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My New Year’s Resolutions

Since the beginning of the new year is traditionally the time for deciding what we would like to improve about ourselves and making resolutions to change, I offer some of my resolutions.

My first resolution is that in business as well as personally, I will assess where I am and where I want to be much more frequently than once upon the new year. It’s easy to get your nose so close to the grindstone that you can’t see where you’re headed, so you have to look up occasionally. A certain amount of introspection is healthy.

My second resolution is to stop procrastinating. Putting off an easy task only makes it harder, and putting off a hard one makes it virtually impossible. The trick when you are very busy and trying to manage competing demands is to discern what can be done today from what should be done today from what must be done today. When you can make three neat piles of all your obligations, you are not procrastinating but prioritizing.

My third resolution is to listen harder. A disgruntled customer, a strained friendship, a valuable employee lost—these are just some of life’s tragedies that can often be avoided simply by listening.

Listening is no passive process. Some people enjoy and even demand that you listen, and simply being listened to is therapeutic in itself. I find most people are not willing to unload their burdens, and effective listening might involve a little legwork and questioning. Remember, it is not that the latter group has any less of a need to be heard. In fact, they may have a greater need.

Also, to be selfish for a moment, I want to continue to learn and grow as a person, and I can only do that by listening. Think about that statement. I defy anyone to show me how I can learn anything meaningful while I am talking.

My fourth resolution is to trust and empower the people around me more. The only way someone can learn to succeed is by being allowed to make mistakes. Therefore, trusting people is empowering them. If these people are your children, then trust can make you a prouder parent. If these people are your employees, trust can push your company to new heights.

My last resolution is to not bite off more than I think I can chew, so I am stopping here. On behalf of everyone at TCI, I wish you the best of luck with your resolutions.

Peter Gerstenberger, Editor

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Arboriculture in the 21st Century
By Dr. Alex Shigo

If you believe that the tree is a living, dynamic organism, then to treat it is essential to understand the basic principles of all living things. Shigo predicts the scientific aspects of arboriculture will be expanded in the 21st century.

Training the Nation's Youth
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Educators discuss the tree care industry's lack of initiative in nurturing and recruiting the next crop of young arborists.

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Arboriculture in the 21st Century

By Dr. Alex Shigo

Arboriculture in the beginning of the 21st century will begin to split into art-only and art-and-science professions. By the middle of the next century, the two professions will be well separated. The purpose of my discussion is to give information in support of this prediction.

To know where you are going, you must first know where you are and then know how you got there. The future can be thought of as an extrapolation of points along a curve. The past defines undulations of the curve before the present. History is the actual occurrence of events over time. The recording of past events is often clouded by the person who tries to explain why some of the events happened. The occurrence of the events cannot be denied, but any more than that becomes very subjective.

Just as I base my discussion on a single prediction, I believe there was one driving belief that set the stage for the growth of arboriculture in the United States. That belief is now over three centuries old, and it has moved as a wave. When a wave hits a shoreline, the crash back into the water is much more intense than the inward rush of water. The belief that grew after our country was colonized in 1620 was that the trees were endless and they were the enemy. Trees were in the way of farms, homes, towns and roads. Yes, they did have some value for buildings and for fires, but their size and abundance made them more of a problem than a benefit. Over time, the value of trees did increase, but the belief in endless forests continued.

In recent decades, the great wave with the power of more than three centuries behind it hit a very steep shoreline. The
crash of the wave signaled the end of the belief that the forests were endless. By this time, the many values of trees had gained public attention. A city without trees is not worth living in. Trees as a means for enhancing property has become common sense. As the value of trees continues to gain momentum, educated clients will demand better treatments, better decisions and better trained and educated people to look after their trees. The art-science arboriculturist will be called.

Why have myths and misunderstandings plagued arboriculture? The problem started in the mid-19th century when several important events happened about the same time. The repeated failure of the potato crop in Ireland caused by the fungus *Phytophthora infestans*, set off a large scale famine and migration. At this time, Anton De Bary proved that a fungus caused the disease rather than the well-accepted belief that the disease caused the fungus. At the same time as Louis Pasteur was winning the battle of the germ theory, Robert Hartig showed that fungi cause decay rather than the long held belief that decay causes fungi. For his work, De Bary is recognized as the father of plant pathology. Hartig is recognized as the father of forest pathology. Hartig’s great work set off a rushing stream of research on decay.

In a world covered with trees, however, there was no incentive to learn about how to grow more of them. What was needed was to find better ways to deal with decay and better and faster ways to get the wood out of the forest. Pathology studies centered on pathological rotation schemes to deal with decay in living trees and better ways to prevent decays in wood products.

Now comes the problem of the heartrot concept. Heartrot was defined as the decay of the heartwood. Heartwood was defined as the central, darkly colored dead core of all trees. Since decay developed in dead heartwood, decay was not considered a disease. At the same time, textbooks and teachers—even to the present day—state that the only living part of a tree trunk is the single layer of green cambium that produces wood on its inside. And that is all wrong! Sapwood has more living cells than dead cells. The cambium is not a single layer, nor is it green. (The cortex is green). The cambial zone produces xylem. When it is lignified, it is then correctly called wood. The dead heartwood decay concept has been the major myth that has led to many injurious tree treatments. If the wood is dead, then put a wound dressing on wounds. If decay develops, dig it out until healthy clear wood is exposed. Cut branches as flush as possible to the trunk to stimulate faster “healing” to cover the core of dead, decay-susceptible wood. The heartrot concept treated the tree as a dead cylinder of wood. The heartrot concept is, at best, a wood decomposition concept. The tree as a living, big, beautiful organism was left out of the concept! Say what you will about compartmentalization, but it is built on the belief that a tree is a living, dynamic, organism. The tree does not lie there and just “let” decay-causing organisms run through it at will!

If you believe that the tree is a living, dynamic, organism, then to treat it is essential to understand the basic principles of all living things. This means an understanding of biology and, yes, chemistry. Now we know there is still more, as we see the need to understand the tree also as a magnificent mechanical structure. The science part of arboriculture will be expanded in the 21st century. The past has given us the endless enemy and the dead heartwood decay concept. The present gives us great concerns for the conservation of trees and for the best ways to treat the living tree and its many living associates—the tree system.

**Guns, Shadows, Targets**

You can have the best rifle in the world. You could be the world’s best sharpshooter. However, if you don’t know the difference between shadows and animals, you won’t put...
much wild game on the table. To shoot a deer you must aim at the deer as the target not its shadow. Silly, you say. Think about it. Plato did 2,300 years ago. He said in *The Republic* that many people have great difficulty telling the difference between reality and shadows as perceived reality. Plato tells a story about people born in a cave. They are chained to their chairs and can only see the wall in front of them. There is a fire in back of them. People with various-shaped objects march behind the fire and the shadows of the objects show on the wall. Great societies of shadow watchers are formed. High honors and awards are given to the best shadow watchers. One day, a brave soul breaks from his chains and runs out of the cave. The light at first blinds him and the pain is intense. In a short time, he begins to see again and the pain begins to subside. Then it happens! He is overwhelmed at what he is seeing and touching. He is now seeing and touching real things, not looking at shadows. He becomes so overjoyed that he wants to share his discoveries with his cave friends. He rushes back into the cave. They kill him!

I predict that many cave people will escape in the 21st century. I believe the word is out in the cave that real things of great wonder are outside, just waiting to be understood and enjoyed. This does not mean that the cave shadow watchers will go away. They will strengthen their forces and let escapees know the dangers that face them. They will come up with even better recipes for bigger, and more wonderful shadows.

**Guns, Tools, Principles**

Back to guns again. Consider if you will what a gun and shooting is all about: a tube, a projectile and some force-providing substance to move the projectile so rapidly through the tube that it extends its path far beyond the tube. Think for a moment about this. From a historical view, tubes were used by early humans and are still used today by some jungle people as a tool for directing some projectile in a straight path beyond the tube. So, tubes are not new. Think about the many kinds of projectiles used to strike a target. Projectiles are not new. How about some force to move the projectile. You could blow a dart through a tube. You could whip a small stone through a tube. Or, you could use some material such as black powder that explodes and blows the projectile through the tube. Again, nothing new. However when you connect the tube with a lead projectile and use a force-providing substance, now the rifle became a new thing made up of many old things. That is the way most so-called new theories, principles or concepts come about. Remember, the Old Testament states that nothing is new, yet it is followed by a New Testament! New theories, concepts and principles are usually built on many old, well known other truths. The act of connecting makes the product new. Not so different from much that is said about modern arboriculture. The concept is not new in one sense, because much has been discovered about tree biology, tree associates, soils, chemistry, biophysics and many other subjects. My point is that key aspects have not been connected. You would not...
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go hunting with only a tube, or with some lead or rock projectiles, or with a handful of black powder. These are all old things. You do hunt with a rifle. It is new in the sense of connecting the most important parts of well-known items. Nothing new, but a connection of more refined items.

This will be the same procedure with many tools and machines used by arborists in the 21st century. Just as guns are connections of simple basic parts, so are many of the tools and machines used to prune, plant, fertilize, spray, inject, chip, dig stumps, cut wood, lift to greater heights and record data. There is no doubt that computers and new electrical tools will enter the tree care profession. I predicted many years ago that small electrical devices will be placed in select trees and signals will be sent to receiving computers miles away. A flush cut on Mrs. Jones’ tree will start a red light blinking. Don’t laugh. In summary, tools and machines will change to be more accurate, lighter and user-friendly. However, just like the modern rifle, how you use them will depend on skills and distinguishing shadows from the real targets.

Of Steel and Trees

It is always fascinating to see the common threads that connect subjects far removed from each other. What can the steel industry tell us about the tree industry? Plenty!

In 1901, United States Steel was formed as the first and mightiest conglomerate in the world. The conglomerate brought together oil, railroads, coal, telegraph cables, steel and people. The good news is that the steel conglomerate was a major factor in the growth of our country. The bad news is that the people who worked in the mills and coal mines and on the railroads were paid very little for extremely hard, long work. They were the people who came to the New World after the potato famine. The leaders of the conglomerate all became multi-millionaires. By our standards today, they would be billionaires. The power of the conglomerate lasted almost a century. After the second world war, the conglomerate began to weaken as other countries got into the steel business, oil was imported and air travel took over from rail.

Long before the steel conglomerate, nature “understood” the power of synergy, where two or more connected groups yield much more than the sum of the groups taken as individuals. A classic case of synergy is the connection of trees and fungi to produce a new organ called a mycorrhiza. Many synergistic associates exist within the rhizosphere of trees. My point is that much more can be done at a lower cost if the right groups are connected. The steel groups waited until 1901 to understand that. Trees “knew” it long before that. A major difference between the steel conglomerate and the tree “conglomerate” or system is that the tree system did “demand” much from every associate, but the associates were “assured” high-quality survival. The fall of the steel conglomerate can also teach us a tree system lesson: When connected parts begin to fall away, in a short time the entire system will begin to decline.

In preparation for this discussion, I looked at many old photographs of houses of the first ultra-rich people in the United

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10 TREE CARE INDUSTRY - JANUARY 1997
Ron Carter of Victoria, B.C., shows some excellent composted mulch from wood chips and leaves. Mulch is food for many soil inhabitants. More composted mulch will be used in the future.

Hard Work Will Not Change

A major difference between a tomato plant and a tree is that you cannot fall out of a tomato plant. Tomato plants cannot fall on you and kill you. To be an arborist, you must not be afraid of hard work. This is a major reason why I am very proud to be associated with arborists. I like people who work hard and have a strong feeling for our living world. This part of arboriculture will never change. Here I need some further explanation of my terms old and modern arboriculture. By old arboriculture I mean tree care based on old recipes and myths—plant deep, cut flush, paint wounds, dig into cavities, over prune, over water, over fertilize, inject anything that stands still, top trees, add lots of fresh chips as mulch, plant the wrong tree in the wrong place and most important, don’t read or learn anything new!

Modern arboriculture will still mean lots of hard physical work. But it will also mean making decisions, predictions and treatments based on an understanding of the whole tree system—hard work and education, mind and muscles, training and education. Not to belabor my point, but modern arboriculture must be more than just muscles without the mind. I know that many people became arborists because they ran from school. I know this has no reflection on their intelligence. In fact, I think some were so intelligent they saw the futility of some of the school courses! I regard some of the school dropouts as my close friends, and I know they not only understand arboriculture, they understand the ways of the business world. In the future, I hope our education systems will change and reduce the number of dropouts.
Changes and Adjustments

As arboriculture grows in the 21st century, the art and science will slowly come together. New and altered tools, machines and products will bring with them the need to understand correct use and dose where products are concerned. There will still be saws, and other tools will be developed for rapid, correct pruning and for cutting trees. The biggest changes will come in tools and machines used for detection of potential problems and diagnoses of existing problems. Electronic devices will be used for sensing early symptoms of declines and of diseases. Electromagnetic devices will be used to confuse insects and fungi. Many new products will flood the marketplace. The careful arborist will really need to know what may be helpful from what could be harmful, at least to the wallet and purse.

To keep pace with the new products, the science side of arboriculture will have to increase greatly.

Today the number of Ph.D. arborists is low compared to the number with only a high school education. There will be dramatic changes in these percentages as demands increase for decisions on larger tracts of land. Bright students will begin to consider not only salaries, but, as always, the life the job brings. This last feature has always been a beneficial part of arboriculture. As the "outside" shrinks, the chance to be outside and still make a living will have greater appeal to young people. Training and education leading to careers in arboriculture will start at an earlier age. More and better educational programs through schools, television and environmental-based groups will inform not only prospective arborists but the clients who will hire them. Awareness of the whole green system will come to all people from many different sources. The image of a professional modern arboriculturist will increase greatly. In time, the present organizations such as the ISA, NAA, The National Arbor Day Foundation and others will begin to have many sub groups. I use for my predictions here the patterns of some of our large organizations today.

I do not want to lose sight of the fact that the hard, physical parts of arboriculture will not go away. Even if more powerful, lightweight tools and machines come, it will still take a lot of muscle to do many tree jobs. The ability to move bigger and bigger trees with bigger and bigger equipment will still tax the body after a long day. However, the modern arborist will have to use his or her mind to decrease the burden of heavy loads and dangerous jobs. The size of the patient will never let arboriculture become an easy profession.

A difficult subject to discuss, but it must be discussed, is how will the existing green groups grow in the next century? Will they grow together, apart or remain as they are now? Some of the major groups are arborists, nursery people, landscape architects, foresters, and lawn care people. These groups have insulated themselves from others very well during this century. Competition in business may force some melting and blending. The educational requirements of landscape architects have kept them at a higher wage level than other groups. The shrinking forest and the chip-
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are to give our profession a boost, but I do believe we work in an area critical for the health of the world. That point has never come through, mainly because we are just ending the period of the endless enemy. People usually respond only to crises, which is sad but true. As the endless enemy wave hits the shore, the back splash may signal the need to begin learning something about our trees. Remember, there was no need to know how trees grow or how to grow trees when it was thought that the forests were endless. Consider the same situation with AIDS. Until it came along, little was known about our human immune system. Why study something that has no immediate value or connection? Now, researchers must go back to some basics that were left unstudied. The journals are now full of articles about our immune system. Why not take the same approach with trees? Look in any textbook on biology or botany and see how much space is given to the entire field of trees. What more do you need to learn about them? They are big, tall and some grow for a long time. They have three organs (WOW!), leaves, stem, roots. The core of wood is covered by bark and they have seeds. Next lesson. How sad!

Just as medical people somehow left out the human immune system, tree people left out the entire response system of a tree. How could a dead cylinder of wood respond anyway. Wound it, paint it, and when it decays, dig out the rot! Enter compartmentalization again. In 1959, when I first started dissecting thousands of large trees in a longitudinal radial direction with a chain saw, I saw things in the trees that...

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were different from what I saw in the textbooks. One day I decided to escape from the cave and I stood up in front of my peers and said the tree is correct and the textbooks have some shadows in them. Since that day, the shadow watchers have been out to get me.

In the next century, I believe we will go back to learn more about many subjects that were left along the way. Many people have asked for more advanced stuff. It is interesting that while some want more advanced information, others are saying enough, we do not need it. My answer is, if you are satisfied with your wages and job—and satisfied knowing they will not change during your life—then fine, you do not need more stuff. I must say that the other group asking for more drives me. I repeat, I accept the group who doesn't want more and I respect them and their position, but they should not interfere with those who do want more.

What more is there, really? There is more about biology, laced with a good dose of chemistry. The next level of tree biology cannot be approached without the language of chemistry. To hear and read the same old studies on fertilization, pruning, etc. must make you as disturbed as it does me. The next level of biology and chemistry will give us new opportunities to really talk about fertilization, rhizoplanes, bicarbonate ions, redox potentials in soil, ion size and charge, and a new, wonderfully long list of topics that will clarify years of confusion.

I cannot see how we can discuss the tree without discussing associates, and the soil and the ribbon of chemical changes that runs through the whole grand connected system. I am not saying that every arborist must be a biologist or chemist. I do believe that every arborist should at least be aware of the major scientific principles of life. It is awareness that I am after, not a complete detailed understanding of biology and chemistry. Now, I am very sympathetic with arborists who ran from biology and chemistry in school. It is no wonder they did, judging from the way the textbooks are written and the way they were taught. I have been wading through large chemistry texts now, and I know the problem.
Changing Education

Now I come to another big adjustment that will take place in the next century. The curricula for two- and four-year programs will and must be adjusted. It is impossible to cover all the material needed in that time to prepare a person for a job. Yet, many people just cannot afford to continue going to college. What is the answer? Textbooks and courses must change to awareness-type material. The material must be in a form that makes you aware of the principles, but does not demand that you understand all the details. Chemistry courses are designed to make you a chemist. What if you do not want to be a chemist, but you do want to be aware of enough chemistry to help you make sound decisions about treatments for the tree system?

The first part removed from awareness chemistry will be the mathematics. I am not down on mathematics, but it is usually the main problem when it comes to chemistry. The next item to go must be the demand to memorize long formulae. It will not be easy to write and teach awareness-type books and courses. Yet, it must be done. I know the subject is hot now within many universities. As this happens, the mix of art and science of arboriculture will come about without a stir. It will be a natural thing.

Now, let me go back to a potential problem I presented earlier about insulated green groups. As more students graduate with more awareness information about many principles, the insulation among the green groups will begin to decrease. Why? Because of the marketplace again. Clients will only want one group to do the job for reasons of economics.

Another big change in the next century will be the expanding world market for modern arboriculturists. The Pacific rim is already beginning to show its economic strength. If the past is prologue, developing cities will want trees and parks. Rebuilding old and decaying parts of cities will require decisions about trees and parks. In some of the Pacific rim countries, the reverence for trees is high, while in other countries trees have little value. This will change as people pressures demand someplace to walk and sit. What this means is that young, trained and educated people from the United States may see great opportunities in other countries. As travel time shrinks, the possibilities of working in other parts of the world will become more desirable.

Where Will Research Go?

The role of electromagnetic fields will be hot for all life sciences from humans to trees to microorganisms. For a long time, some researchers have believed that termites communicate by way of magnetic fields, and that insects first find their target by magnetic fields and then go on with volatiles or pheromones. This research may clarify why insects seem “wrong” because they are only an indication of some electrical signal.

Over and over again, I make the same plea for understanding the basics in the tree system. When this finally happens, many wonderful pieces will fall into place.

Dr. Alex Shigo is owner of Shigo & Trees, Associates in Durham, N.H.
Leasing Benefits Galore

Buy or lease? That is a question that faces every tree care and landscape business owner. While virtually everyone understands the simplicity of buying, leasing is more complicated. Deciding which is the best strategy is a tough move for anyone.

The lease is a very old legal device. It was employed extensively centuries ago by noblemen and landed gentry to permit others to use parts of their real estate. The lease is still used extensively in connection with real estate—often because property has not been available on any other basis.

Another important factor in the decision of whether to lease or not is flexibility. Ownership, after all, has become incidental in today's business climate. So long as tree care companies are free to use equipment, it is not really necessary for them to own it.

This is practical because under a lease, all of the risks and uncertainties that go with owning equipment are transferred to the lessor. If the equipment becomes obsolete, the tree care business can simply turn it in or have it upgraded. This is especially beneficial with computer systems that are changing so rapidly.

Leasing of property permits the use of property without balance sheet recognition of either the property or the obligation to pay for it. This so-called “off-balance-sheet” financing has become important to many contractors, since it doesn't usually affect the operation's ability to borrow in the future.

Some businesses have sold a major part of their property and leased it back. Others have induced developers to build special-purpose property in return for a promise to lease this property for a long period of time.

The U.S. Department of Commerce reported that of the $379 billion spent by business on productive assets in 1992, $121 billion or 32 percent was acquired through leasing. In 1993 (the latest figures available), $125 billion out of $390 billion of all equipment investment was estimated to have been acquired through leasing. Although these figures are up dramatically from the 27 percent figure reported in 1985, there is still a great deal of confusion over leases.

There are two basic types of leases: The operating lease is a shorter-term lease and runs for a fraction of the useful life of the equipment. Services such as maintenance and insurance may be offered with operating leases because the lessee tends to want to use the equipment, which is often high-tech and quickly becomes obsolete, for a short period of time.

With an operating lease, the lessor owns the equipment, takes the depreciation deduction and the lessee/tree care business has no liability. For tax purposes, operating lease payments are treated as an operating expense, not a capital investment, and are deducted from operating revenues.

A so-called “finance lease” on the other hand, is a lease that has an option at the end where the user can purchase the equipment. The finance or capital lease is a full-payment or closed-end lease. It requires a lessee to purchase the equipment at the end of the lease period at a percentage of the original value or for a nominal amount. The capital lease is usually designed for longer periods than an operating lease. It's similar to an installment sales contract.

Under the finance or capital lease, equipment is capitalized on the balance sheet. The capital lease actually represents a type of loan in which ownership eventually passes to the lessee.

It should be mentioned that many lease terms for trucks, chippers and lifts include insurance, maintenance, taxes and a variety of asset management services usually available only to Fortune 500 companies. As far as service on leased equipment, there is no standard way to handle this. Some lessors automatically include service, with others the desired level of service to be provided must be negotiated.

Many experts feel that high interest rates help boost the leasing industry. When interest rates go up, tree care companies start looking for options other than a bank loan.
Leasing is one of them. Remember, however, leasing is much more than just financing the equipment, particularly when it comes to taxes.

Although the Internal Revenue Service has a great deal to say about the tax treatment of every transaction labeled as a lease, it is actually the FINANCIAL ACCOUNTING STANDARDS BOARD (FASB), a body responsible for overseeing accounting standards, that creates the guidelines. According to FASB Statement 13, a capital lease needs to satisfy at least one of the following conditions in order to be classified as a capital lease:

1. Title passes to lessee at the conclusion of the lease term.
2. The lease contract includes a bargain purchase price.
3. The lease term is at least 75 percent of the equipment’s useful life.
4. The present value of the minimum lease payment equals or exceeds 90 percent of the fair market value of the leased asset.

Not so surprisingly, the ever-vigilant IRS has its own ideas about the lease-or-buy-decision. In fact, so complex are the tax rules, that the IRS retains the right to restructure any transaction, regardless of what it is called, if the terms don’t accurately reflect economic reality.

Whether a transaction is treated as a lease or as a purchase for income tax purposes is important when it comes to determining who is entitled to deductions for business expenses (depreciation, rent and interest expenses). For most leases, the rules for determining whether a transaction is a lease or a purchase evolved from a series of court decisions and IRS rulings. Basically, the rules look to the economic substance of a transaction, not its form, to determine who is the owner of the property for tax purposes whenever the parties characterize it as a lease.

From a financial perspective, the benefits of leasing are apparent: no down payment, low payments, cash-flow savings, flexibility and revenue from use of the equipment. In addition, many small business owners are attracted to leasing by the difficulty that they have in securing bank loans.

In general, tree care businesses with a strong cash position and good financing options can often buy the equipment outright or borrow to acquire equipment with a long operating life. If obsolescence is a concern, a short-term operating lease will provide the biggest advantage and the most flexibility.

Naturally, if cash flow is an issue and the equipment must remain operable for longer periods, a long-term capital lease with a final residual payment will result in lower monthly payments plus a purchase option.

Unfortunately, many business owners jump into leases without computing the long-term expense. If the lease is more affordable month-to-month than the loan payments needed to acquire similar property, many arborists will go that route instead of buying.

Short-term savings, however, may result in higher costs over the entire leasing period. This is especially true with a finance lease where the user can purchase the equipment at the end of the lease. It may end up costing more in the long run. Obviously, it pays to determine any end-of-lease costs beforehand.

Before entering into any lease, it is im-
important to perform a lease analysis. A review of the terms and conditions should include an examination of the lease by specialists in procurement, leasing, accounting, law and, of course, taxation. Remember, the financial difficulties experienced by a leasing company inevitably affect the tree care business leasing equipment from them.

Any leasing company selected should be one that can recommend and provide equipment from several manufacturers, ensuring competitive pricing and a wide selection. The lessor should also be flexible and willing to make changes mid-lease as well as offer creative financing.

Once the decision to lease is made, it is important first to negotiate the selling price with the seller of the equipment. Any reduction of the selling price helps reduce the subsequent lease payments—regardless of whether the lessor is the seller, an independent leasing company or financial institution.

The next step involves shopping around for lessors with the lowest overall lease costs and the most favorable terms. Most casual lease shoppers cannot differentiate between various lease quotes. Each lease proposal is unique, and merely comparing monthly payments is not sufficient because of the additional costs that are usually buried within the lease proposal.

Finally, it is crucial that in all lease negotiations a competitive atmosphere be maintained throughout. This environment motivates lessors to their best performance—and to offer their most favorable terms to any tree care company that has decided that leasing is the path to follow.

Mark E. Battersby is a tax and financial advisor to small businesses. His syndicated weekly column appears in newspapers nationwide.
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"Secure" Hitch for Stumpers
(and other equipment)

By Shaw James Hazen

In our never-ending quest for time-saving innovations, we poach our information from a variety of sources. This month's source is Scotty Rents of Lafayette, Calif. The people at Scotty Rents have conjured up a simple, yet safe and effective means to attach portable stumpers to their trailers.

An L-shaped rod is welded onto the front of the machine and is passed through an eye drilled into a strut on the trailer. Once the end of the post clears the eye, a hitch pin is inserted through a small hole drilled into the end of the rod to provide a solid connection.

This single connection point is triangulated by a nylon strap run from each handlebar to hitches on the trailer's rear end. Truck beds can also be fitted with the same connecting assembly or assemblies to secure various types of equipment, such as spray rigs and rototillers.

Shaw James Hazen is an arborist and freelance journalist in Orinda, Calif.

Do you have an Arborist Innovation? Share your idea with your fellow readers. TCI will pay $100 for published articles. Submissions become the property of TCI and are subject to editing for grammar, style and length. Entries must include the name of a company and a contact person or they will not be considered for publication.

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Baseball has its Babe Ruth Leagues. Nursing has its Candy Stripers. Law enforcement has its Explorers. But, when it comes to cultivating an up-and-coming workforce among high school students, the tree care industry has no similar nationwide feeder system. This fact, according to many who work first-hand with high school students, results in the sad and simple fact that very few high school students consider arboriculture a viable career option. In fact, they say that most high school students they know have never even heard the word before. And that can spell trouble down the road.

This lack of a feeder system is a little surprising when you consider that, according to a recent Gallup survey, residential tree care services alone in the United States generated almost $2 billion in revenue in 1995. This is in a country where there are more than 21 million agricultural-related jobs. Of those, about 2 million are production-oriented. Clearly, there's enough call for enterprising and professionally-minded young arborists out there.

You would think, then, that an industry with this kind of economic clout would reinvest some of its wealth and time in getting itself known among the young, upcoming workforce. But not the tree care industry, it seems. Instead, the tree care industry abides in virtual anonymity on the high school level—among a group of people actively defining their career goals—and it tolerates a turnover in workforce that would break the back of many other industries.

This lack of attention to future growth, while it hasn't destroyed the tree care industry, is one factor holding back professional

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**Helping Youth Succeed in Arboriculture**

ACRT and the U.S. Forest Service have opened two new Job Corps centers to train urban forestry workers. One is in Pine Knot, Ky., the other in Ouachita, Ark. Both are patterned after the successful program operating at Golconda, Ill.

ACRT's two instructors at each site will teach arboriculture and tree care skills in the classroom and in the field. Students who have not graduated from high school work with Job Corps to prepare for their GED. The Job Corps provides the students' food, housing and clothing.

Each center trains 24 urban forestry students, ages 17-24, at a time. ACRT places graduates in entry-level urban forestry positions upon completion of their programs. ACRT Chairman and CEO Richard Abbott urges tree care companies, utilities, municipalities and other employers of tree care workers to consider Job Corps graduates for the many entry-level positions that go unfilled each year due to a shortage of qualified candidates.

"Job Corps graduates," he explains, "are skilled workers who are interested in spending their careers working with their hands. Hiring these people for entry-level positions and providing a field-based career path can reduce turnover appreciably."

For information on hiring Job Corps graduates, or referring eligible trainees to Job Corps centers for direct placement in an urban forestry program, contact Lynn Kindsvatter, ACRT vice president for training, 800-847-3541, Ext. 211. She can also be faxed at 330-945-7200 or e-mailed at LynnK@acrtinc.com.
arboriculture’s maturation into a widely recognized and respected career, say some of the country’s concerned horticultural and agricultural high school educators. It’s a condition that has existed as long as commercial arboriculture itself.

“We, as an industry, need to make high school students more aware that there are more career opportunities out there than they are currently being offered,” says Don Ham, of Clemson University’s Department of Forestry Resources. “We need to get students excited about arboriculture at the high school level and try to help them get into post-high school arboriculture programs.”

What Ham and other educators are seeing is a secondary education system that has yet to acknowledge arboriculture as a profession in and of itself. Rather, tree care education is commonly bundled in with horticulture, landscaping and other green disciplines. This means that, even in vocational technical programs, tree care can command as little as 10 percent of precious instruction time.

A High School Program That Bucks the Trend: But Is It Enough?

One program that bucks that trend is the horticulture program at the Minuteman Science-Technology High School, in Lexington, Mass. There, students can spend up to 40 percent of their studies on tree care-related topics.

“We are far more oriented toward safety and technique than to production,” explains Stephen Noble, department head of Minuteman’s horticultural department. “But our graduates leave with a good understanding of tree care, and, ultimately, that will make them better employees, managers and tree care company owners.”

This fact is borne out by the difference in earnings available to Minuteman graduates compared with others entering the tree care industry.

“We work with local employers on internships and getting the students involved in hands-on projects. One of our graduates who completed an internship got a job straight away and is earning $32,000 per year. He’s getting good benefits, too,” Noble says proudly. That kind of success can be readily emulated if only the industry would become more involved in the education of our high school students, McLaughlin says. His friend Matthew Bora, a sophomore, nods in agreement. “I have family in the forestry business in northern Vermont, so I have a good idea of what tree work is all about. That’s what got me interested in it in the first place,” Bora says.

According to Noble, Bora is a far more typical arboriculture student, in that he has family ties to a related industry. “Most of our students have family in a related industry, be it construction, landscaping or some other field,” Noble says.
Family Ties

Relying on that family connection, however, isn’t going to create an influx of new young and informed candidates for tree care positions, particularly when the number of available high school graduates is at an all-time low.

“Right now, we’re going through the baby bust,” notes Susan Hanley, human resources manager at Evergreen Services Corp., in Bellevue, Washington. Hanley recruits high school and other candidates for employment in the green industry. “Unemployment in the Northwest is running about 5 percent, and only about one percent is looking for work. It’s tough to recruit anyone to the green industry, let alone high school students,” Hanley says.

Savvy tree care firms should acknowledge this scarcity of employable young talent by reaching out to high schools and the community at large, Hanley says. Smart companies will get officers on local boards, and will offer talks, internships, seminars and other activities at local schools on careers in arboriculture. Some if not most of that effort should be aimed at students who aren’t looking to go on to post-secondary education. This early investment in a potential tree worker’s education pays off...
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Students explore career opportunities during the Massachusetts’ Arbor Day. handsomely down the road, Hanley says.

Clemson’s Ham agrees with the early intervention approach to recruiting. “If we can focus more on kids at freshman level then we’ll help them develop a sense of responsibility and make them more aware of professionalism,” Ham says. In the long run, this will bolster professionalism industry-wide, he says.

Taking the Long-Range View

William Scott, the Forestry and Natural Resource Instructor at the Addison Career Development Center of Middlebury Union High School, Vermont also takes a long-range view. Scott has taught at Middlebury for 25 years, and he’s seen arboriculture emerge from being a small part of a dairy/forestry program to become a significant portion of the vocational horticulture program. Yet of his 175 students annually, only about 10 percent take heavily tree care-related courses. Scott feels more students would be interested in arboriculture as a career if they knew more about the industry in a more hands-on and real way.

Those who choose to focus on arboriculture can earn pesticide application certification, they can visit two- and four-year arboriculture programs and they receive a wealth of excellent hands-on and theoretical tree care instruction, Scott notes.

“We try to give students hands-on experience in chain saw maintenance and safety, we work with chippers and we get into basic pruning and tree care. We also have speakers from local tree care companies come in to give talks,” Scott says. These and other programs give his students an edge over less well trained students when it comes to getting a job or moving on to two- or four-year arboriculture programs, Scott notes.
Teaching the Teachers and Quality Control

Another edge that some students have over others—in arboriculture as any course of education—is the quality of the teaching. William L. Thuemmel is the associate professor and head of agricultural and occupational education in the school of education at the University of Massachusetts. Thuemmel teaches the teachers who teach our high school students.

Despite recent federal legislation that outlines a mandate for industry working with students, Thuemmel says the tree care industry still lacks the mechanism, organization and, perhaps, the will to steer youngsters toward a career in arboriculture.

“We try to anticipate what the market will be in the tree care industry ahead of time, and then to prepare future teachers with that information. But teachers tend to get overwhelmed. They have to know what’s happening in industry, keep up with legal reforms, stay current with educational changes and try to keep track of their kids,” Thuemmel says. “What we really need is for the tree care industry to step in and take the lead. We need to get the information to students that they can make a living working as an arborist.”

One way the industry can do that, Thuemmel suggests, is by establishing a cataloging system that lists high school programs that focus on arboriculture, prioritized by important criteria, such as curriculum standards. This cataloging will help ensure that teachers, students and the industry are all working from the same page. This catalog might also help with quality control among those young workers entering the tree care industry.

“The quality of our future is tied in with the quality of our teachers and students. We can provide the methodology and structure in the classroom, but we need a network of (tree care) businesses to take what we do one step further,” notes Thuemmel.

Some Reason for Hope

As bleak as this picture might seem, there are some bright lights on arboriculture’s horizon. Dean Folkers, a partner development specialist at the national FFA Organization (formerly known as Future Farmers of America), says enrollment in his organization has increased markedly. Membership in FFA has increased 150,000 over the past five years, Folkers says. A recent FFA conference in Kansas City attracted more than 41,000 members!

“There is a tremendous amount of opportunity in the agricultural industry. There are 500,000 young people involved with FFA, and, since 1989 and 1990, we have continued to expand what we offer to include non-traditional fields such as forestry and tree care,” Folkers says.

“We’re seeing a tremendous growth in interest in opportunities in the agricultural industry,” Folkers says. But, even still, Folkers emphasizes that tree care companies need to get more involved with high schools if they want the arboriculture industry to continue to grow in a stable and professional manner. “Any collaboration between the tree care industry and our education system can only strengthen and improve the fate of arboriculture and those involved with it.”
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STIHL's new 019T isn't designed for everyone. Incredible balance, a slim profile, and a unique curved handle make this saw ideal for professional arborists. A retractable climbing ring is there when needed and out of the way when it isn't. See-through fuel and oil tanks mean there's no excuse for being on empty in the middle of a cut. The rear air intake manifold is positioned to breathe cleaner air and reduce the time lost to filter cleaning. The slim, contoured profile makes handling in tight places easier and STIHL's optional PMN bar and chain is lighter in weight and fast cutting.

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**New President**

Maureen Lupien, co-owner of Lupien Tree & Landscape Company of Newton, Mass., has been elected president of the Massachusetts Arborists Association (MAA), which represents more than 700 commercial tree care professionals, municipal and utility arborists and allied suppliers. Lupien is the first woman president elected in the MAA’s 65-year history.

Lupien is a Massachusetts Certified Arborist, International Society of Arboriculture-certified arborist, and has authored numerous articles on tree care. She and husband, Herb, are owners of an established tree care and landscape company that was founded by Herb’s father, Waldo, in the early 1920s. Lupien Tree & Landscape Company operates out of two locations in Newton and Weston, Mass.

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**Student Conference**

The First Annual Student Society of Arboriculture Conference and Workshop, hosted by the University of Wisconsin-Stevens Point Chapter, will be April 4-6, 1997. This first-ever, all-student meeting is being held at the Central Wisconsin Environmental Station near Stevens Point, Wis.

Three time International Jamboree Champion, Ken Palmer, and internationally renowned tree biologist, Dr. Alex Shigo, are the featured presenters. The conference is open to all students studying urban forestry, arboriculture, horticulture, landscape design and related disciplines. Students will be able to stay at the site, but space is limited, so early registration is encouraged.

The conference begins on Friday evening with an opening session to welcome students and discuss the format of the conference. Immediately following, there will be a business meeting to assist students from other schools in starting their own chapters of the Student Society of Arboriculture, and to begin planning for the second annual SSA Conference. All students are encouraged to attend the opening session and business meeting to offer ideas and network with other students.

Highlighting the conference are two workshops on Saturday, April 5. Ken Palmer will conduct a climbing clinic Saturday morning, emphasizing climbing theory and safety. Dr. Alex Shigo will lead a discussion in the afternoon on concepts and principles of tree biology with a special emphasis on tree chemistry. The workshops on Saturday will be hands-on and interactive, so be prepared for the April weather in Wisconsin, (0-70 degrees fahrenheit), and come prepared to “talk trees.”

A Saturday evening reception will formally end the event. Plans for the next conference will be finalized at the reception. The total cost for the conference is being finalized, and we are seeking sponsorship to help keep the costs affordable to all students. Students are encouraged to contact their local ISA Chapters for support.

Questions about the conference should be directed to the conference chair Tim Walsh, at 715-346-4192; Fax: 715-346-3624; E-mail at, twalsh@uwsp.edu or write to SSA-UWSP, Mailroom, College of Natural Resources Building, University of Wisconsin-Stevens Point, WI 54481.
SwapLoader, a manufacturer of hook-lift hoists, recently announced an exclusive 24-month warranty. This warranty, a first in the hook-lift industry, covers all parts for an unprecedented 24 months (90 days labor). The guarantee is being offered through SwapLoader distributors nationwide. For more information, contact: SwapLoader U.S.A., Ltd., 1800 NE Broadway, Box D, Des Moines, IA 50316-0386. Phone/Fax: 515-266-3042.

Hidro-Grubert offers several models of truck-mounted and trailer-mounted aerial lifts that offer arborists a less expensive way to reach those upper branches. Standard features include a tool circuit at bucket, air and hydraulic lines, automatic bucket leveling, 360 degree continuous rotation, upper and lower controls and two emergency descent valves. Among the optional equipment available is a hand pump, platform roof top, PTO drive, high-pressure (air or steam) auxiliary line and a tilting platform for rescue operations. For more information, contact Hidro-Grubert, PO Box 470274, Charlotte, NC 28247. Phone: 704-544-9950.

The TaskMaster from HardWood Equipment Company is a versatile, multi-purpose and flexible attachment that can be used as a brush cutter or a feller buncher for trees up to 12 inches in diameter. It is a good tool for right-of-way clearing, power line maintaining and many more applications. The attachment can be mounted on almost any carrier, and is available in several different sizes with various types of cutters. With only a few simple and easy bolt-on additions, you can switch from cutting brush to cutting down trees in no time. For more information, contact HardWood Equipment Co. at 800-897-8269.

The Alpina P34-S saw was designed for professionals, and it has an automatic oiler adjustment conveniently located on the top. It is available with a 12-, 14- or 16-inch bar, and features a two-stud bar mount and see-thru fuel level. This top-handled saw delivers 34ccs of power and performance with a professional piston and cylinder assembly for rugged durability and six anti-vibration mounts for comfort. The muffler is designed to direct exhaust down and away from the operator, and a front, single screw-mounted air filter makes removal and maintenance easy. Imported by Green Thumb Power & Equipment Corporation. For more information, call 800-682-8550; Fax 412-464-1668.

Spectrum Products introduces Treegator Jr, a low-profile, portable-drip irrigation system for low-branched trees and shrubs. It delivers the same well-known drip capability as the original stand-up model. Made of tough PVC to insure strong seams and a puncture-resistant skin. High-quality emitters provide consistent watering rates without the threat of clogging. Treegator Jr. delivers 20 gallons of water in four to six hours with no runoff or evaporation. Call Spectrum Products at 800-800-7391 for your nearest distributor.

SwapLoader, a manufacturer of hook-lift hoists, recently announced an exclusive 24-month warranty. This warranty, a first in the hook-lift industry, covers all parts for an unprecedented 24 months (90 days labor). The guarantee is being offered through SwapLoader distributors nationwide. For more information, contact: SwapLoader U.S.A., Ltd., 1800 NE Broadway, Box D, Des Moines, IA 50316-0386. Phone/Fax: 515-266-3042.

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Olympyk continues the expansion to its re-engineered line of chain saws with the model 980. The 80cc pro saw features a power head weight of 14.5 pounds and develops 4.2 kw power. Other features include an inertia chain brake, isolated fuel tank assembly, a large-diameter flywheel and a new cylinder design for efficient heat dispersion. The gear-driven, automatic oiler is rpm-activated. Maximum no-load rpm is 12,000. To support the introduction of the new 980, Olympyk's importer and distributor, Tilton Equipment, is currently offering a six-month free power head replacement guarantee. For more information, call 800-

The new Model 46 Mulch Bagger from Weaverline Corporation turns a difficult, time-consuming task into a money maker. Mulch is dumped into a large, 46 bushel, Series 400 stainless-steel hopper. The heart of the unit, a 1.5 hp heavy duty dual-voltage motor, transfers power to a series of four augers and conveyor chains. Foot clutch operated, the six-speed conveyor moves bark mulch to the bag chute. Well shielded and constructed for safety and minimum maintenance, the unit is built on a 12-gauge welded steel base with large heavy duty wheels and casters. For more information, contact Weaverline Corporation, 180 Bootjack Rd., Churchtown, PA 17555. Phone: 717-445-6724; Fax: 717-445-9833.

Mountain Town Manufacturing introduces the Woodsman 2000 Series of brush chippers. Its design incorporates a slow-speed-momentum discharge drum with horsepower options ranging from 76 to 325. The Woodsman can chip material up to 20 inches in diameter. Standard features include live hydraulics, electric brakes, heavy-duty fenders, torflex axles and a feed-wheel lift cylinder. For more information, contact Ken Wagner, president, Mountain Town Manufacturing, Ltd., PO 373, Mt. Pleasant, MI 48804-0373. Phone: 517-775-3267; Fax: 517-775-6125; HTTP://www.treechip.com; E-mail: sales@treechip.com

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Tree Care Industry - January 1997

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Shifting Safety Responsibilities

By Amelia Reinert

The Federal Highway Administration, under the Department of Transportation, is entering a new era of safety monitoring based on performance rather than operational controls. This means that the DOT is willing to believe that businesses are capable of designing their own safety programs that will result in maintained or improved accident incident rates. The FHWA will concentrate on evaluating the outcomes of those programs, rather than concerning itself with compliance to record-keeping details. The theory comes from a challenge with President Clinton’s re-invention of government that all federal agencies conduct a zero-based review of policies and streamline performance. While conducting its review, the DOT discovered that it was much more focused on specific measures employed to achieve safety than on the actual safety performance of private motor carriers.

In order to shift focus back to the spirit of DOT safety controls, protection of the public, the FHWA proposed the Motor Carrier Regulatory Relief and Safety Demonstration Project on Aug. 28, 1996. The purpose of this project is to test the efficiency of allowing private motor carriers to determine their own safety controls, and to allow those companies an opportunity to prove their ability to fulfill their responsibility to safety. Success will be measured against the outcome of private safety programs by monitoring accident incident rates of participating motor carriers. The pilot program will be available to a limited number of businesses that must meet strict criteria, including operation of a commercial motor vehicle (CMV) with a gross vehicle weight rating between 10,001 and 26,000 pounds. Excluded from the program are CMVs designed to carry 15 or more people and CMVs that must be placarded for transporting hazardous materials. All participating motor carriers and drivers must have exemplary safety records, must have a safety rating better than “Unsatisfactory,” and have police-reported accident rates of no less than 1.6 per million vehicle miles traveled in the previous 36 months. Program participants must also agree to create a written safety control program and submit it to the DOT, and maintain and disclose to the DOT any and all required data collected during the program’s duration. Despite these requirements, the pilot program offers substantial relief from many current DOT record-keeping rules. As long as the motor carrier is participating in the program, newly hired drivers do not have to provide a list of traffic violations, nor do they have to pass a Driver’s Road Test. Motor carriers would not have to provide Driver Qualification files. Other exemptions include inspection records, drive away/tow away inspections and periodic inspections and reporting.

Although the placarding requirement eliminates many arborists from qualifying for participation in this program in its present form, it is important to identify the step that the DOT is taking here. By recognizing the fact that it is possible for private industry to develop its own procedures to protect safety of both employees and the general public opens the door for greater cooperative communication between the federal government and small business. The regulatory paperwork relief provided through this program demonstrates an awareness on the part of the DOT that it is the active daily commitment to safety, and not the proverbial red tape, that ensures safety.

As the DOT moves forward with this proposed pilot program, each of us should take a moment to think about what is being offered. DOT will monitor the outcomes of the pilot project—the private motor carriers’ ability to implement their own safety controls based on the merits of the results of those controls. If you were developing your own programs, what controls would you put in place? How would you prove to the DOT that there isn’t the need for its intervention within your company? How can we, as a business community, participate in this shift toward private responsibility for the public good by maintaining our own very low accident incident rates? The Motor Carrier Regulatory Relief and Safety Demonstration Project is a dim light at the end of the tunnel for the relief from administrative burden that so many businesses seek. In order to make it work, constant awareness of all matters of safety must be in the forefront. Of course, it has always belonged there. Keeping employees and the general public safe makes good business sense, and makes good human sense, too. Accidents are expensive. They result in increased insurance rates and employee turnover. Regulatory administrative burdens are also expensive in terms of the time spent complying with paperwork. In order to engage DOT and other government agencies in cooperative conversation, private business must demonstrate its commitment to safety at every turn.

At press time, DOT officials are meeting, and final rules are expected by the middle of this month.

Amelia Reinert is the deputy executive director of the National Arborist Association.
Lowering and Rigging Ropes  By Randy Longerich
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The ropes used in lowering and rigging operations are among the most important tools in the arborist’s possession. Unfortunately, all too often the importance of these lines is overlooked when selecting a rope to use. An arborist usually takes great care in selecting a suitable climbing rope, but some may not pay much attention to the type of rope used for lowering. All too often a worn out climbing line winds up being used for lowering, or a piece of inexpensive, and often low quality rope is purchased, many times with disastrous consequences. Lowering operations require ropes that are specifically designed for this demanding application. And, just as with climbing ropes, manufacturers have taken great care in designing lines that have the performance properties considered essential for safe efficient lowering work. Selecting a properly designed lowering line is especially important when using the new generation of false crotch blocks, ratchets, etc. that are becoming more commonplace in everyday operations. These devices require flexible rope constructions that render well in bending situations while retaining their strength and performance properties.

Rigging ropes are typically manufactured using polyester as the primary strength member fiber. Polyester has been selected because it has excellent strength and abrasion resistance combined with low controlled elongation. The elongation of rigging ropes is very important since it is critical that the arborist have control of the load during all phases of the operation. A springy, elastic rope will have too much “bounce” as the load comes on the rope and the ability to control the placement of the load will be greatly reduced. Polyester also has excellent resistance to the damage associated with shock loads, a common occurrence in most lowering operations. Additional features typically associated with lowering lines are enhanced abrasion resistance through the use of tighter, firmer constructions and/or external protective coatings and a good “hand”. Flexibility is also an issue when the rope is required to pass through pulleys and around capstans or other forms of lowering devices.

Generally, three primary constructions are produced for use as lowering lines: 3-strand, single braids and double braids. Each construction has distinct advantages and disadvantages. As with any other tool, the type of rope selected should be based on the requirements of a specific job.

Three-strand ropes are the most economical construction on a per size basis and make very good general purpose lowering lines; however, they are also the lowest strength ropes produced for rigging. The firm construction used in lowering lines provides good abrasion resistance, while the “knobby” surface provides excellent grippage. Some of the very firm designs are rather stiff and may not hold a knot as well as other types of ropes. The twisted construction will tend to rotate under tension which could present some problems in controlling a load.

Single braids are 12-strand “tight braids” that offer very good strength combined with excellent flexibility and “hand”. Stronger than 3-strand ropes, the flexibility and handling characteristics of the single braid make it ideally suited for use with the equipment designed for more complex operations, such as false crotch blocks and lowering devices.

Double braids are torque-balanced, meaning that a suspended load will not tend to rotate. This provides a high degree of control when operating in tight quarters.

Double braids of 100% polyester are the strongest ropes utilized in lowering operations. They are also the heaviest and most expensive of the three rope types on a per size basis, so the general trend is to use this type of rope primarily for operations that require maximum strength. Although somewhat softer than the 12-strand design, the double braids are usually offered with a protective surface coating to provide the additional abrasion resistance required for arborist work. Like the single braid design, double braided rope is very flexible and works very well with all sorts of lowering devices. Unlike the other rope types mentioned above, the end termination that can be obtained with a rope, while knots such as the bowline or figure-8 can reduce rope strength by 30% or more. This makes the double braid ideally suited for making up slings for rigging a false crotch block or for lifting loads with a crane.

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Moving a Tree, Elevating an Image

By Mark Garvin

When developer Steven Cohen bought a small lot in a suburb of Boston, he envisioned turning the house and property into eight condominiums, each selling for more than $800,000. This wasn't his first project, and he expected his latest one to proceed relatively smoothly. But the lot in question is in the suburb of Cambridge, Mass.,—a city with its own foreign policy and a peculiar way of doing business.

Cohen never imagined that a lone tree growing behind the house would threaten to derail his multi-million dollar development. He was surprised when his plan ran into a buzz saw of neighborhood opposition the likes of which would have scared off less determined developers.

The tree in question: A red Japanese maple that neighbors claimed was 120 to 200 years old. (An increment boring placed its age at 69.) The opponents in question: Citizens for Tree Preservation to Save the Giant Cambridge Japanese Red Maple, a collection of Harvard and MIT professors, Nobel and Pulitzer prize winners, who know how to generate negative publicity.

Cohen had paid close to a million dollars for the lot, so he wasn't about to abandon the project. On the other hand, he noted, he lives in the neighborhood and “didn't want to be the bad guy.”

Under the circumstances, what was a lone developer to do? Cohen called in The F.A. Bartlett Tree Expert Company for a consultation. Bartlett, whose motto is “Saving America's Trees,” answered the challenge. After an examination of the maple and some negotiations over price, it was agreed that Bartlett would move the...
tree to the back corner of the yard, away from the path of development.

The lot at 33 Linnaean Street, not far from Harvard Square, fronts a narrow road where the multi-family apartments that crowd near busy Massachusetts Avenue give way to large, single-family homes on smallish lots. The house with the famous maple sits on one of the last plots zoned high density on the border between condos and houses. Most of the lots in this area contain houses that take up almost all of the property. This lot is oversized, and the small house takes up less than one-third of the space.

But by the time Bartlett arrived, the tree had become a rallying point for opponents of the project. The citizens group, composed of four Nobel laureates, a Pulitzer Prize winner and various esteemed professors, began an impressive public relations campaign. They bought an ad in the local paper, distributed flyers, button-holed city officials and invited students at a nearby elementary school to look at the tree before it was too late. One opponent claimed that moving the tree would change its DNA.

The group also sent letters to Bartlett in an attempt to scare the company away. But Bartlett, the oldest tree-moving company in the country, was not cowed. Nor was the Cambridge City Council, which refused a request to have the property rezoned.

"The neighbors were looking for an angle to stop development—without success," stated Cohen. "They latched on to the tree. Suddenly, I was an evil developer who was killing this tree."

With the permits (if not the citizens group) in place, Bartlett went to work. Jim Ingram, vice president and New England division manager of Bartlett, was consulted four months before the move was scheduled. "We have moved trees twice this size," stated Ingram.

As for concerns that the tree would not survive the move, Ingram stated: "Remember, the option was to cut it down."

To improve the health of the tree and increase the odds of success, Ingram started a plant health care program. "Two months before the transplant, we started watering," he explains. "We inoculated the tree with mycorizae and fertilized in the interior of what would become the ball."

"Because the soil is sandy, we started a regular watering program, so the soil would adhere, creating a better ball. This is an old tree that has never been tended. The soil was deficient in nitrogen, calcium and iron. We amended the soil and will continue to do that."

When it came time to finally move the tree, Bartlett brought a crew of 10, who have more than 200 years of combined experience. "We have 14 offices in New England," said Ingram. "And I pulled in my best tree diggers for this job. Their minimum experience is 15 years. The person with the most experience has 40."

Compared to other moves that Ingram has accomplished, the preparation for this one went smoothly. "It is digging well," reported Ingram. "This is a better soil profile than we normally get on Cape Cod, where the soil is sand. There, we move mostly holly trees, which people say are very sensitive and temperamental. But we have had very good success with them."

"We hand-dug 50 yards of soil," related Ingram. "I have transplanted a lot of trees, and by comparison this move was going smoothly. The tree's roots had been cut..."
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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While developer Steven Cohen provided interviews to a TV station, *This Old House* recorded the digging progress. Before for something, possible a septic system. We only found seven roots that were more than 2 inches in diameter.

Instead of stopping the development, the opponents managed to make media stars out of Cohen and Bartlett. “We wanted to save this tree for our own reasons,” insisted Cohen. “It has gone way beyond that now. Who knew it would become such a political issue?”

Once it became clear to the general public that moving old, large trees is possible, media attention turned from the opponents of the project to the spectacle of moving a 55,000-pound root ball. On hand for the move were the *Boston Globe*, *This Old House* and a local TV station. A few curious neighbors looked on, and opponents were nowhere to be seen.

After the root system was balled and burlapped, a 120-ton crane was called in for the move. After several fits and starts to adjust the rigging, the tree was finally lifted and placed in its new location, a feat that prompted applause from the crowd.

With the transplant completed, Bartlett will continue to monitor the tree’s health. “We have 30 inspection treatments scheduled for next summer,” noted Ingram. “We will monitor soil moisture and continue soil testing and mulching.”

As for Cohen, he was anxious to proceed with his construction plans. And the tree that had threatened to derail the entire project ended up making him something of a local celebrity. “Sometimes I wonder why I didn’t just cut the tree down,” muse Cohen. “But in 5 years when the tree is thriving, I will look back and it all will be worth it. This was just the right thing to do.”

Mark Garvin is managing editor of TCI

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Contact: Jennifer Barth, 508-653-3009

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Contact: 330-332-0361

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Robert W. Phillips

Company Mourns Death of Al McGrath

We are saddened to report that Al McGrath passed away on Aug. 27 after a long struggle with cancer.

Al began his career with Wright Tree Service in 1982 after retiring from US West as Transportation Supervisor for the state of Iowa. Al spent 14 years with WTS as Equipment Manager, developing specifications, purchasing and selling equipment and battling repair and equipment problems. He developed solid relationships with many WTS vendors that have stood the test of time and continue today.

We will miss Al and his cheery dedication to WTS and his job. Al firmly believed that no job was impossible. He performed every task he assumed with determination and a positive attitude, whether it was buying a million dollars worth of new equipment or directing the cleanup and restoration after the very destructive flooding of Wright's home office in the summer of 1993.

Al was a great source of support and advice. Our relationship went well beyond that of a vendor and a buyer. His absence leaves a big void and the personal loss of a good friend. I know you will join me in extending our heartfelt condolences to Al's wife Shirley and his children Mark, Kris and Nancy in the loss of Al McGrath, husband, father, grandfather and good friend.

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The NAA’s Winter Management Conference, Feb. 4-9, 1997 in Nassau, Bahamas is about networking with friends, associates and business partners. An extensive, well-rounded educational program is balanced with fun-in-the-sun activities—just the perfect getaway for everyone.

The 1997 Winter Management Conference is made possible in part by the NAA Associate Members who host this conference. Each company represents a leading manufacturer or provider of vital services to the arborist industry. For this event, companies have graciously provided their resources to foster long-term relations while at the conference.

Special events include the Opening Reception on the beach, keynote speaker Wayne Outlaw, “Total Customer Service,” Blue Lagoon excursion, Excellence in Arboriculture Reception & Dinner, several outstanding speakers, breakfasts hosted by Associate Members, dolphin encounter/shopping, the NAF Golf Tournament, sunset cruise, and the Junkanoo Theme Party.

Registration information has been mailed all NAA Member firms. An Early Bird discount is available through January 5, 1997. The Marriott Crystal Palace Resort in Nassau, Bahamas is our host hotel; for reservations 1-800-222-7466, ext 316 or 317—call before the Jan. 11 room block release. And we do suggest making plane reservations right away: 800-631-9675. When making hotel and airline reservations, identify yourself as an NAA Winter Management Conference attendee.

Should you wish to receive registration information, phone the NAA at 800-733-2622 today.

Associate Member Hosts


Altec Industries, Jimmy Walden: manufacturer of aerial lifts, chippers

American Arborist Supplies, Richard Miller: providing full line of rigging equipment, safety gear and much, much more

Bandit Industries, Jerry Morey, Mike Burke, Dennis Tracy: manufacturers of drum and disc-style chippers, recycling machines

Corporate Capital Leasing Group, Valerie Hayes, Bruce Krah, Eileen Gresens: featuring the Arbor Card and fast, pre-approved leasing

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The Doggett Corporation, Roger Mellick: providing professional slow-release injectable tree fertilizers

Husqvarna Forest & Garden Company, Steve Woods and Don Roop: manufacturing arborist chain saws, clearing saws, cut-off saws and lawn & garden products

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Tree Management Systems, Jon & Donna Garner: providing ArborGold Software for the Newton Portable handheld computer and IBM-compatible home-based PC

Vermeer Manufacturing Company, Denny Vos and Vince Newendorp: manufacturers of brush chippers, stump cutters, tub grinders for the arborist industry
Arboriculture, like medicine, has changed considerably in the past century. Human infections and diseases that were once treated with amputation or salves are now treated with precise doses of antibiotics, proper nutrition and rehabilitation. The same is true for arboriculture. Tree surgery and spraying are carefully being supplemented by highly targeted micro-injection and by correcting environmental stresses on trees. Mauget tree care seminars focus on tree health and environmental protection. These one-day, informal seminars for owners, managers and applicators, are designed to update the way arborists view tree health care. Bring your questions about diseases, insects, nutrition, pruning, spraying, wound treatment, and the impact of tree care on the environment. No other seminar provides as much practical and up-to-date information about tree health care.

Seminars will be held throughout the United States. Take one day this winter to update your view of tree health care at a Mauget Seminar. For information on a Mauget Seminar near you, contact a distributor listed or call (800) 873-3779.

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Experienced climber/foreman needed for established Massachusetts tree service. Self-motivated arborist, certificate a plus, to work in a drug-free environment. Send resume or call Holbrook Tree Service, 252 Union St., Yarmouthport, MA 02675. Phone: 508-362-8085.

RELOCATE TO FLORIDA and enjoy year-round employment, great weather and a terrific working environment. We are growing fast and need: foremen, climbers, sales people and all-round tree care professionals and helpers. Excellent compensation and benefits with opportunity for advancement. Drug-free workplace. Call 407-968-1045.

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Experienced tree care professionals. Fast growing, quality-oriented company in the Chicago North Shore looking for top-notch foremen to manage crews, equipment and shop. Ideal candidates will have a minimum of 3 years experience, CDL and strong desire to achieve. Excellent compensation & benefits package. Please send resume and contact the Kinnucan Company, 28877 Nagel Ct., Lake Bluff, IL 60044. Phone: 708-234-5327.

Ira Wickes/Arborists, a leader in the green industry for over 68 years, seeks quality oriented individuals to help us continue our growth. Dedicated, career-minded candidates are needed for all facets of our organization, including Sales, General Tree Care, Plant Health Care, Integrated Plant Management and Turf Care. We consider professionalism, quality, safety and teamwork to be essential to our operations, so if you'd like to work in this environment, bring your experience and ideas to Ira Wickes /Arborists at 11 McNamara Road, Spring Valley, NY 10977. Phone 914-354-3400 or Fax 914-354-3475.


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Arborist Needed to join our professional staff of Shreiner Tree Care Specialists, Inc., located in the beautiful suburbs of Philadelphia, PA. We provide secure, year-round employment, and excellent pay and benefits based upon your level of performance and production. Individuals must be proficient tree climbers with an exceptional pruning ability. We will train and assist with becoming an International Society of Arboriculture certified arborist. We will happily assist with relocation. Please contact our office or fax your resume. 610-688-4122: FAX: 610-995-9355.

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Are you a person willing to put forth extra effort to help yourself and your company succeed? We are seeking motivated individuals to fulfill positions in general tree care, climbing, PHC and sales for our offices throughout the metro areas of Chicago, Connecticut, New York, New Jersey and Washington, D.C. Our company offers excellent benefits, training and advancement potential. Send resume to Kathy Hendrickson, The Care of Trees, 2371 S. Foster Ave., Wheeling, IL 60090. Phone: 847-394-4220.

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January 1997 (Expires April 1997)

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(3C) Governmental Entity
(4D) Advertising Agency
(5E) Extension Service
(6F) Hospital, Golf Course, Office/
- Apartment Complex or Other Institution
(7G) Consulting Firm
(8H) Utility
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Indicate your title: (check one)
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(13B) Manager (general)
(14C) Vice-President
(15D) Manager (general)
(16E) Superintendent
(17F) Forester
(18G) Supervisor
(19H) Director
(20J) Purchasing Agent
(21K) Grounds Manager
(22L) Consultant
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(42C) supplies (e.g. hand tools, climbing gear, protective wear)
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BUSINESS/INDUSTRY
Indicate your primary business: (check one)
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(2B) Manufacturer/Distributor
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(6F) Hospital, Golf Course, Office/
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(7G) Consulting Firm
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TITLE
Indicate your title: (check one)
(12A) Owner
(13B) Manager (general)
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(16E) Superintendent
(17F) Forester
(18G) Supervisor
(19H) Director
(20J) Purchasing Agent
(21K) Grounds Manager
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Is your company an NAA Member?  __Yes  __No
I approve the purchasing of:
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(41B) equipment (e.g. trucks, chippers, chain saws, stump grinders)
(42C) supplies (e.g. hand tools, climbing gear, protective wear)
(43D) services (e.g. computers, insurance, training, repair)
I recommend the purchasing of:
(50A) chemicals (e.g. fertilizers, fungicides, insecticides, herbicides)
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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 Vermeer Manufacturing Company, a leader in the tree care industry. Their World Wide Web site gives browsers, customers, dealers and job hunters the opportunity to learn more about the company, its products and job openings.

Users can select one of five categories, including equipment, employment, company background and customer service, or access general information about Vermeer. Information on equipment includes applications, specs and special features on track trenchers, utility trenchers, directional boring, pneumatic boring, compactors, brush chippers, stump cutters, tree spades, tub grinders, hay processing and parts and accessories. The customer service section describes how to find local dealers. A request form can be E-mailed to Vermeer for more details.

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All in the Family

When family members work together in a tree care business, common problems arise: From intense emotions and inheritance disputes to a higher-than-normal turnover of non-family employees, the challenges of a family business are unique and different from those faced by similar small businesses. Nevertheless, while each family is distinct, the obstacles tend to stay pretty much the same. By recognizing and reacting to those special circumstances, you can promote familial harmony and run a successful business at the same time. What are the keys to promoting peace and profits?

1. **Separate home and office.**
   An informal relationship at home should be replaced by a more structured, formal interaction at work. A professional attitude at work helps to reduce conflicts, helps confine personal problems to the family dinner table rather than the office, and reminds non-family employees that business comes first.

2. **Don't let your lazy in-laws take advantage.**
   Almost every family business eventually must face the dilemma of what to do with that relative who can't seem to find or hold a job. Don't simply hire your sister-in-law's useless brother then hope for the best. If you have to carry this person on your payroll, get the most out of him. Find out if he has any transferable skills. Search for an area of interest that might be useful with some training. Train him, and if it doesn't take immediately, train him again. Have a non-family member supervise him, and let both of them know that you expect results. As a last resort, find him a job with someone else.

3. **Encourage outside employees.**
   Ambitious non-family employees need special attention within your business. If all promotions are awarded to family members, then crew leaders and top sales people will leave. Whenever a top employee quits, find out why. This may help you establish procedures within the company to attract and retain high-performing non-family employees.

4. **Hire outside advisors and attorneys.**
   Advisors with no connection to the family offer new ideas, and they can remain removed from family politics. Decisions and written agreements on partnerships, transfers of ownership to children, loans and succession should be clear, legally binding and executed by advisors and attorneys who have no financial interest in the outcome. Recognize that you are not alone. Even if the other tree care businesses in your area aren't family enterprises, your community is filled with families working together in other businesses. Reach out to them. You might be surprised by how much families in different businesses have in common with yours.

A family business offers special advantages and rewards. Relatives tend to be more loyal, and the chance to work alongside those with whom you grew up adds special meaning to work. Don't let common interpersonal stresses interfere with the opportunity for financial success for your entire family.

Giving is Not a Given

Every conscientious employer wants to reward the best workers with bonuses to say thank you. But employers should think twice before handing over tickets to a sporting event or a gift certificate. There's a good chance that a gift will be considered compensation by the IRS and, therefore, subject to taxation.

To complicate things even more, there's no single IRS source to consult for determining which gift is taxable. The "guide" used by the IRS is that if a gift can be said to have a dollar value, it must be included as income to the employee. But, if the gift is a product or service that is so small that it is unreasonable to consider it as income, then it is not taxable. There is no specific dollar amount to use as a guide, yet there are many penalties for not complying with gift and bonus tax laws.

How small is small? What is unreasonable? If your employee cannot derive any cash benefit from the gift, the likelihood that the tax man need get involved is reduced. For instance, if you give an employee a $10 gift certificate to a supermarket chain, then that clearly has a dollar value. If, however, you give a "non-negotiable" certificate, which is redeemable for only one specific and inexpensive item - a turkey - then you have effectively reduced the cash value of that certificate.

Be warned, though, putting a dollar amount on your certificate amounts to an admission that the item has a dollar value and it must be recorded on an employee's W-2. The only sure way to avoid breaking this law is simply not to give gifts and bonuses. But, with the trend these days turning toward more companies giving gifts and bonuses, that isn't very practical. Instead, you should direct any questions regarding gifts to the IRS or your accountant.
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Learn From Experience

By Gordan F. Arb

When I started my business about 24 years ago, I needed a part-time job. There were a lot of very large dead elm trees in the area, and just as many homeowners desperate to get rid of them. I got liability insurance and a city license, borrowed a winch truck, ropes and saws and went to work.

As I look back now, I am sure the saying that “God takes care of fools,” applies to me. I do not like to climb. Fortunately, these trees were falling apart and too dangerous to climb, so I soon began felling huge trees with very little room to spare.

One day, I received a phone call from a nearby city, where a large, hollow Hackberry tree needed to be removed. This tree was right next to a house and hanging over a mobile home near a highway. To remove it, it was necessary to block one lane of the road. My son and a friend who wanted the firewood went with me.

I stepped off the distance and told them where the tree would fall. I made a mark on the pavement with my shoe so they would remember. While I was wrapping a chain around the tree to hold the trunk together, our friend told my son that he was going to stand on that mark and did not intend to move. I wish he had told me, because when I cut the tree, it landed so close to him that a big swish of air blew his hat off. All he felt were a few leaves brush his face.

He later told me that he had wanted to run, and that he thought I should be more generous in stepping a tree off next time. I quickly told him that there wouldn't be a next time.

I still do not climb, but I have an aerial bucket truck now. I hope a lot more “smarts” than I did on that day. I work by myself with no helpers, and, yes, I still take down large dead trees. I guess I shouldn't be too hard on myself, because over the years I have been called numerous times to get others out of trouble in their endeavors to be “do-it-yourselfers”.

My advice to others is get proper training and equipment. And if you do good work, don’t plan on a tree service being a part-time job for long.

Gordan F. Arb, a certified arborist, is the owner and operator of “Top Notch” Tree Service of Emporia, Kan.

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