeps it out of the way while climbing and gives enough line to reach out and make a cut. Padded gear slings are available in any mountain climbing equipment store or catalog.

C. For years, I’ve use a piece of 1/2-inch or 5/8-inch line and two or three carabiners as a “false crotch.” The same sling tied around the bottom of a tree can provide additional friction to lower larger limbs. This technique is fast and safe for at least 75 percent of the limbs we have to lower. For bigger material, I use pulleys and a T-shaped lowering device.

I know that anyone who has ever climbed a tree is an instant expert! Some may disagree with my techniques or gear use, but this equipment has worked efficiently and safely for me for many years.

Neil F. Mitchell is the owner of Mitchell Tree Service, Inc., of Woodbridge, Va.
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September 12-13
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Contact: 517-482-5530

September 16-18
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Contact: (206) 784-1945

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Carbondale, IL
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September 25
Hampton Roads Agricultural Research and Extension Center, Virginia Tech
Annual Field Day
Virginia Beach, VA
Contact: Dr. Bonnie Appleton 804-363-3906

September 26-27
SC Urban & Community Forestry Council
Annual Urban Forestry Conference
Holiday Inn, Beaufort, SC
Contact: Joel Felder 803-896-8864

October 3-4
ISA/Mid-Atlantic Chapter
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Contact: Gene Dempsey 954-475-4120

October 8-9
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October 9-12
American Society of Consulting Arborists
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Westin Hotel, Seattle, WA
Contact: 301-947-0483

October 20-22
N.E. Chapter, ISA
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As access to the Internet expands, we will feature some of the new Web Sites available to readers interested in learning more about the green industry. This month, we highlight the Cummins Engine Company’s new home page on the World Wide Web.

Cummins, a leading producer of diesel engines and components, has an innovative site with more than 170 pages of information.

Features include “a visit” to the Customer Assistance Center, product updates, the latest engine ratings and tips for engine maintenance. A section highlighting high-horsepower truck engines opens with a shot of a western boot hitting a truck’s throttle pedal. The Industrial Market Home Page provides product information for each of its markets with groundbreaking effects like construction-site sounds. The sound of a crashing wave welcomes you to the Marine Home Page. Cummins’ Internet location is http://www.cummins.com.
It is common sense that electric wires can be hazardous to anyone doing tree work. OSHA Standard 1910.331 states that only qualified employees can come within ten feet of an overhead energized electrical conductor. Plus, OSHA Standard 1910.269 clearly defines who is legally permitted to work within the ten foot boundary. Finally, ANSI Z133.1 dictates very specific training and operational requirements that all tree care personnel need to follow for safety's sake.

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The National Arborist Association
P.O. Box 1094, Amherst, NH 03031-1094 • Phone: 1-800-733-2622; FAX: 1-603-672-2613

*RETAIL: $135.00 per enrollee; MEMBER DISCOUNT PRICE: $85.00 per enrollee. If ordering, please include a list of enrollees.

For the first time with the Consumer Credit Protection Act of 1968 – which launched Truth In Lending – creditors had to state the cost of borrowing in a common language so that customers could figure out exactly what the charges would be, compare costs and shop around for the best deal.

Since then, "fair" and "equal" credit regulations outlawed unfair discrimination, required that consumers be told why credit is denied, let borrowers find out about their credit records, and set up a way to settle billing disputes. In assessing your credit worthiness, creditors may examine your income, expenses and collateral, but your gender or race may not be used. And creditors may not delay your application on those grounds.

If The Answer Is "No"

Under the Equal Credit Opportunity Act, you must be notified within 30 days whether your loan has been approved. If credit is denied, a notice in writing must explain the reasons why. If you are denied credit, be sure to find out why. It may be that the creditor thinks you have requested more money than you can repay on your income. It may be that you have not been employed or lived long enough in your community. You can discuss different terms with the creditor and ways to improve your credit worthiness.

If you're turned down, find out why and try to clear up any mistakes. Remember, even if a bad credit report is accurate, you may wish to have an explanation of your side of the story placed in the file.

Check Your Records

Before you apply for a loan, make sure credit bureau records are complete and accurate. It is not uncommon that someone with the same name has bad record information on your file. The Fair Credit Reporting Act says that you must be told what is in your file and have any errors corrected.

If a lender refuses you credit because of information in your credit report, you have a right to the name and address of the agency that keeps your report. Then, you may request information from the credit bureau. You won't get an exact copy but you will at least learn what's in the report. The credit bureau must help you interpret the data, which is often confusing for. Any error must be investigated by the credit bureau.

If you're questioning a credit refusal made within the past 30 days, the bureau is not allowed to charge a fee for your information.

If your financial position has improved in recent years, you may wish to check to see if old, negative information still appears on your records. There is a limit on how long certain kinds of information may be kept in your file:

- Bankruptcies must be taken off your credit history after 10 years.
- Suits, judgments, tax liens, arrest records and most other kinds of unfavorable information must be dropped after seven years.

Your credit record may not be given to anyone who does not have a legitimate business need for it. Stores to which you are applying for credit or prospective employers may examine your record; curious may not.

Is Retirement Nearby?

Business owners and employees can now use the Internet to request records of their past earnings and estimates of their future Social Security benefits under a range of wage and retirement-age scenarios. After verifying that the request has been made by the beneficiary, the U.S. Social Security Administration sends the records by mail. Individuals will soon have online access for viewing their records. (Records can still be obtained by completing a paper request form, which is available by calling 1-800-772-1213.) The Internet address of the Social Security Administration is http://www.ssa.gov
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Please tell these advertisers where you saw their ad. They will appreciate your patronage.
It was a cold blustery day in March when we pulled up to the job site—a wooden bridge that had recently been constructed over an oxbow of the Dupage River in Lisle, Ill. The problem was obvious: A mature cottonwood had been overlooked during construction, and it was leaning from the riverbank at an angle that pointed right down the center of the bridge. The cottonwood had to be removed.

Since valuable plants surrounded the tree, the tree had to be topped before we could consider felling the trunk.

This would pose no problem for me, as I was a groundsman. To this point, my tree climbing experience had been limited to lindens, maples and locusts, trees with numerous scaffold branches. My supervisor would always top the tree, and I would chip it. But on this day my supervisor announced that he had hurt his back the night before and couldn’t climb. He asked for volunteers.

Knowing that my supervisor would be leaving the company soon, I hesitated only momentarily before deciding that this was my opportunity knocking at the door.

“I’ll go up,” I said, then swallowed hard. With spikes, saddle, flipline, climbing line and pull rope, I ascended the tree. It felt like 30 to 40 feet without a branch before I reached the lower branches of the canopy. The wind was whipping at this height. My knees were shaking. This was no silver maple. This was gut-check time.

I tied in the first good crotch and heaved up the chain saw. It seemed heavier than a sandbag. I began to climb a bit over my climbing line to position myself to cut the tree. I felt above me and discovered a hole in the union of the next crotch up. I peered in and there all fluffed up warm and cozy was a raccoon sound asleep.

“There’s a raccoon up here,” I yelled down, hoping not to wake him. The crew below me, who looked like stick figures from such a height, conversed among themselves. All I heard from below was indecisive mumbling. It was my decision.

Raccoons are about as common as dandelions in our area, and they would never qualify for the endangered species list. But I did feel a certain respect for this animal that calls a tree home. Nevertheless, the tree had to go.

I yelled down to the crew, “We can cut it now or leave it until after winter hibernation ends, but I will never climb this tree again as long as I live.” I didn’t think I could ever do it again.

The boys tied a running bowline onto the pull rope and sent it up. I fired up the chain saw. The wind was whipping as I put in a wedge.

“Please don’t wake up Mr. Raccoon,” I thought as I put in the back cut. The boys gave a slight tug on the pull rope and the entire crown of this cottonwood, sleeping raccoon and all, went crashing into the Dupage River.

The leader I was tied to rocked like a horse. I let out a yell of relief that could be heard for miles. I looked down into the river and up popped the head of the raccoon. He looked straight back up to me. We locked eyes. I swear we did. He turned around, swam to shore, shook off the water and fled into the forest.

“Sorry for the very rude awakening, old buddy,” I thought, “but I am just elated that you and I both survived this day.”

Gary L. Grisko is a foreman for the Village of Addison, Ill.
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The risks you face every day aren't like those of other business owners. That's why you need an insurance program that was specifically designed for arborists.

One that covers pesticide and herbicide applications. Workers' compensation. Property losses. Liability claims. Commercial automobile losses. And everything else you'll find covered in this cost-effective insurance program from ITT Hartford.

See why this customized program has earned the endorsement of the National Arborist Association. And the trust of so many arborists like you. Simply call or have your agent call us at 1-800-533-7824.

Availability of coverages may vary by state and is subject to underwriting approval. Examine the policy for exclusions, limitations or conditions that apply.

See us at TCI EXPO '96!

No One's Better Prepared for Tomorrow.

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THE BEST THERE IS
Introducing 16-Strand
Samson BlueStreak™

An all new 16-strand climbing line which is truly a breakthrough in rope design. It is constructed with our newly developed "ProGard Finish-Tension Process".

At Samson, we've spent a lot of time listening to the people who have strong ideas about what they want in a climbing rope: professional arborists. What we learned lead to the development of the highest quality 16-strand climbing line you can buy. Extensive field testing indicates that, even brand new when most climbing ropes are slippery, BlueStreak was easy to climb. Exceptional strength, high visibility and extreme durability make BlueStreak the professional's first choice. It is ideal for the "footlock" climbing technique and is available in popular lengths with eye splices as well as short "split tail" lengths.

Firm and round, it holds knots exceptionally well, and the braided construction keeps it non-rotational for great control. The distinctive color pattern makes climbing line identification quick and easy, for increased security on busy job sites.

You now can get the best 12-strand and the best 16-strand climbing ropes from one source, Samson. True Blue and Blue Streak, matching colors and unmatched quality and performance.

Samson offers a full line of professional Arborist products: climbing and bull ropes, prusik lines, climbing tails, spliced climbing lines and accessory cords. All are proven in the difficult world of the professional arborist, and all are available through your local Samson Arborist products supplier. Just ask for BlueStreak, or contact Samson directly for more information.

Size Dia. Weight per 100 ft. Average Tensile
BLUESTREAK SPECIFICATIONS
1/2" 7.9 lbs. 8,100 lbs.

TRUEBLUE SPECIFICATIONS
1/2" 8.5 lbs. 7,300 lbs.

Larger size 1/2" diameter for easier grip and climbing.

Identified by alternating blue and white strands with a trademark red and green internal I.D. marker.

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"Reaching New Heights in Tree Care Technology"

CHARLOTTE CONVENTION CENTER
CHARLOTTE, NORTH CAROLINA
NOVEMBER 7-9, 1996
Welcome to Charlotte
and the 7th Annual Tree Care Industry Exposition!
Presented by the National Arborist Association, Inc. and the International Society of Arboriculture

Why should you attend?

THE SKY IS THE LIMIT with what you will learn from this year's exciting and educational program ...

- Over 150 exhibitors under one roof, bringing you cutting-edge tree care technology, products and services.
- Live demonstrations of climbing, rigging, aerial rescue and electrical hazards.

Thank you to Bartlett Tree Expert Co. for this year's tree donation.

- The SMART MANAGER and EXPERT PRACTITIONER SEMINAR SERIES allow you to customize your educational experience to fit your needs—with several sessions offering pesticide applicator recertification credits and ISA continuing education units!
- Admission to the trade show is FREE! Registration is required to obtain your admission badge. Be sure to pre-register and avoid long lines at the registration area.
- Take advantage of the educational seminars! SAVE SAVE SAVE!! Register before the Early Bird deadline of October 10 to receive your discounts. Save, Save, Save... Bring additional members from your company and save on each member's registration!!!

"The mission of the National Arborist Association is to support the success of commercial arborists and to promote the importance of tree care. The association will provide a forum for the exchange of information and will encourage professionalism through the collective efforts of the members. The National Arborist Association will act as a resource and a voice for the commercial tree care industry."
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Over 150 at this year's EXPO!!

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<td>Yale Cordage, Inc.</td>
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Thursday, November 7, 1996
7:30am  REGISTRATION OPENS
Complimentary refreshments available.

8:30 to 9:45am  KEYNOTE ADDRESS: TREE CARE IN THE 21ST CENTURY - Dr. Alex Shigo
Complimentary coffee available
Renowned tree biologist Dr. Alex Shigo paints a surprising and thorough portrayal of the professional arborist of the next millennium. We'll all need his insight into tree anatomy and physiology to provide proper tree care in the 21st Century...and it won't hurt your business now either!

9:57am  TRADE SHOW OPENS
Wear your walking shoes because with over 150 exhibitors there will be a lot of ground to cover! TCI EXPO is the largest tree care trade show in the nation. If it will make your business more efficient, competitive, productive or profitable, you'll find it all right here.
Plus, we've arranged for plenty of exciting demonstrations ranging from climbing and rigging to electrical hazard training. Check your show program for times and locations. To keep up with the industry, you won't want to miss a single demo.

12:00 Noon  ARBORBUCKS DRAWING, DEMONSTRATION AREA.
Be sure to fill out your entry form and you could be the winner of $500 in ARBORBUCKS currency. ARBORBUCKS can be used as cash at any of the participating vendor booths. Here's your chance to win the goods and services you need, and the exhibitors pick up the tab!

4 to 5:00pm  DEVELOPING TRAINING & EDUCATIONAL TOOLS FOR HISPANIC WORKERS - Tina Terrell
If you have tried recruiting lately, you know how hard it is to find and retain good employees. Yet here's a largely untapped pool of potential recruits just waiting for you. This lecture will give you the inside scoop on how to structure training and plan an employee development process that will open up a new resource for you and your company.

A300: A NEW ERA OF UNDERSTANDING - Tim Johnson
The ANSI A300 Standard is good for you, good for your company and good for your customers. Now, let Tim Johnson, the chair of the committee that wrote the standard, demystify and clarify this important communications tool.

5:00pm  TRADE SHOW CLOSES

5:15 to 6:00pm  HOW TO WIN THE EXCELLENCE IN ARBORICULTURE AWARD - Panel
This Evening Session is FREE for NAA Members and their invited guests.
You know your good work deserves recognition. This panel of experts will teach you how to get it through the judging process of the Excellence in Arboriculture Awards Program.

Friday, November 8, 1996
7:30am  REGISTRATION OPENS
Complimentary refreshments available

8 to 9:15am  HOW INSECTS KILL TREES - Jim McGraw
Complimentary coffee available
Jim McGraw is an Extension Forestry and Pest Management Specialist with the state of North Carolina. Here, Jim will give you an up close and personal look at common and serious tree insect pests.

8 to 9:15am  COMMUNICATING IS JOB #1 - Daniel J. Canary
Complimentary coffee available
Maybe it's not what you say, but how you say it. Clear communication is an absolute necessity for customer satisfaction and employee productivity, too. Dr. Canary, part of the Communication Research Associates consulting firm, will give you several easy steps to clarify your message.

9:00am  TRADE SHOW OPENS
Plan on an information-packed day of demonstrations, browsing the newest equipment, technologies and services, and rubbing shoulders (and exchanging ideas) with your peers. There's no other show like TCI EXPO!

9:15 to 9:30am  COFFEE BREAK OUTSIDE MEETING ROOMS

9:30 to 10:30am  HOW TO LAND COMMERCIAL CLIENTS - Phil Nilsson
Nilsson takes aim at marketing, estimating, proposals and other skills you need to land big commercial contracts. Nilsson, author and consultant to the green industry, uses his diverse background and experience to show you the way to growth and profits!

9:30 to 10:30am  STRATEGIES FOR REDUCING SOIL COMPACTION - Tom Smiley
Take advantage of Tom's experience in applied research at F.A. Bartlett Tree Expert Company to learn more about the effect of soil compaction on trees, and what to do about it. It could be a new profit center for you!

12:00 Noon  ARBORBUCKS DRAWING, DEMONSTRATION AREA
It's not too late to enter the drawing! The name they call could be yours!

4 to 5:00pm  TREATING THE WHOLE TREE - Bruce Fraedrich
F.A. Bartlett Tree Expert Company knows how to treat the whole tree because of Mr. Fraedrich's applied research in this area. Now you can find out what the "big guys" know about how this wholistic approach can benefit trees and your bottom line.

4 to 5:00pm  FLEET SAFETY - Billy Boguski
Did you know vehicular accidents account for the majority of insurance losses in tree care? Now you can find out first hand from this insurance industry expert proven techniques for reducing your risk of accidents. It's a safe bet you'll want to attend this seminar.

5:00pm  TRADE SHOW CLOSES
5:15 to 6:00pm  LOOK SHARP!!
Ezio Leonardi, Jr. and Ray Eluskie
This evening session is FREE for NAA Members and
their invited guests and offers insight into stump tooth/
chipper knife care & maintenance.

Saturday, November 9, 1996

7:30am  REGISTRATION OPENS
Complimentary refreshments available

8 to 9:00am  PRESCRIPTIONS FOR TREE HEALTH -
Ron Jones
Here's some strong medicine for your business.
North Carolina State Plant Pathologist Ron Jones
shares his insight and experience in mitigation and
control strategies for significant tree diseases.

8 to 9:00am  EFFECTIVE USE OF COMPUTERS IN TREE
CARE (PART 1) - Panel: Maris Franke, Practical
Solutions, Inc.; Mark Smith, Arbormasters; Donna
Garner, Tree Management Systems; and Peter
Hannan, Arbor Computer Systems
They're everywhere—in the news, on the rise, and
maybe on your competitors' desk! If you're not already
computer literate, let us show you how to automate your
accounting, whip out your work orders, and jazz up your
job costing. This seminar is geared toward the SMART
MANAGER, but has plenty to offer the EXPERT
PRACTITIONER.

9:00am  TRADE SHOW OPENS
This is your last day to see and learn about everything
you need to keep your business moving! Be sure to take
advantage of all TCI EXPO '96 has to offer!

9:15 to 10:30am  LOOKING AHEAD: IMPLEMENTING A
FIVE YEAR PLAN - Kevin Kehoe
Complimentary coffee available
Is business a game? It is to Kehoe who uses a board
game approach to showing you how to build your
business. Move ahead three, take a risk card, move
back two spaces. Is success a roll of the dice? Not if
you attend this exciting seminar. Learn what it takes to
move your business ahead successfully and smoothly.

9:15 to 10:30am  EFFECTIVE USE OF COMPUTERS IN
TREE CARE (PART II) - Panel: Maris Franke, Practical
Solutions, Inc.; Mark Smith, Arbormasters; Donna
Garner, Tree Management Systems; and Peter
Hannan, Arbor Computer Systems
Complimentary coffee available
There's too much ground to cover in one computer
seminar. Don't miss part 2 - this is one sequel that's just
as good as the original. You'll get a look at the future of
tree care computing with industry-specific functions such
as maintaining tree histories, inventories and mapping.
Geared toward the EXPERT PRACTITIONER but has
plenty to offer the SMART MANAGER.

12:00 Noon  ARBORBUCKS DRAWING,
DEMONSTRATION AREA
Last chance to win $500 in products and services. See
you in the demo area!

1:00pm  ISA CERTIFICATION EXAM - To pre-
register for the exam, you must call Beth Crozier at ISA,
at 217-355-9411. All participants must be pre-registered.

3:00pm  TCI EXPO '96 TRADE SHOW CLOSES!!

Back by Popular Demand . . .

ARBORBUCKS!
Every day at noon on the
Trade Show floor, there will
be a drawing for $500 in
ARBORBUCKS.

ARBORBUCKS can be used
the same as cash to make
purchases from participating
vendors at the show. There is no cost to enter
the drawing, and the chances of winning are
fantastic! ARBORBUCKS—another way you can
profit from attending TCI EXPO '96!

Be sure to look for these ARBORBUCKS
PARTICIPANTS:

- Aerial Lift of CT, Inc.
- Agape Designs
- American Arborist Supplies, Inc.
- American Safety Utility Corp.
- Asplundh Tree Expert Co.
- Bandit Industries, Incorporated
- Bartlett Manufacturing Company
- Buckingham Mfg. Co., Inc.
- Built - Rite Mfg. Corp.
- Chesapeake Engine Distributors
- Gravely International
- Green Garde Div./H.D. Hudson Manufacturing Co.
- GrowTech, Inc.
- Husqvarna Forest & Garden
- Industrial Engine and Equipment Company
- International Knife & Saw, Inc.
- John Bean Sprayers
- Karl Kuenmerling, Inc.
- Lanphear Supply
- The Peavey Manufacturing Co.
- Poulan/PRO
- Practical Solutions, Inc.
- Rayco Manufacturing, Inc.
- Roots, Inc.
- Sierra Moreno Mercantile Company
- Simon - Telelect, Inc.
- STIHL Incorporated
- Tilton Equipment Company
- Tree Line Supply Company
- Tree Management Systems
- Vermeer Manufacturing Co.
- Wellington Commercial Cordage
- WesSpur, Inc.

See you next year
in Columbus, OH!!
How do I get there?

Driving is easy...

FROM I-85:
Driving North from points South of Charlotte:
Exit 36 to Brookshire Freeway, Highway 16 South until it turns into I-277 loop. Continue on I-277 loop around city to Exit 1E, Stonewall Street.
To the Westin: Turn left on Stonewall and proceed 3 blocks to College Street and turn right. Turn right on 3rd Street and right into the Westin Motor Lobby.
To the Holiday Inn: Turn left on Stonewall and proceed 3 blocks to College Street and turn right. Proceed on College Street for 6 blocks. Turn right into hotel on 6th Street.

Drivng South from points North of Charlotte:
Exit 38, which is I-77 South, to Exit 1E, Stonewall Street. Follow from above.

FROM I-77
Driving South from points North of Charlotte:
Exit 9 to I-277 (also known as Brookshire Freeway). Continue on loop to 1E, Stonewall Street.
To the Westin: Turn left on Stonewall and proceed 3 blocks to College Street and turn right. Turn right on 3rd Street and right into the Westin Motor Lobby.
To the Holiday Inn: Turn left on Stonewall and proceed 3 blocks to College Street and turn right. Proceed on College Street for 6 blocks. Turn right into hotel on 6th Street.

Driving North from points South of Charlotte:
Exit 9 on to I-277 (also known as John Belk Freeway) Continue to Exit 1E, College Street.
To the Westin: Proceed on College Street and turn right onto 3rd Street and right into the Westin Motor Lobby.
To the Holiday Inn: Continue on College Street for 6 blocks. Turn right into the Holiday Inn on 6th Street.

FROM US HIGHWAY 74
Driving West from points East of Charlotte:
Follow signs to I-277 West (John Belk Freeway). Continue to Exit 1E, Stonewall Street.
To the Westin: Turn left on Stonewall and proceed 3 blocks to College Street and turn right. Turn right on 3rd Street and right into the Westin Motor Lobby.
To the Holiday Inn: Turn left on Stonewall and proceed 3 blocks to College Street and turn right. Proceed on College Street for 6 blocks. Turn right into hotel on 6th Street.

Driving East from points West of Charlotte:
Continue on US 74 until it merges with I-277, Exit 1E, College Street.
To the Westin: Proceed on College Street and turn right onto 3rd Street and right into the Westin Motor Lobby.
To the Holiday Inn: Continue on College Street for 6 blocks. Turn right into the Holiday Inn on 6th Street.

Limited parking is available at the convention center and at local public parking lots. Daily rates range from $3.75 to $6.00. Limited complimentary parking is available for those guests registered at the Holiday Inn Charlotte. Guests of the Westin Hotel Charlotte will pay a daily rate of $10.00 self-park or $14.00 valet park.

Flying is easy...

Charlotte, NC is a US Air hub and is easily accessible by air from all major cities. US Air is the official airline for TCI EXPO '96 and will offer conference attendees 5% off its lowest published fares to Charlotte and 10% off its unrestricted fares.

For flight information, you may call our travel experts at Brock Travel, 1-800-488-2027, or call US Air direct at 1-800-334-8644. Be sure to reference the TCI EXPO '96 Gold File number 1926023 to receive your discount.

Airport Transportation is easy...

Charlotte/Douglas International Airport is located 15 minutes from Uptown Charlotte. Arrangements have been made with Gray Line transportation to provide service to the Uptown hotels for TCI EXPO attendees. Gray Line pick-up is located just outside the baggage claim area and will offer a discounted rate of $13.00 round trip or $7.00 one way. To receive this discount, look for Gray Line coupons in your registration confirmation packages.

Finding a hotel room is easy...

This year, the host hotel for TCI EXPO '96 is the WESTIN HOTEL CHARLOTTE, located just across the street from the Convention Center at 222 East Third Street. The WESTIN HOTEL was formerly called the OMNI CHARLOTTE. The WESTIN is offering TCI EXPO '96 attendees the rate of $91.00 single/double occupancy. Space is limited so be sure to make your reservations early. This rate will be offered until October 5, 1996. To make your reservation, please call the WESTIN HOTEL direct at 704-377-1500 or call the Westin Central Reservation Line at 1-800-228-3000. Be sure to reference the National Arborist Association/TCI EXPO room block when making your reservation.

Alternate accommodations are available at the Holiday Inn located 5 blocks from the Convention Center. The address for the Holiday Inn is 230 North College Street, Charlotte, NC 28202. The Holiday Inn will offer TCI EXPO '96 attendees a rate of $69.00 single/double occupancy with limited complimentary parking. Reservations must be made prior to October 5, 1996 to guarantee this preferred rate. To reserve your room, please call the hotel direct at 704-335-5400 and be sure to reference the National Arborist Association/TCI room block.

MAKE YOUR RESERVATIONS EARLY!

The "Uptown Circuit" runs throughout the uptown Charlotte area and can provide shuttle service to the Convention Center from the Holiday Inn. This is a complimentary service provided by the City of Charlotte. The electric shuttle is a 20 passenger bus that runs Monday through Friday from 7:30am to 6:00pm.

Uptown Charlotte offers numerous restaurants, galleries, historical sites and museums, shops and city tours, most within walking distance of the hotels and convention center.

For any questions on the city of Charlotte, dining recommendations, transportation or sight seeing, be sure to visit the Charlotte Welcome and Information Center located next to the registration desk in the College Street Lobby.

Trade Show Hours:
Thursday, November 7 - 9:57am to 5:00pm  •  Friday, November 8 - 9:00am to 5:00pm  •  Saturday, November 9 - 9:00am to 3:00pm
REGISTRATION FORM

Name __________________________ NAA Member? Q Yes Q No

Company __________________________________________________________ Phone ______________

Address __________________________ City __________________________ State ______ Zip __________

Title: (please check one that applies)

☐ Owner  ☐ President  ☐ Vice President  ☐ Manager (general)  ☐ Superintendent  ☐ Forester  ☐ Supervisor  ☐ Director  ☐ Purchasing

Agent  ☐ Landscaper  ☐ Grounds  ☐ Manager  ☐ Govt. Agent  ☐ Consultant  ☐ Instructor  ☐ Arborist  ☐ Other  

Signature __________________________

NOTE: Please use separate forms for each attendee. This form may be photocopied.

SEMINARS

Check the box beside each seminar you wish to attend. Be careful not to pick two seminars that are held at the same time.

Count the number of seminar hours indicated next to the seminar titles. Record this number in the space below marked total seminar hours.

NOTE: Evening Sessions on Thursday, November 7 and Friday, November 8 are available only to NAA Members and their guests—and they're FREE!!

THURSDAY, NOVEMBER 7

☐ #1 - 8:30 am  Tree Care in the 21st Century  1 hour

☐ #2 - 4:00 pm  Developing Training and Educational Tools for Hispanic Workers  1 hour

☐ #3 - 4:00 pm  A300: A New Era of Understanding  1 hour

☐ Evening Session  How to Win the Excellence in Arboriculture Award (Open only to NAA Members and their Guests)  0 hour

FRIDAY, NOVEMBER 8

☐ #4 - 8:00 am  How Insects Kill Trees  0 hour

☐ #5 - 8:00 am  Communicating is Job #1  1 hour

☐ #6 - 9:30 am  How to Land Commercial Clients  1 hour

☐ #7 - 9:30 am  Strategies for Reducing Soil Compaction  1 hour

☐ #8 - 4:00 pm  Treating the Whole Tree  1 hour

☐ #9 - 4:00 pm  Fleet Safety  1 hour

☐ Evening Session  Stump Tooth/Chipper Knife Care & Maintenance (Open only to NAA Members and their Guests)  0 hour

SATURDAY, NOVEMBER 9

☐ #10 - 8:00 am  Prescriptions for Tree Health  0 hour

☐ #11 - 8:00 am  Effective Use of Computers in Tree Care - Part I  1 hour

☐ #12 - 9:15 am  Looking Ahead: Implementing a Five-Year Plan  1 hour

☐ #13 - 9:15 am  Effective Use of Computers in Tree Care - Part II  1 hour

TOTAL SEMINAR HOURS

CALCULATE YOUR COST

BASIC COSTS: Multiply your total seminar hours by $38 and enter the amount on the basic cost line.

DISCOUNTS: Deduct $3 per seminar hour if you are registering prior to the Early Bird Deadline, October 10, 1996. Deduct $6 per seminar hour if you are registering an additional person from your organization. (Discounts available to each registrant.)

TOTAL COST: Subtract your Total Discount from your Basic Cost line. This figure is what you pay for your registration.

THE GOLD CARD

If your Total Cost Line is greater than $170 AND you register prior to the Early Bird Deadline of October 10, then BUY GOLD! To purchase the GOLD CARD which will give you unrestricted access to all educational sessions, check YES in the box below and enter $170 in the TOTAL COST LINE and you're done!

I wish to buy a Gold Card registration: ☐ Yes ☐ No

PAYERMENT INFORMATION

☐ Check enclosed for $___________________

☐ Please charge my Visa/MasterCard

Card # __________________________

Expiration Date __________________

Signature _______________________

Do you wish to receive NAA Membership Info? Q Yes Q No

Do you wish to receive a 12 month complimentary subscription to TCI Magazine? Q Yes Q No

You must complete all of the information below to receive your subscription:

Business/Industry: (Please check one that applies)

☐ Tree Service  ☐ Landscape Contractor  ☐ Governmental Entity

☐ Property Mgmt.  ☐ Consulting Firm  ☐ Utility

☐ School/University  ☐ Other: ______________

Purchasing Authority: (Please check one that applies)

Approve Q Recommend ☐

3 EASY WAYS TO REGISTER!!!

☐ By Phone: Call 800-733-2622 and have your credit card # ready

☐ By Fax: Send Completed Registration Form to TCI EXPO '96 at 603-672-2613

☐ By Mail: Send Completed Registration Form to TCI EXPO '96, P.O. Box 1094, Amherst, NH 03031-1094

BE SURE TO INCLUDE YOUR PAYMENT INFORMATION.
All proceeds from this event will benefit the National Arborist Foundation!!

NAA Member Seminars

The benefits of NAA Membership are everywhere. This year, NAA members are invited to attend 2 FREE seminars on Thursday and Friday from 5:15pm to 6:00pm. Bring a co-worker—bring a guest. Hear how the NAA can help you achieve your goals!!

ISA RECERTIFICATION EXAM

The ISA Recertification Exam will be given on Saturday, November 9, 1996 from 1:00 to 4:30pm. You must be pre-registered with ISA to participate. To pre-register for the exam or to obtain additional information, be sure to call ISA at 217-355-9411.

Checklist For Registration Form

- Photocopied the original form to give to additional members of my firm
- Filled out the form completely
- Taken advantage of all entitled discounts
- Double checked all cost calculations
- Photocopied the completed form for my records
- If there are multiple attendees from my company, enclosed a copy of their form(s)
- Enclosed a check or credit card information
- Mailed or faxed registration form before October 10, 1996
Grow Your Business

Green Thumbs Are Sprouting Everywhere

Business should be booming for arborists in years to come, thanks to the more than 20 million U.S. households that turned to landscape-, lawn- and tree-care professionals for expert guidance in 1995. A recently published Gallup poll report found that Americans spent an average of $710 per household, or $14.2 billion in total, for professional services and products to improve their outdoor living areas. And although overall spending has slowed slightly thus far this year, the average amount spent per household has increased.

Factors fueling growth changes in many households across the nation regarding lifestyle, economic standing, and an environmental awareness that's rapidly gaining in popularity:

- increased homeowner awareness of outdoor living spaces
- equity return on landscape investments
- the continued rise in two-income families
- less “free” time available to attend to landscaping duties
- growing knowledge of the environmental benefits of well-designed, properly maintained landscapes

Gallup estimates that an additional three million U.S. households plan to purchase arborist services throughout this year, which means that

23 million-plus U.S. households may need your help!

(Continued on p. 3)
For Safety's Sake

No matter how experienced you are, taking shortcuts on the job can cost you your life! Recently, a 63-year-old owner of a tree care company died of injuries suffered from a fall. Secured by a rope around his waist to a tree he was trimming, the man fell when the rope was accidentally fed into a wood chipper. How could this tragedy have been avoided?

Attitude - pay attention to what you're doing and take safety guidelines seriously.

Behavior - follow established safety procedures to the letter, and don't take shortcuts. Wear the appropriate protective gear at all times, and always clarify any directions that are unclear or incomplete.

Control - take responsibility for your own safety and that of your coworkers. Clean up your work area at the end of each day. Keep all equipment in proper working condition, and store it properly.

It is always important to remember to apply the ABC's of safety during any job. Be sure that all ropes are free of any twigs, brush, and other debris; secure all ropes a safe distance away from the chipper; and enlist the help of an experienced ground man. For arborists, "remembering your ABC's" does more than aid vocabulary and spelling... it can save your life!

My name is Steve Chisholm, and I guess you could say that I'm the patriarch of a family whose roots run deep in the tree industry. Just about everybody in the family has a job to do in our family business - Aspen Tree Experts, Inc. in New Jersey. My wife Laura manages the accounts payable, insurance matters, and all kinds of administration duties. Fortunately, our daughters-in-law Connie and Annie are there to help Laura around the office (when they're not busy chasing the children). My youngest son Mark is an accomplished climber, and I'm proud to say he's the local ISA Chapter's Jamboree Champion for four years running. And our oldest son, Steve Jr., writes articles for trade magazines and contributes artwork and photography for the ISA Chapter's calendar. This year I'm serving as President of our local ISA Chapter.

Even Steve Jr.'s twin daughters have gotten into the act. They were born on the first day of autumn and are named Autumn and Holly.

Things can be tough sometimes, like when the weather prevents us from working, or the twins are sick, but everybody pulls together to make it work. Running a family business has given us a special closeness that you can't get any other way. So "a day in the life" means that from the moment we all meet in the breakfast nook to sip some morning coffee to the time we share dinner each night, my family is bound together by the tree industry - and it's really something special to see.

"Running a family business has given us a special closeness that you can't get any other way."

What If?, continued from p. 1

the resulting trial, the arborist was found guilty of trespassing. The judgement: $825,000. The fact that the arborist never knew he was trespassing didn't matter!

The lesson here: Always document tree ownership, location of legal property lines, etc., before you start the job.

What if this happened to you? Are you covered? This type of accident is covered by The TreePro Insurance Program, offered by Albiez Insurance Agency. Call us for more information on TreePro.
The importance of early reporting of Workers Comp claims and early placement of injured workers into rehabilitation cannot be emphasized enough. Both the injured worker and the employer benefit from early reporting, assessment, and management of the injuries.

After examining 200,000 claims involving lost work time, a major insurance company discovered that injuries reported within the first 10 days of injury were 47% less costly than those reported more than 31 days after the occurrence. Similarly, another insurer found that injuries reported within 10 days of occurrence cost an average of $10,172, while those reported after 30 days averaged $15,745.

Lowering the cost of claims will lower your experience modification and premiums, too!

Grow Your Business. 
continued from p. 1

In the next issue of The Cutting Edge, we will show you how to tap into these markets.

This survey was sponsored by the AAN, ALCA, ISA, NAA, and PLCAA, and conducted in cooperation with the National Gardening Association.

Survey

Would you like to learn more ways to grow your business? How about your own newsletter to send to your customers? Give us a call at 1-800-ARBORS-1 ext. 669 and let us know what you think!

Albiez Insurance Agency has saved arborists like you up to 30% on insurance coverage! The only tool you need to pick up is the phone.

Call Albiez Insurance, your arborist insurance specialists at 1-800-ARBORS-1.
Upcoming Conventions

September 15 Certified Arborist Exam, sponsored by Pacific Northwest Chapter ISA. Cavanaugh's, Yakima, WA. Registration required at least two weeks in advance. Contact: (206) 784-1945. Fax (206) 784-1952.

September 16-18 ISA, Pacific Northwest Chapter, Annual Training Conference, Yakima Convention Center, Yakima, WA. Contact: (206) 784-1945.

September 20 Certified Arborist Exam, sponsored by Pacific Northwest Chapter ISA. Registration required at least two weeks in advance. Contact: (206) 784-1945. Fax (206) 784-1952.


October 20-22 Annual Meeting, N.E. Chapter, ISA. Ramada Inn, Norwich/Mystic, CT. Contact: Bonnie Moran, (203) 746-3014 Fax (203) 746-4705

November 1-3 New Jersey Shade Tree Federation Annual Meeting and Tree Expo, Sheraton Inn, Cherry Hill, NJ. Contact: Bill Porter, (908) 246-3210


November 7-9 TCI EXPO '96, New Charlotte Convention Center, Charlotte, NC. Contact: (800) 733-2622

Richard Augustyn, President of Albiez Insurance Agency, accepts invitation to speak at the New Jersey Shade Tree Annual Meeting on November 2. The topic will be workers compensation.

Win a Trip to Cancun — Bring This Card to the TCI Show!

You could win a fabulous trip for two to sun-drenched Cancun, Mexico — one of the country's hottest and hippest resorts! The trip includes free round-trip airfare for two from a U.S. city, hotel accommodations for five days and four nights, and ground transfers. To become eligible to win, all you have to do is enter! Simply complete and return the card below to the Albiez Booth #1138 at the TCI Expo '96 Show in November!

Contact Name: ____________________________
Business Name: ____________________________
Address:____________________________________
City/State/ZIP: ____________________________
Phone Number: ____________________________
FAX number: ______________________________

Remember to drop this card off at the Albiez Insurance Agency Booth at the TCI EXPO '96