Whether we’re working on a storm emergency or scheduled line clearance, you can rely on us to get the job done efficiently and safely. If there’s one thing we’ve learned over all these years, it’s that reliability counts.

And while we’re proud of our 75-year track record, we remain committed to innovation and added value. These are the tools we use to deliver reliable service. And that helps our customers deliver their services . . . reliably.
That Was Then...

This is now!

The Evolution Continues...

With an exciting line-up of machines from the pioneer of modern brush chipping technology. Backed by Morbark's exclusive two-year warranty and supported by a world-class network of equipment dealers.

Celebrating our 45th year of uncompromising dedication to innovation and quality.

1-800-831-0042 • 989-866-2381 • www.morbark.com
Mother Nature gives us a two-edged bump up …

I happened to be in the DC/Baltimore/VA area right as the cleanup from Hurricane Isabel was in high gear. This was my second experience with a major storm, having been in the middle of Hurricane Hugo in North Carolina about 14 years ago. I honestly didn’t have a lot of patience for those who were complaining about no power after three or four days, when my experience lasted two weeks. A major flood in Georgia in the ‘90s wiped our power out for three weeks.

Knowing the people who happen to be part of the solution after storms now — you — I was not the person to whom complaints about hurrying up were to be made. I tended to be very protective and a little short-tempered around situations that would put my members in danger during these times. Safety was my number one mantra, and you’d be surprised how many civilians got a slightly different understanding of what was happening after “chatting” with me. I changed a few tunes; especially when I learned and shared that there were five fatalities in one week. I’m still trying to get the data on who these people were — linemen, arborists or others.

I lost count of the number of articles in the local papers that covered this area and the number of times it was addressed on TV. What I did hear repeatedly was that cities and communities have not paid attention to what is being planted, how near the lines, or to putting enough funding into tree maintenance. Hallelujah!!

At the same time, a study conducted by American Forests was released using Landsat satellite data from the mid-80’s to ‘90s. All together, we have 21 percent fewer trees in urban areas than 10 years ago. So while this storm of the century was devastating in many ways, we are also experiencing higher costs due to air pollution, storm-water removal, and energy from a lack of trees.

Mother Nature wreaked havoc on us and called attention to urban tree planning at the civic level and also called attention to our community directly from residents. The media exposure received, while negative for power companies, was great in terms of understanding appropriate practices and who should be used to solve these problems. Everyone I talked to understood who was a big part of helping them out of their crises. People who were regular clients of tree care companies in the area spoke glowingly of the help they received.

The only negative I saw was one article that talked about storm pricing for tree care services, and it wasn’t a positive piece. We need to be careful about practices along these lines. In my experience, governors and legislators frequently make it a crime to increase prices above increased costs in times of strife. We need to make sure that the good feelings we can generate from providing great services to our communities aren’t eroded.

As hard and as dangerous as storm work is, it is a tremendous opportunity for us to earn positive media exposure for our industry and to highlight the key services we provide to our communities.

So on the one hand, Mother Nature gave us a bump up with a serious event that brought our services to light in a positive way. In another way, Mother Nature also gave us a situation that put the spotlight on the worst of our industry. We need to keep working together to professionalize arboriculture, arborists, and best business practices so the one-offs are so out of the ordinary that they don’t color those who take care of their communities in tough times and in good times.

Staff safe and keep up the GOOD work!
Access the best in equipment, application expertise and support.

It's the Terex Utilities organization, an uncommon network of equipment distributors working together. Terex Utilities Network provides an unparalleled level of application expertise and product support to help ensure your Telelect Hi-Ranger tree trimmer investment is productive, available, and delivers the lowest total life-cycle costs. It's a winning combination - single source access to a wide range of products and services, the financial strength of a major corporation, and customer focused and responsive local representation. Tap into this valuable resource. Contact your Terex Utilities Network Representative now.
November
continued on page 6

Features

8 The Case Against Drop-Crotch Pruning
   By Cass Turnbull

34 Successful Strategies for Sustainable Streetscapes
   By Karen Doherty, David V. Bloniarz and H. Dennis P. Ryan

66 Mammal Damage to Trees and Shrubs
   By Harry W. Pepper

86 Sawflies and Wasps
   By Sonya Senkowsky

92 Helping Plants Survive Armillaria Root Rot
   By J. Harold Mitchell

Departments

2 Outlook
   By Cynthia Mills, CAE
   Make the most profitable use out of storm damage opportunities.

16 Washington in Review
   By Peter Gerstenberger
   Crane rule committee ponders operator qualification.

18 Industry Almanac
   Important regional and national meetings and activities

TCI’s mission is to engage and enlighten readers with the latest industry news and information on regulations, standards, practices, safety, innovations, products and equipment. We strive to serve as the definitive resource for commercial, residential, municipal and utility arborists, as well as for others involved in the care and maintenance of trees. The official publication of the nonprofit Tree Care Industry Association, we vow to sustain the same uncompromising standards of excellence as our members in the field, who adhere to the highest professional practices worldwide.
Not Jr. ...
Super Jr.

Features:
• 25 HP Kohler
• Oscillating Wide Front Axle
• Cutter Wheel Brake
• Hill Brake
• Hydraulic Steering
• Fits Through 36" Gate

With all these standard features there is nothing junior about the RAYCO RG 1625A Super Jr. self-propelled stump cutter.
November

continued from page 4

<table>
<thead>
<tr>
<th>Departments</th>
</tr>
</thead>
</table>
| **Branch Office** | By William J. Lynott  
Tax savings ideas for 2003 you may have overlooked. |
| **Cutting Edge** | New products and news in the tree care industry |
| **Plant Profiles** | By Andrew Cowan  
Ivy – a friend to wildlife and a foe to trees? |
| **Off-Season Business** | By David Munson  
Catch the drift and earn some new business by designing and planting winter windbreaks. |
| **Money Management** | By Dick Proudfoot  
Opportunity in an uncertain economy |
| **People of Tree Care** | By David Munson  
The distance from Poland to Ohio isn’t counted in miles. |
| **Business of Tree Care** | By Jean L Seawright  
Smart hiring does not happen by accident. |
| **Safety & Training** | The most important difference between an accident-free driver and a poor driver is attitude! |
| **Diagnosis & Technology** | By Richard G. Rathjens, James A. Doolittle, Greg Mazur and Alan R. Siewert  
Ground-penetrating radar can be a tool for diagnosing shade tree soil problems. |
| **Plant Care** | By John and Barbara Stropko  
Handling cacti properly helps survival rates. |
| **Human Resources** | By Phillip M. Perry  
Putting a lid on workers’ comp costs. |
| **Reader’s Forum** | By Russell Ball  
Restricting the use of aerial lifts in arboriculture. |
| ** Arboriculture and the Law** | By Russell E. Carlson, RCA  
Creating a win-win situation in disputes over trees and views. |
| **Classified Advertising** | Help wanted, services, businesses, new and used products for sale |
| **TCIA Reporter** | Safety and training products, news, commentary and benefits of membership with the Tree Care Industry Association |
| **Tree News Digest** | The latest news, stories and information on trees from around the world |
| **From the Field** | By Steve Pregler  
One of the lucky ones after almost three decades |
When it comes to sourcing great climbing gear, Sherrill remains in a permanent state of "bent-over-backwards." After several attempts to source a similar design from abroad, but unable to satisfy safety concerns, Sherrill approached Buckingham Manufacturing about putting their "work-duty" touch on another rolling hip tree saddle design. Within a year of sitting down with experts from ArborMaster training, Buckingham completely redesigned and then unveiled a list of first-rate improvements never before seen in this type of suspension saddle. Among some of its highest rated features are: the ability to change worn components easily, quick release buckles rated to 5,000 pounds (not 2,200), heavy-duty but lightweight construction.

Working arborist will be pleasantly surprised at the comfort, mobility and wide-ranging adjustability of the Glide. No similar design has the strength of hardware or durability of materials utilized by Buckingham to support America's professional arborist. The Glide meets or exceeds all applicable safety standards including OSHA, ANSI, ASTM and European CE. These easy-access buckles at the legs and waist, provide quick entry and exit from the Glide with the ability to adjust or lengthen easily for a true "custom fit." The heavy-duty back pad has ample storage loops and rings (12 in all), 2 carabiner slots, a soft belay loop (for training or rescue) plus the ability to incorporate a full body harness. All major parts of this saddle are removable, adjustable and replaceable with little more than a flip of a wrist.

### Features

1. **NEW larger d-rings with lock-back option**
2. **Smooth-rolling suspension**
3. **Quick release steel buckles mean adjust it once and then clip in and out**
4. **Waist, leg and pelvic adjustment points**
5. **High-strength alloy motion rings**
6. **Training/rescue belay loop in back**
7. **2:1 hip-adjustment system**
8. **Various hardware attachment points**
9. **Carabiner pass through positions**
10. **Well padded, supporting design**

The Glide is a component saddle consisting of waist belt, leg straps, pelvic connectors and interchangeable suspension bridge, all designed to fit the way YOU climb! Special Elastistrap suspenders attach to the Glide for added support to the "hip challenged" crowd. Components not interchangeable with the Pro series saddles. (optional RED color shown)

### Price List

- **Glide Saddle (green and gold)**
  - Choose from S, M, L, XL*  
  - 30027 (+size) ..... $269.
- **Glide Saddle (blue)**
  - Choose from S, M, L, XL*  
  - 30028 (+size) ..... $269.
- **Glide Saddle (red)**
  - Choose from S, M, L, XL*  
  - 30024 (+size) ..... $269.
  - *(add $15 for XL)*

**Suspenders with dorsal d-ring (yellow)**
- One size 30025.............................$55.

(A) High strength, abrasion resistant Glide suspension bridge (made by Samson), stands up to regular use and can be easily exchanged. Available in 5 different lengths (measured end to end of blue/tan cover material) 10, 11, 13, 15 and 17 inches. 9,000 lbs. tensile strength.

**Suspenders with dorsal d-ring (yellow)**
- One size 30026 (+size) ..............$38.

© 2003 Sherrill, Inc. SHERRILL is a trademark of Sherrill, Inc. VERMEER, and VERMEER LOGO are registered trademarks of Vermeer Manufacturing Company in the US and/or other countries. All Rights Reserved.

See us at TCI EXPO 2003!

Please circle 83 on Reader Service Card
In recent years, a number of experts in the field of arboriculture have advanced crown reduction as a responsible way to keep trees safer, longer. It is more plausible that the negative effects of large-scale crown reduction (herein referred to as drop-crotching), outweigh any real or perceived benefits in risk reduction. Light-handed, over-all size reduction (herein referred to as crown reduction) on the other hand, may do little harm to trees but likewise serves little purpose in reducing hazard potential.

The absence of proof
To my knowledge there is no research showing that either drop-crotched or moderately crown reduced trees are significantly less likely to fail or live longer than their unpruned counterparts.

Compartmentalization
There is, however, research indicating that drop-crotch cuts pose greater health and safety risks than true thinning cuts. A look at the patterns of decay developed by Dr. Alex Shigo, which show us that:
1) the use of thinning cuts minimizes the entry of decay into trees;
2) drop-crotch cuts are more difficult to compartmentalize; and,
3) heading or topping cuts are the most damaging to trees.

Decay and energy expenditure
When trees are drop-crotched decay is introduced into major scaffolds. Decay is a major cause of trunk and limb failure. Furthermore, a drop-crotched tree is forced to deal with the pruning wounds. And compartmentalization costs the tree energy stored as carbohydrate reserves. If the tree is mature, or dealing with other stresses, drop-crotch will further weaken its defenses. This can hasten, rather than postpone, the tree becoming hazardous and its eventual demise.

Root loss
Opinion persists that when a tree is made smaller it retains the roots of the larger tree, and therefore will naturally be safer as a result. But do we know this? On the contrary, there is evidence that drop-crotched trees respond by losing root mass. Plus trees stressed in this way are less able to defend against pathogens, such as root rots which are a frequent culprit in cases of blow-down.

Structural integrity of limbs
The structural integrity of scaffolds may be degraded by making drop-crotch cuts. By way of explanation, I remind arborists that “trunk wood is different than branch wood" (Shigo). A lateral branch is “laminated” in place, sharing wood with the scaffold or main stem only in a small part at the lower, underside of the branch where it joins the parent stem. When a scaffold is drop-crotched it is no longer made of continuous wood. The new scaffold is made up of the main stem plus the side branch (which is “laminated in place.”) It is quite possible that the point of transition from main stem to side branch is weaker than the continuous wood of the original scaffold. By the time the new, drop-crotched scaffold reaches the same length as the original, hasn’t the arborist simply replaced a sound scaffold branch with one of lesser structural integrity? It may or may not be so, but we certainly need more solid research before we conclude that a shorter tree or a drop-crotched limb is a better one structurally.

Long-term health and safety
A drop-crotched tree is probably made safer in the short run, but more dangerous in the long run. The same can be said of tree topping. I assert that any treatment that makes trees less healthy and more dangerous in the long run must be eschewed by professional arborists. There are things which can be done to mitigate the hazard potential of trees without inflicting major damage, such as thinning and cabling in moderation. But the major service provided by the ethical arborist in response to fears of public safety must be the hazard tree evaluation itself. If a tree with a high hazard rating cannot be dealt with by either moving the target or using the above-named measures, it is best to remove the tree.

Crown reduction and the young, healthy tree
It could be countered that the modest crown reduction on younger, healthier trees will do little harm. But this begs the question, “What good does it do?” The over-all reduction in “sail” and lowering the center of gravity is equivalently modest, and perhaps even negligible. Experienced arborists know that such pruning does not restrict size. A young, healthy tree will simply respond to crown reduction by accelerating its growth rate. Soon it will be the size it was before. It has been my observation that pruned or unpruned, over the course of years, trees of the same age and species will be within 10 percent of the same size. (Exceptions are bonsai and pollarding, but they are irrelevant to this discussion.) If the tree does not grow faster after crown reduction, it is most likely due to poor health or old age. In this case, crown reduction has worsened
the tree’s health and long-term safety. Smaller cuts cause less dam-
age but are dubious in value, except perhaps to mollify the anxious
tree owner.

Defensible uses of drop-crotch cuts
This isn’t to say that there are no defensible reasons to reduce
trees. If cuts are small, and the tree is young and healthy enough
that such pruning does not degrade its long-term health and safety,
then pruning to mollify the tree owner (to keep a view, or so that
the tree seems safer) could be considered ethical pruning. In truth,
very little pruning is done to benefit the tree itself. But this is dif-
gerent than believing in and promoting over-all crown-reduction
as a bona-fide hazard reduction treatment.

Drop-crotch cuts used to repair a tree that has been damaged
by storm or previous mal-pruning are defensible, as are those made
to suppress one of two competing leaders on young trees. And
directional pruning using drop-crotch cuts to train trees around
utility wires is appropriate, though replacement with smaller grow-
ing species is preferable. But this is a far cry from arborists selling
either modest crown reduction or severe drop-crotching as a gen-
eral way to make tree safer.

What makes sense?
An unintended consequence of both overall crown reduction
and drop-crotchning is that arborists reinforce the public’s belief
that trees are dangerous because they are “too big.” Some arborists
(an astounding number, really), like their clients, apparently share
this subconscious belief that size reduction is the obvious rem-
edy. This might be true if trees were simply inanimate wood objects
whose structures could be redesi-\ned like that of a bridge or
building. They are not. They are bio-
logical organisms that respond to our
cuts. Judgments by arborists are of-
ten based on what “makes sense” and
“gut feelings” rather than hard bio-
logical science. But, under scientific
scrutiny, much of what used to
“make sense” in tree care has been
proven to be ineffective or detrimen-
tal. Examples are legion. Cutting
back the branches of newly trans-
planted trees to “compensate for root
loss” has been shown to delay, not
improve re-establishment. Flush
cuts, used to encourage rapid closure
and “healing” in trees, have been
shown to increase decay by opening
new areas of the tree to decay or-
ganisms. Wound seals and pruning
paints have been proven ineffec-
tive at stopping decay. Adding soil
amendments to the planting hole
has been shown to have no effect
on the rate of growth or survival of
the trees being tested. By now, ar-
borists should have a healthy skepti-
Cism for tree treatments based on “common sense,” even
when it is their own!

Supposition, not fact
Since good scientific data on how pruning affects tree safety
and longevity is still minimal, the mixing of scientific fact with
“educated guesses” is common and is probably the best that can
be done by the arborist working in the field. This only becomes a
serious problem when the mixture of fact and supposition-dressed-
up-as-fact appears in arboricultural literature as expert advice to
new recruits. Unfortunately, such instances are becoming more
common. Readers would be well advised to read critically, and
respond publicly. Too many experienced and educated arborists
in disagreement with the conclusions set forth in recent crown-
reduction arguments have failed to respond in the public forum.
This is unfortunate, because most new people in the field take as
 gospel what they read in trade magazines and journals, or hear in
conference lectures.

Critical reading
To give the reader examples of what I mean by critical reading,
let me examine several articles advancing drop-crotch pruning and
crown reduction that have been presented to arborists in the pub-
lic forum. Specifically, I will examine:
1. The Management of Ornamental Trees by Pierre Rambault
that appeared in The Journal of Forestry, 1998;
2. Two lectures given by Claus Mattheck that I personally at-
tended wherein he advocates both the topping of hazardous trees
and crown reduction to correct over-extended trees;
3. Structural Pruning of Large Shade Trees by Henry F. Davis
III, published in the September 2002 issue of Tree Care Industry
magazine;
4. The Role of Pruning in Plant
Health Care by John Ball published
in the April 2003 issue of Arborist
News;
5. Reducing Failure Potential by
Ed Hayes, which appeared in the
July 2003 issue of Arbor Age.

The French treatise by Raimbault
is mainly devoted to a fascinating
description of the characteristic
branching of a tree during different
stages of its life (syntactic reitera-
tions, propeletic reiterations, etc.).
Only briefly, during final com-
ments, does he hint at what the
practical applications of this infor-
mation might be. For example, he
says, “The more the tree ages phys-
ically, the less that pruning has
the capacity to slow down the aging process.”

He clearly implies that trees
might benefit, live longer and ex-
ist in a safer state if they are pruned to delay development of
the characteristic “mature” tree
crown. This is an unsubstantiated
leap in logic that ignores the nega-
tive biological consequences that
such pruning would entail. Simply
because a tree is pruned to look
like a younger tree, is it? Does a
facelift mean that a person is younger or do they just look that way? Their health and longevity remain unaltered. In the case of a mid-life tree that is pruned to keep from developing a characteristic more mature-tree crown, it is equally plausible to argue that such a tree will reach earlier senescence by being forced repeatedly to compartmentalize in response to the pruning cuts and by the reduction in its dynamic mass.

It is undisputed that Claus Mattheck has contributed immeasurably to the understanding of the physics of trees. He advocates remedies, however, that ignore the biology of trees. He also dismisses the realities faced by the tree care professional. His advice to "save" the decayed, hazard tree by topping it relies on two flawed arguments. The first is that the resulting new, weakly attached shoots will be dealt with through follow-up care, before they pose a threat. And second, that an arborist doesn't have the right to decide what should or shouldn't be done to a person's tree. That decision, he contends, belongs rightfully to the tree owner.

No one can guarantee the follow-up care of trees. Americans change residences an average of once every seven years. What are the chances that the new tree owner will know that the tree needs to be re-pruned, or being told, will agree to do so? What are the chances that the same arborist will even be in the picture five, ten, 20 years later? Isn't it more likely that the arborist will move, sell the business or even change professions? The likelihood of a continuum of follow-up tree care is slim, indeed. When the abandoned tree (either drop-crotched or topped) fails, injuring people or property, who will be held accountable? The long-gone tree-lover who insisted on keeping a hazardous tree, or the professional arborist who should have known the likely outcome? Any hazard mitigation treatment which is likely to make a tree more dangerous in the future and which also depends on a continuum of care should be rejected by ethical arborists. New cabling systems with the potential to girdle trees in the future are highly suspect for the same reason. They depend on a continuum of care that cannot be guaranteed and which, in fact, is highly unlikely to occur.

Like the tree topper, Mattheck proposes that it is the tree owner who has the moral authority to determine treatments. It is precisely because trees can cause future harm to people and property, however, that the responsibility lies with the professional. An electrician cannot wire a house in a manner which is not up to code, even if the homeowner insists. This is because more than one person can be reasonably expected to own the same home. Leaving unsafe wiring inside the walls of the home endangers future owners. Likewise, more than one owner can be expected to own a tree. It is incumbent upon the tree care professional to maintain the long-term safety and health of the tree for future owners as well as for tree care workers who might otherwise climb an unsafe tree.

Both Mattheck and Henry Davis assert that trees commonly grow in ways that should be corrected. At the international ISA conference held in Seattle last year, Mattheck pointed to global warming as the possible cause of "over-extended" tree growth. Where is the proof of this? And Davis speaks of the urban tree, having been removed from its native forest habitat, as
being the “unnatural tree.” Different perhaps, but unnatural? Just how and how many of these unnatural trees are dangerous? He asserts that the main danger posed by the “unnatural” tree is that it is multiply-ledered, instead of retaining the stronger, single-leder form of the forest tree. But then he recommends crown reduction for shade trees and even excurrent conifers, which must necessarily create broad heads and multiple-ledered trees. It is not clear whether such pruning is just for “overmature” trees with decay or for young trees as a general safety measure. He wrote, “Conifers can be successfully drop-crotched and shaped, as has been proven for hundreds of years.” Is this true? Without the continuum of care, aren’t these trees likely to become more hazardous? Later in the same article, he asserts that no follow-up pruning is needed on a shade tree that is properly drop-crotched, “if it is done approximately one-third of the way through the normal life of the unnatural shade tree.” What is the evidence? Are trees really made safer by this one-time pruning? I am not convinced.

Davis further argues that drop-crotching works because:
1. it has been a widespread practice;
2. it has been done over a long period in European history;
3. other pruning such as pollarding and bonsai are known to maintain tree health and extend the lives of trees.

These are hardly compelling arguments. The use of pruning paint enjoys a similarly widespread and long history of devoted advocates, and was first introduced by the head gardener of England’s royal family, European arboricultural history, and especially that of Germany and France, is rife with over-management and mismanagement of trees done for their own good. Shigo showed many examples of these tree-saving measures in his early slideshows. He often included a plea to “Respect the dignity of trees” by removing them instead of continuing dubious trussing, filling, cutting, and other treatments used in hopes of extending their lives—“unnaturally” extending their lives, I might add. Sentimentality must be put aside by the professional. An old tree is not your grandmother or your client’s, nor is it a war “veteran.” Pulling the plug may not be a popular decision, but it is the more ethical one. Retaining (or, as the advocates are fond of saying, saving) the hazard tree does so at the expense of endangering future tree owners and tree climbers.

Davis uses a wonderfully authoritative sounding euphemism for drop-crotching, calling it “structural pruning.” But he provides no evidence that such pruning improves the structure of limbs. His conclusion that such trees live longer seems to rest on anecdotal evidence comparing them to their unpruned counterparts. As proof he states that “it is well documented that during a severe storm that went through France just a few years ago, trees that had been properly pollarded or structurally pruned survived in most cases. Those that had not were destroyed.”

Are we sure? How many drop-crotched trees weren’t even counted because they were already gone by the time the storm hit, having died or failed earlier from such detrimental treatment? And why are we mixing drop-crotched (structurally pruned) and pollarded trees when Davis has taken pains to differentiate them? In any case, readers are owed the data in order to evaluate the validity of its conclusions for themselves.

As long as trees do not respond with watersprout growth or sunscald, Davis seems to think that the tree’s health is being preserved with drop-crotching. He does not address health issues such as the introduction of decay and difficulty in compartmentalization that are the likely result of such pruning. On the contrary, he makes the assertion that, “Structural pruning traps available nourishment in a limited framework after pruning.”

Although illustrations accompanying the article show modest crown reduction, the text and photos indicate otherwise. He recommends 4- 5-inch cuts in most trees, and up to 10- to 12-inch cuts in very large trees.” As an example of proper structural pruning, the author says, “A red oak is reduced almost 40 percent, meaning that 40 percent of the live dormant limbs are on the ground under the tree when the pruning is done.” Such large drop-crotch cuts and the huge amounts of foliage removed cannot do other than cause major damage to these trees.

John Ball’s article contains much better and scientifically defensible information. He clearly outlines the dangers of thinking of thinning as the magic solution to the dangerous tree. Unfortunately, he then asserts, “The best means of reducing the risk of tree failure is not to punch holes in the sail but to reduce the size of the sail, particularly its height. Once again, crown reduction pruning in conjunction with judicious thinning may be the best approach.”

Nowhere, to my knowledge, has it been proven that moderate crown reduction significantly reduces failure potential. Alternately, if Ball prefers arborists make larger over-all drop-crotch cuts, (which would, in fact, significantly reduce “sail”), the physical damage done to trees is considerable and the long-term hazard potential may be increased.

In Ball’s article, as well as other articles advocating crown reduction, we are not referred to any studies showing the efficacy of crown reduction in hazard mitigation. In the above articles advocating moderate crown reduction or more severe drop-crotching, there is also a conspicuous lack of discussion of...
For ... SERIOUS Stump Cutting!

Buy from the Original Manufacturer
Established 1954—over 45 years
800 421-5985

Stump Claw Teeth
Stump Claw Pockets
B-11-C
B-1-C
Regular (Std.) Teeth
Round Reversible Pockets
Threaded Stump Cutter
Hodges Stump Cutter
Short Bolt
Long Bolt

Econo Teeth
New SMART Pockets

PAT #5,379,345

Now Manufacturing and Distributing “STUMP CLAW TEETH”

Border City Tool & Manufacturing Co.
23325 BLACKSTONE • WARREN, MI 48089-2675
810/758-5574 • 800/421-5985 • FAX 810/758-7829

Please circle 20 on Reader Service Card
Euphemism is "retrenchment pruning." In attached limbs. Cuts to prevent it from "collapsing or falling apart under its own weight due to excessive end-loading on long weak attached limbs."

This time the more attractive-sounding euphemism is "retrenchment pruning." In his article, the example we are given is a photo of a Pawlonia in Baltimore's Leakin Park that has been heavily drop-crotched. We also see a tree behind it. Both suffer from extensive trunk decay. The rot and "over-extended, weakly attached" limbs on the tree in the background appear to be the result of other topping or drop-crotchting done for "safety" reasons 25 years previously. Where Hayes sees a photo of a saved tree, I see a photo of two pathetic tree remnants, trees so over-pruned and mal-pruned, so scarred and damaged by man, that they are as painful to look at as a dog with all four legs amputated. The net result of retaining and drop-crotchting the foreground tree is that it will die sooner and, until then, show park visitors an example of what they will interpret to be the right way to prune trees, which it is not.

The "too big" tree

The worst part about crown reduction is that it validates the notion of the "too big, dangerous tree." Working arborists fight this public misperception on a daily basis. Size is a small factor in assessing structural integrity and safety of tree. It is simplistic to continue thinking a smaller tree equals a safer tree. Trees don't fail because they are too big, they simply have the potential to do more damage. Elephants don't fall down more often than pigs, it's just more impressive when they go down! Skyscrapers don't collapse in earthquakes more often than small buildings, and taking off the top 20 stories isn't the way to make a building safer. It is the flaws in the sites and the buildings themselves that constitute the hazard, and it is the flaws in the trees and their surroundings (the 70-year-old cottonwood, the root rot, or the thin layer of clay soil that becomes saturated) that create the potential for failure. (Oddly enough, engineers know that an 11-story building is most likely to fall in an earthquake. Above that height a building becomes safer again.)

A more perfect future

I proffer the following scenario as a goal for working arborists. In this imaginary, ethical tree company, the major activities are moderate thinning and deadwooding of trees, moderate crown-raising, removals, crown restoration of previously mal-pruned trees, and hazard tree evaluations. Hazard mitigation (cable, brace, thin) remains a lesser part of the workload, available to the customer but not actively promoted. Overall crown reductions are less than 2 percent of the tree work. Tree topping and lion's tailing are not performed at all. Depending on circumstances, the business owner may be unable, initially, to achieve this ideal work distribution. But the business owner should continually move toward the goal. It is also true that businesses can reduce or eliminate overall crown-reduction pruning far sooner and more readily than they suppose. The latest generation of PlantAmnesty arborists in Seattle have proposed that all instances of overall crown reduction and tree topping be excluded from the referral service's acceptable practices list. They do not rely on such work themselves.

In the more perfect future, a major part of the arborist's time will be spent working with builders and planners to help them avoid retaining hazard trees and preventing construction damage to the remaining ones. Arborists will evaluate trees for heritage tree programs, insurance claims and for tree ordinance compliance. The arborist will be hired to train young trees (e.g. reducing included bark). When the concerned tree owner consults the arborist, he will request a Hazard Tree Evaluation and follow the arborist's recommendations. The tree owner will no longer express safety concerns by automatically requesting removal, topping or crown reduction. Hazard Tree Evaluations, themselves, will become increasingly refined, scientifically based, and done according to a nationally codified system.

A definition of good pruning

Arboriculture frequently borrows the maxim from the practice of medicine that says: "First, do no harm." A more accurate statement for both professions would be, "Do more good than harm." Surgery, for example, certainly does harm. A knife cuts into the human body causing serious injury and the potential for infection. But, presumably, it is outweighed by the overall good done by repair or removal. All pruning wounds trees. In general, thinning cuts are less harmful than drop-crotch cuts, and drop-crotch cuts are less harmful than non-selective heading/topping. It is true that trees can withstand a lot of pruning. The real question is, "At what point does the wounding done by pruning outweigh the benefits to the tree or the tree's owner?"

I have given the matter a great deal of thought. One good recommendation is "Don't do anything you wouldn't do to your own tree." I say only do good pruning, and good pruning is defined as pruning that maintains or improves the long-term health, safety and beauty of the tree. The arborist is then free to please the customer in many ways, as long as the long-term health and safety of the tree is retained. Arguably, drop-crotchting reduces long-term safety and longevity of trees, and modest, over-all crown reduction does little to reduce failure potential. Therefore, until more solid evidence emerges to the contrary, the widespread use and promotion of overall crown reduction (either modest or severe) to reduce hazard potential should be abandoned.

The next worst thing

I often think of the words spoken by John Hushagen, owner of Seattle Tree Preservation, several years ago at Seattle's Center for Urban Horticulture. He was a panelist in a debate on topping trees for safety. He said, "Let's call drop-crotchting what it is. It's topping and it's the kiss of death for trees!" Although drop-crotchting is not the same as tree topping (and both he and I know it), it is the next worst thing. Drop-crotchting is bad for trees. Some arborists feel that it is justified on certain occasions. But make no mistake, as a general rule, drop-crotchting should be avoided, not promoted by arborists.

Cass Turnbull is a lecturer, author and founder of PlantAmnesty in Seattle, Wash.
Samson Ropes for the Professional Arborist

The engineers at Samson have been staking their reputations on the quality and excellence of the ropes they design and manufacture for over 100 years. The professional arborists that use them stake their lives and their livelihoods on the same ropes every working day.

Samson’s comprehensive line of ropes for professional arborists is the direct result of listening to the needs of the professionals who rely on them daily. It’s how we’ve done it all along. Taking the best of both worlds and bringing them together into products that perform in real workplaces, for real people.

Climbing lines that have evolved with the techniques used in the real world. Rigging lines that support and control the loads this demanding workplace can dish out. Even throwing lines that make rigging a little easier. All are the result of applying the latest fiber technology to the design and manufacture of ropes that are used in the real world.

Visit us at www.samsonrope.com, you’ll find complete information, product specs and dealer locations wherever you work.

The professional describes his “favorite throw line... I start with a 10 oz. shot pouch for the 1.75mm or a 12 oz. shot pouch for the 2.2mm and go Zing-it!”

Ken Palmer
• ArborMaster Training, Inc.
• Certified Arborist

THE Best of Both Worlds

Sees rope as a collection of synthetic fibers constructed into a strength member with known properties matched to a range of loads within a specific environment.

Sees rope as a critical partner in maintaining safety and productivity.

See us at TCI EXPO 2003!

www.samsonrope.com

SAMSON
ROPE TECHNOLOGIES
The Strongest Name In Rope®

2090 Thornton Street, Ferndale, WA 98248
Phone: 800/227-7673 Fax: 360/384-0572

Please circle 79 on Reader Service Card
Crane Rule Committee Ponders Operator Qualification

Members of a federal "negotiated rulemaking committee" agreed that construction crane operators ought to be tested on their skills before being allowed to operate equipment during meetings held Oct. 1-3 at the Department of Labor.

Discussions between employers, crane makers and union representatives on the committee revealed support for operator qualification that might include:

- a physical examination every three years;
- a written exam that is valid and reliable;
- a hands-on test.

At the third monthly meeting of the Cranes and Derricks Negotiated Rulemaking Advisory Committee (C-DAC), members also expressed support for requiring operators to be retested every five years. Operators need to be tested to combat complacency and to ensure they keep up with changing technology and regulation, members said.

Still under discussion is whether a revised version of the Occupational Safety and Health Administration standard for cranes and derricks would require that operator exams be developed to meet certain testing standards or be obtained through an accredited entity.

The OSHA standard currently enforced for construction crane use is over 30 years old – so old that it doesn't address types of cranes prevalent in the industry today. Understandably, OSHA is pressing the 22 members of C-DAC to finish their work in one year.

Even though tree care employers are not typical subject to Construction standards, this particular one will undoubtedly influence all crane operations.

Operator Qualifications

Support for requiring crane operators to certify their skills and knowledge was nearly unanimous on the committee. The idea of requiring operators to show their qualifications was included in a draft rule revision that was developed by an earlier OSHA work group and which C-DAC is reviewing.

Aside from the safety issue of ensuring an operator's skills, a national certification system would have practical value. It would limit the number of operator certification systems that employers would need to track, members said.

States and cities are increasingly taking up the issue of crane operator certification. Twelve states already require crane operator qualification, and initiatives are pending in several others.

Crane Accidents

The number of fatal workplace injuries in which a crane was listed as either a primary or secondary source for the incident was higher in 2002 than in 2001, according to the latest Bureau of Labor Statistics' data.

There were 47 fatal work injuries in which a crane was listed as either a primary or secondary source of the injuries in 2002. That total is up from 26 in 2001 and above the 1997-2001 average, which was 37 fatal work injuries.

The overall count for crane-related fatalities is estimated at about 80 workers per year, based on data from 1992-2000. OSHA has said that the three major causes of fatalities around cranes are electrocutions – often from running the crane into an overhead power line – struck-bys, and falls.

Peter Gerstenberger is vice president of safety, standards and compliance for the Tree Care Industry Association.
Bandit's Beast Recyclers turn big logs, brush, chips, stumps, leaves and more into valuable mulch and wood fuel.

New coloring attachment!!

The Beast is now able to color mulch using a dry granulated, oxidizing colorant that covers extremely well while adding very little moisture. The mess common with liquid and powder colorants is eliminated. The colorant costs under $3 a cubic yard for most colors.

Complete line of hand-fed chippers

6”, 9”, 12”, 15”, and 18” capacity hydraulic feed disc and drum style.

Whole tree Chippers Designed for Urban Use

Practical machines with loaders to take labor costs out of tree disposal. 18”, 19” and 24” diameter capacities, with or without loaders. Towable or self propelled.

Bandit's Beasts

Choose from 4 models

275 - 1000 HP

The most cost effective machines for converting green waste to mulch.
Events & Seminars

November 13-14, 2002
Pacific Northwest Utility Vegetation Management Conference
Valley River Inn, Eugene, OR
Contact: PNW-ISA office at 1-800-335-4391 or info@pnwisa.org

November 17-22, 2003
Climbing Skills / Level I Rigging / Precision Felling, Chainsaw Safety and Maintenance Module
ArborMaster Training, Inc. Richmond, VA
Contact: (860) 429-5028 or Info@ArborMaster.com

December 5-6, 2003
2003 Plant Biology Workshop
Plant Health Care, Inc. Education Center
Frogmore, SC
Contact: Selina Marx at (888) 290-2640 or phcmarx@direcway.com

December 8-11, 2003
Ohio Turfgrass Conference and Show
Greater Columbus Convention Center
Columbus, OH
Contact: 1-888-683-3445, www.OhioTurfGrass.org or otinfo@offinger.com

January 5-9, 2004
Advanced Landscape Plant IPM PHC Short Course
University of Maryland
College Park, MD
Contact: Debbie Wilhoit, (301) 405-3913, or www.pest.umd.edu/events/events.html

January 11-13, 2004
2004 Empire State Tree, Nursery, & Landscape Conference
East Wind Resort Hotel
Wading River, NY
Contact: New York State Nursery/Landscape Association, 1-800-647-0384; N.Y. State Arborists, (845) 855-0225; or www.nysnia.org

January 12-15, 2004
Turfgrass IPM Short Course
University of Maryland
College Park, MD
Contact: Debbie Wilhoit, (301) 405-3913, debrar@umd.edu or www.pest.umd.edu/events/events.html

January 13-15, 2004
Congress 2004
Canada's International Trade Show and Conference
Toronto Congress Centre, Toronto, Canada
Contact: Landscape Ontario Horticultural Trade Association, (905) 875-1805, e-mail: showinfo@landscapeontario.com

January 16-17, 2004
Oklahoma Nursery and Greenhouse Trade Show and Convention
Tulsa, OK
Contact: Mike Schnelle, (405)-744-7361 or mas@okstate.edu

January 21-23, 2004
Iowa Nursery & Landscape Association
INLA Annual Convention & Trade Show
Polk County Convention Center
Des Moines, IA
Contact: Nancy Langemach, (816) 233-1481

March 25 - 27, 2004
TCI EXPO Spring
Sacramento Convention Center
Sacramento, California
Play it safe with your people and your business. Get aerial lift and aerial rescue training from ACRT.

An empty aerial lift truck can be a scary thing for your business. So can an untrained operator. That's why ACRT provides expert training in both aerial lift operation and aerial rescue. Efficient, effective 1-day courses are OSHA compliant, providing graduates the skills and knowledge they need to work safer, faster and smarter.

Upon completion, graduates receive certification in aerial lift and rescue competence that stand up to OSHA inspection. Founded as a training company in 1985, ACRT Inc. brings a higher level of expertise to your business.

Now training in Ohio. To schedule call 800-622-2562 or visit our website www.acrtinc.com

Would you rather have it empty for one day, or forever?
If you’re inclined to let your accountant do all the worrying about your business and personal income taxes, you could be making a costly mistake.

"Your accountant may be the tax expert," says Tom Normoyle, a CPA in Huntingdon Valley, Penn., "but no one knows the fine details of your company’s finances as well as you. That’s why your accountant needs your help to hold your income taxes to a minimum."

Filing deadlines for your 2003 tax returns are still many months away, but you only have until Dec. 31 to make sure that you’ve done everything possible to keep Uncle Sam’s paws off as much of your money as possible. Here are some steps you can take now to slash your 2003 tax bill:

Accelerate payments and defer income

Tax experts agree that accelerating payment of bills and deferring income wherever possible are among the most effective ways for you to reduce current year taxes.

"Pre-pay as many of your business-related bills as possible by Dec. 31," recommends Paul Rich, a CPA with Siegel Rich Division of Rothstein Kass in Roseland, N.J. "Prepaying your rent and anticipating supply needs are often overlooked ways to reduce current year’s taxes."

If you’re self-employed, consider buying your first three months of supplies for next year before Dec. 31. If you’re an employee, you can accelerate employee business expenses as well. Pay any outstanding bills before Dec. 31. If you don’t have the cash, use your credit cards. The IRS allows you to take the deduction in the year of the charge.

Other expenses that lend themselves to pre-payment are state and local taxes and professional fees. If you’re paying estimated taxes, make your fourth-quarter state tax payment by Dec. 31 rather than in January.

Before the end of the year, make charitable contributions that you would normally make early in 2004. That way, the charity gets the money early and you get a tax deduction for 2003.

Rich also suggests that you donate used business equipment to a nonprofit before the end of the year. Be sure to get a receipt and an estimate of the fair market value of the goods you donate. If you’re audited, no receipt means no deduction.

Note that 2003 is the last year that a business can take an increased deduction for donating used computer equipment to a school or library. Instead of throwing the old equipment out, you can donate it and take a deduction equal to its cost basis, plus one-half of its fair market value.

If you’re self-employed, you may deduct charitable contributions up to a whopping 50 percent of income under some circumstances. If you have equip-
ment that might fall under this provision, talk to your tax advisor about the possibility of donating it before Dec. 31.

If 2003 has been a good year for income and your accounting is on a cash basis, you can reduce this year’s taxes by delaying collecting of accounts receivable until the new year. For example, you could consider giving your customers an extra month to pay, invoicing at net 60 instead of net 30 as a “holiday gift.”

However, if you expect abnormally high income or a change in marital status or state residency next year, your marginal tax rate could actually increase despite the general reduction in rates. If so, consider reversing the above process by bringing in that extra income now and putting off deductions until next year.

Take advantage of the new tax laws

The Jobs and Growth Tax Relief Recom-
JGTRRA reduces individual marginal tax rates, while keeping corporate rates the same. That change will tend to make partnerships and limited liability companies more attractive. At the same time, a maximum dividend tax rate of 15 percent combined with a top corporate rate of 35 percent leaves a potential 50 percent tax on income earned at the corporate level.

If you're self-employed, don't forget that this is the first year a self-employed individual can deduct 100 percent of health insurance premiums. Now is the time to make sure that you pay everything by year-end.

"While the new tax laws have incorporated many tax breaks for business," says Wall, "they are now more complicated than ever. She suggests that every small business owner consult with his or her tax advisor to determine how to take maximum advantage of the changes.

Save more for retirement

Make sure that you're contributing the maximum to your 401(k) or other tax-deferred retirement plan. If not, adjust your savings before year-end. If you're self-employed, open a tax-deferred Simplified Employee Pension (SEP) or Keogh plan by the Dec. 31 deadline.

In recent years, the IRS has increased contribution limits and made it easier than ever to put more money away to fund your retirement years. Except for the new Roth IRA, all contributions to your retirement plan are tax deductible in the tax year they are contributed.

"You don't actually have to make your contributions until you file your return in April of 2004," explains Pimlott, "but you must open the account by Dec. 31 in order to get the tax deduction for 2003."

Set up a new retirement plan

"If you're a small employer without a retirement plan, you might want to set one up before the end of the year to take advantage of the tax credit of 50 percent of the cost of establishing and/or maintaining the plan. The credit, available for each of the first 3 years, is limited to $500 per year.

Use IRS Form 8881 for this purpose, but the procedure is tricky, so you will want to consult with your tax advisor before proceeding.

Trips that combine business and pleasure

Did you make any trips that combined business and pleasure this year, such as TCIA's Winter Management Conference? If more than half of your time was devoted to business, you can deduct transportation costs as well as all directly business-related expenses. If more than 50 percent of your time was spent on pleasure, the cost of transportation will be disallowed.

Of course, if the trip was entirely for business purposes, such as attendance at TCI EXPO, all expenses associated with the trip may be chalked up to business expense.

Many business travelers don't keep adequate documentation for travel expenses. As a result, they risk losing out on deductions. Documentation for travel and entertainment should include the business purpose and such details as where, when, who you were with, and a receipt for any expense over $25.

Use of your personal car for business

Even if you only used your personal car for business occasionally, you may deduct the costs of maintenance and operation for the business-use portion. In figuring your auto expense deduction, you may use either actual expenses or the standard mileage rate.

When you use actual expenses, you deduct the business portion of car expenses including depreciation, gas and oil, insurance, licenses, parking fees, registration fees, repairs, tires, tolls, and even garage rent. Under the standard mileage rate for 2003, you may deduct a flat 36 cents per business mile (down from 36.5 cents per mile in 2002).

Purchases financed by loans or credit cards

If you bought any business equipment or supplies on your credit card or with a business loan, you may deduct those purchases this year even if you won't pay off the loans until later. While you're at it, don't forget to deduct any interest costs on the loans themselves.

Balance out investment gains and losses

This has been a volatile year for investments. Some did poorly while others rebounded nicely. By selling appreciated assets and liquidating under-performing investments, you may match gains and losses to minimize your personal income taxes.

If you have sufficient losses to offset your gains, you may deduct the losses this year on sales completed by Dec. 31. Note, however, that tax rules limit the amount of capital losses that you can use to offset ordinary income to $3,000. If your net loss totals more than $3,000, don't worry. You can carry forward the losses over $3,000 every year until you use them up.

On a related note, if you've hesitated converting your traditional IRA to a Roth IRA because of income taxes that would then become due, this might be a good year to convert, provided you have losses to offset the income.

Of course, you can't rearrange your business affairs to accommodate every twist and turn of the tax laws. Still, whittling down your payment to Uncle Sam every year is worth the effort. If you can cut just $1,000 off your tax bill each year and invest that money in your tax-deferred retirement account, after 20 years you'll have added an extra $60,000 to your nest egg. After 30 years, it will be more like $160,000 - all at Uncle Sam's expense.
As a tree care expert, you know the value of experience, knowledge and the right tools. It’s the same in the insurance industry. The Hartford put down roots and began growing almost 200 years ago. For years, we’ve been helping arborists to protect their livelihood with an insurance program designed especially for your industry. Find out why hundreds of arborists across the country choose The Hartford to protect their business.

Call your agent today or call The Hartford at 1-800-533-7824. For more information, visit our Web site at www.thehartford.com/arborists.
Towable Chipper

Bear Cat announces the addition of a new 6-inch engine-driven, towable chipper to its large line of outdoor power equipment. The 6-inch chipper includes a live hydraulic feed system with a variable speed feed roller with instant reverse. The feed roller is 15 inches in diameter, with a 13-inch wide opening containing 10 knife blades. A 360-degree rotating 6.7-inch discharge chute extents to the end of the hitch. Available in the Bear Cat 74624 Honda 24-horsepower OHV twin-cylinder gas engine or a 74628 Kubota 28-horsepower, three-cylinder diesel liquid cooled engine. Both have a 6.5 inch x 13 inch feed opening with a wide open feed chute measuring 36 inches wide by 33 inches tall. Telescopic tongue with 2-inch ball coupler, adjustable jack stand with wheel and adjustable rear stabilizer, 60-inch wide trailer. Crary Bear Cat is a division of TerraMarc Industries. For more information, contact Crary Bear Cat, 237 NW 12th Street, West Fargo, ND 58078, 1-800-247-7335, or visit www.bearcatproducts.com.

Brush Cutter Tractor

The Geo-Boy brush cutter tractor, is designed for clearing brush and small trees in difficult locations. Self-contained and highly maneuverable, the Geo-Boy is powered by a Cummins diesel engine and features various cutter head options. The Geo-Boy can be trailered without any special permits and features a rear view camera and a ROPS and FOPS certified cab with climate control for safety and comfort. Track mounting helps the Geo-Boy maintain an extremely low ground pressure rating and low center of gravity making it well suited for all types of terrain. The Geo-Boy is now available in both standard and heavy-duty models. Direct all inquiries to Geo-Boy, 1731 Gault Street, St. Peter, MN 56082, Phone: 1-800-436-2691, Fax: 1-507-934-4706, or visit www.geo-boy.com.

Anti-Transpirant

Protect evergreens from winter damage with NU-ARBOR Anti-Transpirant. Anti-Transpirant polymer may be used as a plant dip or sprayed from a backpack or pressure sprayer. Used as plant dip, it has been proven to effectively reduce moisture loss from plants by as much as 50 percent. Anti-Transpirant applied to evergreens will prevent damage and allow plants to keep their healthy color through winter. It leaves plants looking natural and aesthetically beautiful. Fast drying, water based, easy to use, mixes readily with water, economical. For additional information, contact NU-ARBOR Products, 1-888-773-8777.
GCX Body

This revolutionary body is the first to offer high-styled, high-impact ABS plastic outer door skins and body rear end panels, larger compartment clear door openings, and mechanically fastened construction for improved corrosion resistance as standard features. The new STAHL GCX is a rugged service body with large secure storage compartments and an open cargo space for hauling equipment. It features clip-on door seals for improved protection against water leaks, a galvanized steel rear step bumper, high-styled light package, concealed door hinges for security, and a removable slam-locking tailgate with rotary latch and corrosion-resistant plated hardware. Rear vertical doors are rearward opening. Constructed of corrosion-resistant galvanized steel, the GCX is covered by STAHL's 5-Year "No Rust, No Bust" Warranty. Visit www.STAHL.cc for more information.

AG4300 Auger

RedMax's AG4300 auger is rugged and powerful enough to take on nearly any soil condition, and win. The 20-pound auger is the company's biggest. The powerful 41.5cc two-cycle engine drives a 2- to 8-inch auger through a 45:1 reduction transmission. With the ability to accept augers from 2 to 8 inches and drive them through "stump puller" gearing, the AG4300 has the power, durability and versatility to dig holes for fence post and deck supports, or even holes for small trees and shrubs. RedMax's one-year commercial warranty is standard, and a two-year warranty is available. For information, contact RedMax, Komatsu Zenoah America Inc., 4344 Shackleford Road, Suite 500, Norcross, GA 30093. 800-291-8251, ext 213, fax 770-381-5150, or visit www.redmax.com.

Throw Line Keeper

Performance Throw-line Keeper has many uses and may become your best friend. Made of sturdy ½-inch thick ABS plastic with a specially designed wide handle allowing for a two man pull, it is great for retrieving broken limbs/hangers. The Keeper has a 14-inch rap with balance and makes neat/simple throw-line storage. You can purchase your Keeper for $24.95 with free shipping anywhere in the US. Crew packs of five for $100. View a demonstration at www.shadevalue.com or call 1-877-Save-Tree to order. Throw-line and throw-balls available. Contact: performancetree@aol.com. Fax: (225) 292-9965. Office: (225) 292-9952.

Tree Anchor

Berkshire Products has redesigned their smallest tree anchor, the #3C. The new anchor features an improved point design for easier driving and thicker steel for increased holding power. Berkshire Earthwings is a tree staking system available in three sizes: #3C for trees up to 3-inch caliper, #5C for trees up to 5-inch caliper and #10C for trees up to 10-inch caliper. They are particularly useful for trees planted in sandy soil or in windy locations. Earthwing tree anchors are made of steel with a pre-attached galvanized cable and give a professional looking, securely anchored tree at an economical price. The patented design makes them easy to install in three steps: drive anchor, pull to lock in place, attach to tree. For information, contact Berkshire Earthwings at (413) 229-7919 or visit them at www.BerkshireEarthwings.com.

Send Cutting Edge News to:
TCI Magazine, 3 Perimeter Road, Unit 1, Manchester NH 03103.
Or e-mail: Garvin@treecareindustry.org

See us at TCI EXPO 2003!
Dow sells tree growth regulator business

Dow AgroSciences announced recently the sale of its tree growth regulator business, including Profile 2SC, to Indianapolis-based SePRO Corporation. Profile 2SC (containing the active ingredient paclobutrazol) is a soil applied, growth regulator that offers vegetation managers and their customers an alternative to standard tree trimming by reducing branch growth in the crown of the treated tree.

SePRO will begin marketing and servicing Profile 2SC immediately within the United States. “We are excited about the impact Profile will have on our growing portfolio of plant growth regulators, especially in the tree growth regulator segment,” said Bryce McMillan, vice president of SEPRO.

Simonds Industries to merge with International Knife & Saw

Simonds Industries Inc., a leading provider of industrial cutting tools, today announced a plan to merge with International Knife and Saw, a leading provider of industrial knife products. The merged company, Simonds International Corporation, will have product offerings of cutting tools and related products in the wood, pulp, paper, metal, and other industries.

In conjunction with the merger, Simonds has also announced a plan to recapitalize the company that will significantly reduce its indebtedness, opening the way for renewed investment to continue its business momentum. Simonds’ lenders have unanimously agreed to a debt for equity exchange in order to accomplish the recapitalization of the company. Both the merger and recapitalization are subject to the closing conditions that are usual for transactions of a similar nature and scope.

“This merger and recapitalization plan is the final phase of restructuring undertaken by Simonds. The restructuring plan demonstrates the commitment made to our customers, vendors, and employees to focus on delivering new products, improving customer satisfaction, and strengthening the company’s financial structure,” said Ray Martino, president and CEO of Simonds.

Banner year for Becker Underwood

Becker Underwood, Inc., the world’s leading producer of rhizobium inoculants, beneficial nematodes, seed and landscape coatings, turf products and other agricultural specialties, achieved record sales during its 2003 fiscal year ending Sept. 30, according to Roger Underwood, company CEO. Combined sales from its operating divisions exceeded $60 million, up over 24 percent from the previous fiscal year, with sales projected to reach $70 million in 2004.

“Since 1982, the company has grown through a combination of new product development and strategic acquisitions,” said Becker Underwood President Peter Innes. We have made acquisitions on three continents over the past 12 months, and are very pleased with the progress made in integrating those businesses into Becker Underwood.”

Becker Underwood began in 1982 with a single product, Spray Tracer, developed for “spot-spray” applications of herbicide. Today it is an international developer of products for the seed, agriculture, landscape, turf, greenhouse, pest control and retail garden markets.
CONE-HEAD CHIPPERS™
From Dynamic Manufacturing

The Heart of ALL Cone-Head Chippers!

- less labor
- less horsepower
- less fuel
- less knife wear
- less vibration
- MORE PROFIT!

SEE US AT BOOTH #900 AT TCI IN BALTIMORE.

400 Series
12” - 15”
60 - 160 h.p.

Module Kit

300 Series
6” - 10” - 40 - 100 h.p.

500 Series
18” - 21” - 125 - 300 h.p.

Each series offers multiple sizes and horsepower ranges to suit your individual needs. Options and specifications upon request.

DYNAMIC manufacturing corp
5059 W. Weidman Rd. - P.O. Box 39 Weidman, MI 48893
Phone: (989) 644-8109 - Fax: (989) 644-6697
www.dynamicmfgcorp.com

Please circle 29 on Reader Service Card
Ivy – Friend or Foe?

By Andrew Cowan

Though ivy does not compete with trees for nutrients, it can smother a tree by preventing light from reaching its leaves.

To some arborists, ivy is a pernicious weed that smothers the natural form of trees and on which constant war must be waged. To others, it is an essential part of the wildlife habitat, providing shelter and food for a diverse range of different organisms. Which view is more accurate will depend on where and under what circumstances the tree is growing. Context is the key word here, and what might be fine in the middle of woodland may not be so desirable in formal parkland or a residential front garden.

Ivy is very well adapted to living in woods, which represents its natural habitat. Its growth characteristics enable it to survive where light levels are low – on the ground and growing up the trunks of trees whose dense foliage shade the woodland floor. Ivy’s attributes of shade tolerance and evergreen foliage have proved invaluable in gardens, where it has been used for attractive evergreen coverings for north facing walls and to provide groundcover in dark corners. Although the ivy *Hedera helix* is the most common, a variety of cultivars and other species are available for horticultural use.

*Hedera helix* is the only native British evergreen climbing shrub. It has a habit known as dimorphism, whereby two forms occur within the same species. Juvenile growth, with its characteristic lobed “ivy shaped” leaves, is adapted to living in low light conditions and is found creeping along the ground or climbing up walls.
and trees. As the plant matures, it can throw out bushy branches and flowering shoots with very different, elliptical leaves (lanceolate to ovate). This adult form will only develop where the light conditions allow, and it is mostly found on the climbing section of the plant, only rarely on the ground.

Ivy has a very bad reputation because it is commonly thought to kill trees. Ivy is not parasitic, however, and does not directly affect the health of the trees it climbs. Unlike truly parasitic plants (such as mistletoe, whose roots tap directly into the resources of the host plant), ivy has its feeding roots anchored in the ground and simply uses the tree as a support to get to where it wants to go. The masses of tiny, hair-like roots sprouting from the undersurface of the stems are simply designed to provide support and allow the plant to climb. Although these roots provide almost immovable adhesion to the rough surfaces of tree trunks and walls, they are not used for feeding, and at worst only penetrate the outermost layer of bark on host trees.

It is primarily in terms of competition for natural resources that ivy affects the health of trees, particularly where light is concerned. If ivy has become established on a tree, it is more likely to be a sign of stress than a cause of it. A heavy infestation of ivy, particularly in the upper crown, is usually an indication that the tree is in a natural state of decline, since most healthy crowns will let insufficient light through for the ivy to grow vigorously.

One exception is ash, *Fraxinus excelsior*, which has a crown that tends to be thin and open. This allows major infestations to occur, thereby restricting photosynthesis, but it is still unlikely that the life of a healthy tree will be shortened. In the case of a diseased or dying tree, where growth rate and vigor may be slow or in decline, the ivy’s more vigorous growth allows it to smother the tree. The bushy adult growth will then have a tendency to make the tree top heavy, making it more likely to fall, particularly during

Ivy that has spread over the trunk and throughout the crown can make safety checks more difficult by limiting a visual inspection of the trunk and main branches.
storms or high winds.

Before removing ivy from a mature tree, consider its enormous wildlife value. The dense mass of foliage and intertwining stems around the trunks of trees provide shelter for birds to build their nests, and dark nooks and crannies where bats can roost through the day. In autumn, ivy flowers are an important source of pollen and nectar for wasps, butterflies, bees and a host of fly species. Over winter, ivy protects soils from full snow cover and frost. This enables ground foraging birds to continue feeding, and provides a sheltered habitat for small mammals and insects.

The berries, which ripen in March or April, have a high fat content. Although poisonous in large quantities, they provide both native and migrant birds with an invaluable early energy resource. Woodpigeons, starlings, resident and migrant thrushes and newly arrived summer migrants such as blackcaps feed on them. Some species of invertebrate are known to feed on the foliage of ivy, and several species of beetle bore the mature stems, while spiders spin their webs to catch others that fly in to shelter.

It should rarely be considered necessary or appropriate to remove ivy from trees within a residential or park woodland setting where it is an integral part of the native ecosystem. An experiment was carried out, from 1890-1942, in which ivy was cut on half the trees in a woods, and left to its own devices on the rest. When the wood was felled in 1942 there appeared to be no difference in the height, average girth or cubic content of the trees. On the other hand, in maintained parks and gardens where conditions have allowed it to grow unchecked, ivy can become quite a problem; choking the crowns of ornaments, swamping less vigorous shrubs and smothering walls and rockeries.

A caution for climbers

Although rarely a problem for the tree, a dense covering of ivy over the trunk and throughout the crown of a mature specimen can inhibit essential safety checks by limiting a visual inspection of the trunk and main branches. Where mature trees are growing in residential gardens – often close to dwellings or public open spaces – it is important to be able to complete regular hazard assessments and monitor the decay of old wounds. In these circumstances it becomes essential to remove the ivy.

The most effective way of removing ivy is to cut it near the base of the tree. Remove a section of all the stems around the entire circumference of the tree’s trunk. Once cut from its roots the ivy can be left to die on the tree. When it becomes sufficiently dry and brittle it can be removed easily. The best time to consider this work is over the winter when the host tree is likely to be bare of leaves and visibility is much improved. Very dense ivy can sometimes be used by bats to hibernate through the winter. To avoid unnecessary disturbance of hibernating bats, cut the stems in late summer, so the foliage dies before the winter months. Removal of ivy during the summer should be avoided where possible, because of its likely use by wildlife.

Andrew Cowan is the owner of Tree Craft Ltd. in Westerham, United Kingdom.
Ready For A Great New Idea?

1. Does your business produce chips?
2. Do you spend a lot of time and money getting rid of them?
3. Now you can turn those chips into premium mulch in one pass through a Rotochopper CP 118.

Ron Van Beek from Tree Care, Inc., in Holland, Michigan recently told us:
"I'm amazed. The mulch I'm making with my CP 118 is the best looking product in our entire area and it sells as fast as we make it. Purchasing this machine was the best decision I've made in a long, long time.

The CP 118 will turn your wood chip disposal PROBLEM into a money making OPPORTUNITY. Change the LOOK, FEEL, COLOR, and VALUE of your chips in one quick and simple pass through the Rotochopper CP 118. You can stop worrying about where to dump those chips and start selling them into the highly profitable premium mulch market.

- Regrind and create any color you choose in one pass.
- Pull with a pickup - feed with a skid steer.
- Sets up in minutes.
- Call today for a free video or on site demo.

608-452-3651

Rotochopper, Inc.
217 West Street
St. Martin, MN 56736
Winter is almost here. If you live in one of the chillier states, you’ve probably already been battling the first signs of blowing and drifting snow. Whether you keep your crews busy with winter pruning and snow removal or you take most of the season off, now may be a good time to start thinking about planting a few trees.

Yes, I said planting, but don’t start chipping a hole in the frozen ground just yet. Winter is the best time to look for clients that would be good candidates for the installation of windbreaks and living snow fences. By examining snow accumulation patterns on the properties of existing and potential customers, the arborist and landscaper can create a planting design that has real benefits – even in the dead of winter.

The ultimate goal of planting windbreaks and living snow fencing is weather control. By creating a design that takes into account wind speed and direction, snow accumulation patterns, and areas of high and low usage, spring and summer plantings can offer your customers years of benefits, including everything from reduced energy costs to more efficient water management.

The key to creating an effective weather control strategy is planning. It may take several visits in less-than-favorable weather to get a good understanding of how the wind and snow are moving around the subject property, but a hot cup of coffee with the client will also help in locating problem areas and setting priorities.

Windbreaks are generally planted to achieve one or more of the following goals:
- reduce wind speed (to control the affects of wind chill and lower energy costs)
Different densities and species offer a variety of wind reduction benefits.

- reduce drifting in high-use areas (to lessen labor costs associated with snow removal and increase convenience)
- concentrate or evenly distribute snow (to manage run-off during snowmelt.)

Once you have an idea of the client's needs and the effects you hope to achieve, you're ready to get to work.

Whether your goal is simply to reduce the chilling effects of winter winds or control the accumulation of snow, the density of the plantings is of key importance. A rough estimate of density can be determined by estimating the ratio of the "solid" area (branches, trunks, leaves, etc.) to the total area of the barrier. For example, a single row of mature deciduous trees might offer a density of roughly 30 percent, which means that the row consists of 30 percent tree and 70 percent open space in winter. By comparison, a single row of conifers might have a density of 50 percent or 60 percent in winter.

Different densities offer different benefits, and it is important to remember that more isn't always better. While densities of less than 20 percent provide little in the way of wind and snow management, high densities of 90 percent or more may cause increased wind turbulence that can reduce the size of the protected area.

In general, a density of around 30 percent is ideal if the goal is to evenly distribute snow across a field or lawn area. A row of this density allows some of the wind to pass through, minimizing drifting in the protected area and reducing run-off problems in spring, as well as helping to ensure that the water provided by the snowmelt is evenly distributed to field or turf plants. An existing row of trees or shrubs can sometimes be pruned to reduce its density if even distribution of snow is the goal.

Higher density windbreaks are better at "catching" snow, that is, they slow wind speed enough to cause snow to drop to the ground and accumulate both on the windward and the leeward side of the row (or rows.) These types of living snow fences are extremely useful for keeping roads, driveways, and other high use areas clear of drifts, which means less plowing, less shoveling, and less general aggravation.

It is important to allow enough space between the windbreak and the protection area to accommodate the drifts that will be created. A minimum of 200 feet should be allowed for drifting snow on the leeward side of a row, and at least 50 feet should be allowed on the windward side. This will create an area of reduced snow accumulation and reduced wind speed on the leeward side that extends up to 30 times the height of the trees and shrubs being used.

Windbreaks should be installed as close to perpendicular as possible relative to the prevailing winter winds, and should not contain any significant gaps in the continuity of the row. This maximizes efficiency and limits the possibility of increased wind speed in unprotected areas. In general, trees should be planted no more than 20 feet apart. Whenever possible, the ends of the windbreak should extend beyond the limits of the protection area as well.

Remember, every location is different, and there is no perfect windbreak design that will be effective in all situations. But, with the proper research and planning, an effective windbreak can be installed that will offer the customer a variety of benefits for years to come.

See us at TCI EXPO 2003!

**The BUCKLITE...**

**THE NEW LIGHTEST WEIGHT CLIMBER**

Buckingham has developed the Titanium Climber to provide strength, light weight and comfort for total confidence while climbing. Laboratory tests have proven the titanium climber will provide years of service. The benefit of titanium is it's strong like steel, but lightweight like aluminum, a perfect combination for climbers. The New Replaceable Gaff can be changed out with an Allen wrench quickly and easily.

**Benefits:**
- Lightest Climber available
- 11% lighter than aluminum
- Climber Weight Comparison:
  - Titanium 3 lbs. 1.8 oz.
  - Aluminum 3 lbs. 7.7 oz.
- Strong as Steel/Stronger than Aluminum
- Easy Gaff Change Out
- Accepts Climber Foot Plate

**Options:**
- Gaff Angle - Pole 16' & 12'
- Tree 23'
- Offset or Straight Stirrup
- Long/Standard Sleeve
- Twisted or Straight Shank
- Contoured & Non-Contoured Shank
- Replaceable or Permanent Gaffs
- CCA or Standard Gaff

**The New Bucklite Titanium Climber has redesigned jaws.**

Buckingham Manufacturing Company, Inc.  
P.O. Box 1690, Binghamton, NY 13902  
(607) 773-2400  Fax: (607) 773-2425  
E-Mail: sales@buckinghammfg.com

Please circle 21 on Reader Service Card

TREE CARE INDUSTRY - NOVEMBER 2003
Positively the Pits!
Successful strategies for sustainable streetscapes
By Karen Doherty, David V. Bloniarz and H. Dennis P. Ryan

Tree planting pits are relics of the past, but are still commonly used in many of our urban landscapes. Sometimes called “tree vaults,” they are also referred to as “tree coffins,” and with good reason. Although planting in tree pits is not ideal, in many cases pits offer the only opportunity for planting trees in a streetscape setting.

A recent article in the New York Times (May, 12, 2003) states that the average street tree being planted in New York City costs $590 to plant. While this may seem high, one must take into consideration how the citizens of our cities benefit from our urban forest. The average city tree has a value of $3,225, removes 528 grams of pollutants from the air, cools our homes and streets – AND people like trees!

Trees in concrete-laden urban settings struggle with many stresses that inhibit growth. Among these are limited rooting space, air pollution, road salt, excessive temperature effects from the urban heat island, vehicle impacts, and damage from two- and four-legged creatures, to name a few. Trees elsewhere may be able to compensate for a less-than-perfect start in life, but street trees planted in pits need all the help they can get.

Many later problems could be minimized if better planning and planting practices were used in the beginning. If we start thinking positively about planting in pits, we will be better able to create sustainable streetscapes. To that end, we offer the following top ten strategies for survival of trees in planting pits. Green it up!
Create as much rooting space as possible

Unfortunately, planting success in a tree pit often follows what might be called the "Rule of Four": the roots of a tree with a 4-inch trunk diameter will fill up a 4 foot X 4 foot X 4 foot pit within 4 years. This usually results in a growth slowdown or stoppage and, eventually, tree death.

A planned street or sidewalk reconstruction offers a prime opportunity to build better tree planting sites. A continuous planting strip can be built beneath the sidewalk, or existing individual tree pits can be connected with underground tunnels filled with soil. Both are practical ways to increase the space available for tree roots to spread out and thrive.

In order for planting design features to be incorporated in street reconstruction, a city arborist needs to collaborate with other city departments in the early planning stages. Forging relationships ahead of time with the Departments of Planning, Public Works, Engineering and others helps lay the groundwork for collaboration and ensures that trees have a presence on the streets.

But what if all you have are the 4 x 4 x 4 tree vaults and there is no planned reconstruction? The following strategies are the best bets for ensuring tree survival and green streets.

Bites. Nicks. Cuts. Deer. Rodents. That's why NSW offers Tree Bark Protectors - tough, rigid plastic mesh tubes that protect tree bark from feeding animals, lawn care equipment, and other assailants. NSW Tree Bark Protectors allow sunshine, water, and chemicals to reach the trunk without the hassle and expense of replacing plastic sheet wraps. The expandable mesh design is easy to install, won't harbor insects, trap moisture, or inhibit growth. Call us or visit www.nswplastics.com for details.

NSW

NSW, LLC · Roanoke, Virginia · 800-368-3610
540-981-0362 · E-mail: netting@nswplastics.com

Please circle 62 on Reader Service Card
Start with good soil

Urban soil is an oxymoron. Urban fill is usually made up of bits of concrete, other construction debris, sand, garbage, and more. Left in a pit for any length of time, even fill that resembles soil usually has compacted layers of varying porosity. The result is a stratified situation where water may not be able to percolate through the layers. This causes pooling at one or more levels, and the "stuck" water may suffocate the tree’s roots. In addition, if there is rooting space available beyond the pit, but the soil texture changes, the line between the two soil types becomes a barrier which the roots will have difficulty crossing.

The best method to prepare a pit for planting is to remove everything and refill the pit with uniform, good quality loam. Soil ingredients should be thoroughly prepared and mixed before planting. The soil type should be consistent throughout the pit and to the outermost location available for root growth.

A structural soil mix, sometimes called an engineered or load-bearing soil, offers a promising alternative medium for planting in pits and under sidewalks. One such formula, developed and patented by Cornell University researchers, consists of approximately 80 percent small triangular stones mixed with about 20 percent loam, along with a small amount of water retention material that also helps keeps the pore spaces open. The mixture is designed to prevent soil compaction, preserve large air spaces, and help ensure oxygen supply to the roots.

When used under a sidewalk, there is promising evidence that this mix will support the pavement and keep it from lifting. Structural soil mix used under sidewalks can also expand the rooting space to extend under the pavement. It can be used to connect existing tree pits and increase available rooting space on the most congested urban thoroughfare. On a residential street, if roots can grow under the sidewalk through such a mix, there is then the possibility for a tree to expand its roots by spreading out into an existing lawn area.

Control the water

If the minimal soil volume is not enough to slow or prevent growth, a tree in a pit often suffers further from oxygen deprivation due to poor drainage. In addition to filling the pit with a uniform soil profile, drainage can be facilitated by installation of a piping system that will drain excess water away from the roots and prevent drowning. If pits are connected or a continuous planting strip is installed as described above, trees can be linked with a network of pipes.

Too little water can be as significant a problem as too much. The typical tree pit has a volume of only 64 cubic feet, yet research has shown that a tree with a 20 foot diameter canopy requires 300 cubic
Carlton has a machine for every need.

See us at TCI EXPO 2003!

2500 Series Self-Propelled

24 hp Onan
27 hp Kohler
27 hp Kawasaki

10 hp Honda

48 hp Deutz Diesel
60 hp Deutz Turbo Diesel

900 Series Walk-behind

13 hp Honda

48 hp Deutz Diesel
60 hp Deutz Turbo Diesel

Call for a dealer near you or reach us on the web for additional information.

www.stumpcutters.com
800-243-9335

71 hp Deutz Turbo Diesel

7500 Series Tow-Behind

Please circle 22 on Reader Service Card
feet to have enough water during ten days without rain. New trees in pits should be deeply watered two or three times during backfilling, and there should be deep, regular soakings thereafter. A well to hold water for the newly planted tree is not usually practical in the planting pit situation. Use of pavers instead of concrete can be one way to enable water and oxygen to permeate the soil more easily; unfortunately the heavy compaction involved in base preparation usually defeats the purpose.

Citizen volunteers concerned with street tree survival are using an innovative irrigation system in Boston. Used in conjunction with a tree grate, the system consists of standard materials purchased at a hardware store: 4-inch black flexible perforated pipe inside a filter sleeve to keep out silt; a “T” joint; and a 4-inch round black slotted drain cap. The perforated pipe is laid in a circle just below the soil surface around the root ball, with the “T” joint leading up to the drain cap. Although the cap is protected beneath the grate, it is easily accessible with a hose.

Because of high tree mortality in the past, Boston’s tree advocate groups now only plant a tree if and when they have a volunteer committed to water it. Once a week the volunteer uses a hose to fill the system to overflowing, lets it drain, and fills it again. (Trial and error has shown this to be the right amount of water.) The entire system costs about $10 per tree, and it holds up for about three years, long enough to get the young tree established. The system has been so effective that the City of Boston now specifies its installation in its regular plantings.

Plastic irrigator bags are commercially available products that drain very slowly to provide an effectively deep watering of young trees. A number of communities have had success with these, and most report that vandalism has not been a problem despite the visibility of the bags. A scheduled maintenance commitment is necessary to ensure the bags are filled regularly.

Choose the right species for the site

A critical step toward the creation of any sustainable streetscape is to select the right tree for the right place. Only small trees can survive in small spaces. Planting in self-contained tree pits dictates the use of slow-growing species that have a relatively small mature size and a tolerance for urban conditions. In addition to the innate problem of minimal rooting space, pits are often built directly under utility wires or too close to buildings. Ornamental species with short mature heights should be chosen for planting under wires. Near structures, planting trees with a columnar shape can avoid costly pruning later. Urban planting pits are perfect for low oxygen flood plain tree species, if they are small enough. Such trees are adapted to having their roots submerged at irregular intervals and hence are more durable in the fluctuating water conditions of a pit. Planting pits can sustain only the smallest trees.

Go bare (root, that is)

Bare root planting has several advantages: root ball weight is non-existent; root structure is visible, so you can see what you’re getting; bare root trees usually have many more fibrous feeder roots than trees whose roots have been cut to make a tidy burlapped...
The First Innovation
in Chip Boxes Since Wood/Chuck Started building Quality Chippers 34 Years Ago!

Innovative & Unique Concepts

Design
Designed without the old concept of framework channels. Producing a clean base without wasted weight.

Material
Corten, a metal that is rust resistant, not just a Galvaneal coating, 40% stronger than conventional Metals.

Finish
Powder Coating finish with exceptional appearance, durability and adhesion.

Please circle 99 on Reader Service Card
Various methods to protect the area above a tree’s roots may be used to reduce soil compaction.

Watering and proper maintenance will help to establish street trees as an integral component of many streetscape settings.

package; and because there is no root ball, there is no “wall” between balled soil from a nursery and the type of soil in the rest of the pit. Girdling roots, often a problem in containers or balled and burlapped stock, are minimized — and easily corrected — in bare rootstock. The major disadvantage is that roots dry out and die very quickly, so every effort must be made to keep them constantly moist and plant the trees as soon as possible.

When planting a balled and burlapped tree, the hole should first be backfilled one third-full to help keep the root ball intact. Then, the burlap should be cut away from the sides and removed, so that the roots are free to spread. This is especially important if plastic burlap has been used. Some synthetic burlap developed in recent years is difficult to
distinguish from the natural variety. Because even natural burlap does not decompose efficiently, it is critical to perform this step. Wire baskets and any rope used for drum lacing or other purpose around the root ball can present a similar problem and should be cut and removed from the planting pit. Both have the potential to girdle tree roots far in the future, when the roots have grown larger than the basket or rope openings.

Plant at the proper depth

When a tree is planted too deeply, tree health suffers significantly, so much so that the tree may eventually die. The root flare is buried, the bark rots, the cambium layer is destroyed, and the movement of nutrients and water throughout the tree is interrupted. Roots cannot access needed oxygen in lower soil levels, and they start to grow upward rather than outward.

When planting a tree in a landscaped site, the hole should be dug no deeper than the height of the root ball, and the bottom of the planting hole left undisturbed. This helps avoid later settling that results in a tree planted too deeply - even though it may have been set at the correct height at the time of planting.

The method for planting a tree pit is different. Before a balled and burlapped tree is placed for planting, it is necessary to compact a root ball-sized area of soil at the bottom of the hole, and compact it to the right height. The compacted support pad should be high enough that the top of the root ball is level with or even slightly above the top of the ground or the sidewalk. This limits the amount of settling that takes place after planting. Bare root trees should be planted by first creating a small “hillock” in the pit, at the proper height to ensure the root flare is exposed above final grade, and then spreading the roots evenly over it.

Protect the ground area around the trunk

A tree grate serves as a sidewalk-like surface for pedestrian traffic, protecting the soil from compaction and still enabling water to reach the roots. Tree grates have fallen out of favor for street tree plantings because the concentric rings of the grates are seldom cut away as the tree trunk grows. Eventually the grate girdles the trunk, nutrient flow is interrupted, and the tree dies.

Instead of tree grates, cobblestones or pavers can be used to create a low-walled area surrounding the planting pit that is 6 to 12 inches above sidewalk level. This raised bed encourages pedestrians to walk around and helps limit compaction over the roots closest to the tree. Organic mulch is normally recommended around trees for water retention and weed prevention. Impractical for street trees set level with sidewalks, mulch may, however, be used...
in a raised planting bed if the sides are high enough to contain it. To ensure that the tree is planted at the correct level, a raised bed should be planned and constructed before planting. The raised-bed solution is more practical for a continuous planting strip than for a series of single tree pits, where the danger of pedestrians tripping is greater.

Another solution for surfacing the single tree pit (and one which also works for the continuous pit) is to lay unit pavers level with the sidewalk around the tree. As noted previously, the major advantage of pavers is that air and water can move into the soil through the gravel spaces between the pavers. Pavers are most effective when used in conjunction with structural soils, avoiding the need for a heavily compacted base layer of stone dust or sand.

Do stake, don’t wrap

Although staking is not needed in most cases, one significant exception is the street tree, because it may need to be stabilized against jostling and bumping from pedestrian traffic. Street trees are best supported with only two stakes, set parallel to the curb, so that handicapped traffic on the sidewalk is not hindered. To prevent damage to the root ball, stakes should be placed in the ground beyond the outer edges of the ball.

Perhaps the most important part of staking is its removal. Whether hose-covered wires or a woven tie material is used, guy supports will quickly begin to cut into the growing trunk bark and interfere with the movement of water and nutrients within the tree. A maintenance schedule should be set up to remove the staking material within one year of planting.

The use of tree wrap to protect young bark is not recommended. Tree wrap causes more harm than good, because it creates a dark, moist environment that fosters the development of insect and disease problems. Sunscald on tender bark was once the primary reason for using tree wrap. Although not as large a problem as once thought, sunscald can be minimized on susceptible thin-barked species by replanting the tree facing the same compass direction as when it was last in the ground.

Structural prune during the first three years

Structural pruning while a tree is still small is a highly effective strategy to minimize later maintenance and create a strong tree more likely to resist storm damage. The goals of structural pruning are the development of a strong central leader and strong, evenly spaced scaffold branches. Structural pruning is easily accomplished from the ground and can be done relatively quickly. In later maturity, the pruning goal for a pit-bound tree is to keep it a manageable size that will help it maintain a sustainable shoot-to-root ratio. There is a correlation between the amount of growth above ground and below ground, and judicious pruning above may help limit root growth below.

It used to be common practice to do a thorough tree pruning at planting time. We know now that a tree needs all its healthy branches and leaves to help it adjust after the transplant shock and manufacture more carbohydrates to promote growth above and below ground. Pruning after planting is therefore no longer recommended. Only broken, rubbing or crossing branches should be removed. A co-dominant leader, if one exists, should also be pruned out. Do not tip back the main leader! Allow the tree to adjust to its new location with as little pruning as is necessary.

Enlist volunteers to help with maintenance of young trees

Volunteers can be great assistants for watering and for training young trees with structural pruning from the ground. Volunteers are enthusiastic, they will become protective advocates for public trees, and, best of all, they are cost-effective! Budgets are tight everywhere these days, and a small investment in training volunteers will yield big results. Maintenance on newly planted trees should be planned for at least one year after planting and preferably into the second and third years.

In many communities, planting in the pits is one of the primary opportunities to grow the urban forest. Even though pits are not perfect, sound planting and maintenance practices can go a long way toward compensating for the limiting site factors that pits present. Sometimes there is no choice. In the end, the goal is green - a healthy green environment and all the benefits that come with it. Pits are there, and if planting in them can help us green our communities, let’s take full advantage of them. Indeed, why not?


References and suggested reading list:

From Sketch to Street: Design for the Urban Forest from USDA Forest Service, Northeast Center for Urban & Community Forestry, Amherst, Mass.


Planting Trees in Designed and Built Community Landscapes by Mary K. Reynolds and H. Sharon Ossenbruggen, New Hampshire Department of Resources and Economic Development.
Aerial Equipment
A trusted name for 20 years!

Aerial Equipment has been accommodating the many needs of arborists, landscape and fleet service industries for more than 20 years. We are a Chicagoland and Timberwolf dealer and we carry a large selection of used trailers, stumpers, log splitters and chippers. Our parts service representatives do whatever it takes to meet your needs and exceed your expectations.

Stop by our fully stocked showroom.

Aerial Equipment
Arborist Supplies and Fleet Service
888-822-8008
2381 S. Foster Avenue Wheeling, IL
www.aeriallequipment.com

Offer only available during TCI Expo.
Check us out at booth #1304

Please circle 2 on Reader Service Card
The most effective profitable growth tool any business owner has is a realistic, implementable strategic plan. Unfortunately, many business plans represent great strategic thinking but are so general that any company's name could be on the title. It's not surprising that tree care companies with vanilla strategies may not be seeing increased profits, even after they have met their implementation goals.

If the majority of companies with vanilla strategies are not seeing increased profits, and in some cases are experiencing a decrease in profits, there is a large untapped opportunity in the market. Maximizing profit potential in an uncertain economy requires a flexible strategy that requires you to meet customer needs, the only way to capitalize on the hidden profit opportunities.

Implementing a business strategy is difficult, but the following actions ensure results.

Project revenue and profit increases

Strategies are only words on paper until you attach realistic revenue projections tied to your business development plan with direct links to sales and profit goals.

Identify revenue and profitability of each service line you offer. Focus on increasing revenue for service lines with high profit and increasing profit margins for service lines with low profit.

Make sure everyone understands what the expected revenue and profit results are and identify the activities required of the team to achieve them.

Determine actions that drive the bottom line

Even companies that monitor and track results don’t always know the specific activities that cause them. This is especially true of front-line team members. Without this information, it’s difficult to repeat profit-critical activities.

For example, do you close more sales with prospects whose calls you return within 24 hours? Do you close more sales when you meet on the property with the decision maker? Is your profit margin larger when working for existing clients? Do you close more sales at higher margins from referrals? Does your margin reduce when you dispatch crews past a 15-mile radius? Are
two-person crews or three-person crews more profitable? Do you track billable (production) hours versus non-billable hours so you can focus on reducing non-billable hours?

Ask specific questions

Would profit margins improve if we worked four 10-hour days? Are all phone calls being returned within 24 hours? If not, why, and how do we improve in these areas? Is production meeting revenue and profit goals? If not, why, and how do we improve? Are sales meeting revenue and profit goals? If not, why, and again, how do we improve?

Asking questions to predict unintended results is critical to improving the bottom line. How do we respond to a request for service outside a 15-mile radius? How do we accommodate a proposal request when the decision maker is unable to meet with us on site?

Be prepared for accountability

Holding people accountable for results with real consequences is difficult. Retiring and living on Social Security is even more difficult! Establish real consequences for missed profit targets. Don’t accept excuses. Remember the definition of intention: “whatever happened was your intention!” The weather, competition, and the economy are great excuses for a poor bottom line, but people are purchasing tree care services from somebody. Why isn’t it from your company? That’s the critical question your business strategy must answer, and everyone on your team must work together to find that answer. Don’t neglect to reward generously when bottom line goals are achieved. Not rewarding people ensures that they’ll never really try again.

Creating a strategy that can be implemented can be daunting, and the wealth of conflicting advice available makes it difficult to get started. These are some tips that will help cut through the clutter.

Examine your existing strategy to make sure the expected financial results are satisfactory. Determine what actions should be adjusted to make them satisfactory, rather than just increase the budget.

Consistently evaluate whether your company is moving toward the bottom line goal.

Marry the results, not the strategy. Your strategy must be dynamic. This mindset promotes flexibility and creation of contingency plans.

Dick Proudfoot is the former owner of Pruett Inc., in Lake Oswego, Ore., and a privileged member of the Tree Care Industry Association.
The Distance From Poland to Ohio Isn’t Counted in Miles

By David Munson

When Lauren Lanphear posted his first Internet job listing in 2000, he didn’t know what to expect. As President of Forest City Tree Protection Company of South Euclid, Ohio, Lanphear was facing a challenge that is all-too-common in the tree care industry: how to attract quality employees and keep them on the payroll.

His ad attracted several responses, but none of the applicants were from the greater Cleveland area. In fact, none of them were even from the United States. Discouraged, Lanphear quickly read through the e-mails he had received. Some were seemingly generic responses to the ad. Others were from unqualified applicants who seemed to have misunderstood the nature of the job.

One e-mail was different, however, and would begin a journey that Lanphear won’t soon forget.

The first response to Lanphear’s list-

While arranging the internship was certainly worth the effort, the paperwork and red tape could be overwhelming.

Lanphear received assistance in the legal aspects of the program from the Association for International Practical Training. The organization helps employers sort through the necessary forms and protects interns from companies that are just out to get cheap labor. Employers must be able to prove that they can offer an international intern work experience that they can’t get in their home country. Leszczynski recommends that employers consider the benefits of hiring an international intern.

“I really believe there are many other guys like me with strong educational backgrounds and practical experience that would really appreciate the opportunity to do an internship,” Leszczynski relates. “I would strongly recommend it to students and employers also.”
ing was from Marcin Leszczynski, a recent graduate of Warsaw Agricultural University's Forestry Program in Warsaw, Poland. Leszczynski's forestry background and sincere interest in the position impressed Lanphear, who soon contacted the aspiring arborist.

"After contacting Marcin, we decided that we would do an internship. It's not something I had ever done, but I decided we would learn how. I told him that if he could get here, I'd give him a job," Lanphear recalls.

Leszczynski soon arrived, and Lanphear put him right to work. In the United States on a four-month work and travel visa, the young Pole proved to be one of Lanphear's most motivated workers.

"When he arrived, he had a background in trees and had used a chainsaw, but he had no real experience in arboriculture or climbing," Lanphear says. "He's become an accomplished climber in a short period of time. It's amazing what you can accomplish if you are motivated."

In addition to achieving Class A Climber status, Leszczynski has worked hard to become an ISA Certified Arborist and Certified Tree Worker, and is very close to becoming a crew chief. Sorting through piles of paperwork and red tape, Lanphear was able to help Leszczynski extend his stay to include an 18-month internship, an arrangement that has benefited both Leszczynski and Lanphear's tree care business.

"In our industry, where 90 days seems to be the average lifespan of a worker, 18 months is a long time," Lanphear notes. "If you know someone is going to be there for 18 months - and you don't have to worry that they are going to go somewhere else - it gives you a lot of freedom to work with that person, and a greater willingness to invest in them."

The internship had other benefits for the company. Leszczynski's hard work and dedication to the job were a motivating force for his fellow workers, and the opportunity to interact with someone from another culture had benefits for both sides.

As part of the regular Forest City Tree Protection work force, Leszczynski worked standard hours and received the same pay as everyone else, but the benefits of the internship went far beyond a paycheck.

"The opportunities that I have here are much bigger than back in Poland," Leszczynski says. "I have worked with such great people - other arborists, my boss Lauren, my coworkers. It's been really great. I will be taking back a certain way of thinking about the job - an excitement about the trees, an ability to do the job in a professional way, and a willingness to work as safely as possible. I really hope to bring these things back to Poland and share them with as many people as I can."

As Leszczynski's work permit comes to an end, Lanphear has already begun a new round of internships, and sees the fledgling program as a win-win situation for tree care companies and the interns they employ.

"This is a fantastic opportunity. They are extremely motivated, they love to learn, and they want to absorb as much as they can in the 18-month window that they have here," Lanphear says. "The whole thing has been inspiring."
Smart Hiring

Does Not Happen by Accident

By Jean L. Seawright, CMC

Across industry lines, the greatest business challenge of the last decade will long be remembered as the challenge to find talent. No one felt this challenge more than the small business employer trying to grow his or her company. It was dubbed the war for talent. And rightly so.

Enter Sept. 11 and "employment of the new war." As the business focus shifts from the labor war to the retention war, employers are facing many new challenges - higher unemployment; distracted employees; tighter margins; immigration concerns; military leaves; lower trust; and greater potential for harassment, discrimination, and violence in the workplace. In the midst of all this, our nation is depending on business owners and leaders to keep their corporations healthy so the economy rebounds. Indeed, this is not a time to become complacent in hiring practices. Perhaps now, more than ever before, there is a need to surround ourselves with hardworking, loyal employees who support the company's mission and business values.

By now, you've probably faced the fact that you can't do it on your own. No matter how much energy or talent you possess, at some point, in order to grow your business you need people. And, it's impossible to manage effectively without first hiring effectively. How do you stay one step ahead? Let's look at several practical, effective strategies for finding and keeping the right people.

Recruiting talent

- **Profile the position before you conduct a search.** Develop a list of personal characteristics, experiences, and requirements necessary for success in the position. Use this list to write the ad and develop interview questions (you could even turn it into a form with scores for candidates!).
- **Create an environment that attracts good people.** Define and continually promote a strong culture rooted in professionalism. Build community awareness about your company. Stand out as the best in your class and industry. Offer competitive wages. Provide creative alternatives to traditional, often costly benefits (i.e., flexible work hours, personal time off, or others). Promote learning opportunities and the ability to provide superior service.
- **Spread the word.** If you advertise in the newspaper, be willing to invest in a well-written, polished, attractive ad, versus a "three-liner." The ad that looks and sounds the best attracts the best. List va-
Hiring without firing

- **Offer a bonus to current employees who make referrals.** Pay out a bonus when a referral results in a successful hire. You can offer a portion up front and the balance after 90 days. Bonuses can range anywhere from $50 to $500, or more. With one good employee referral, you can save thousands.

- **Jump on the boomerang bandwagon.** Stay in touch with former employees and consider rehiring the good ones who, since leaving you, have acquired even more skill, ability, and knowledge. Keep them in the loop by putting them on your newsletter list or inviting them back to company-sponsored functions.

- **Don't wait until you have a vacancy.** Waiting until the work is stacked up will result in hiring out of desperation. Seek out talent and consider bringing aboard a good hire even before there is an immediate need. It may cost more up front, but you'll be better off in the long run.

In hiring, there is always risk. The goal is to reduce that risk, which calls for a **systematic process** to screen talent. You want to avoid placing a "square peg in a round hole," which can be detrimental. Let's look at some ways to reduce the risk in hiring ...

desired attributes exist. For example, if work ethic is one the traits you desire (it should be!), don't just look at the application and assume the person has a work ethic because he or she has good tenure. Ask the candidate when he or she began working. What are their earliest memories of work? Did the person have any responsibilities at home as a youngster? Did the individual have to work while in high school? Did he or she get an allowance? If so, for what? What we've found is that a "work ethic" is something that is developed in childhood. So, with a trait like this, ask questions that probe into the beliefs the person has about work: their philosophy ...
and overall experiences with work since their childhood. Also, ensure your questions do not inadvertently discriminate.

♦ **Hire for attitude and train for skill.** You can teach and train someone who has initiative and who is mature, bright, flexible, and enthusiastic. It’s much more difficult to change innate personality traits that may not be positive in the work environment.

♦ **Conduct personality profiles, attitude tests, reference, and other background checks.** Learn as much as you can about the person. Remember, to customers, you are who you hire. Consider obtaining criminal, driving, and credit reports (if applicable).

♦ **Get creative to learn more about the candidate!** Arrange to meet the spouse or significant other (ask this person why they think you should hire the candidate!), take the candidate to lunch and have him or her drive (driving style often reflects personality style), or assign some homework to get an idea of the person’s ability.

♦ **Beware of common interviewing pitfalls.** Most managers make the mistake of talking too much during the evaluation interview. Remember, you should listen 80 percent of the time and talk 20 percent. Another common mistake is to put the cart before the horse. It goes something like this, “John, we’re looking for someone who is mature, bright, and knowledgeable. What kind of person are you?” John responds by saying, “Bob, I’m so glad you asked. I’m mature, bright, and knowledgeable.” With a tactic like this, the candidate is sure to seem too good to be true!

Of course, hiring talented employees raises the stakes for management. Talented, bright people have higher expectations that you must be willing to meet. Otherwise, you’ll find yourself back at the labor well searching again for that tiny drop of water. To help keep your talent happy and motivated, consider these ideas...

### Retaining Talent

♦ **Generate enthusiasm.** Promote a positive team spirit at all times. Make sure the leaders in your company are strong, upbeat people with a passion for your business. Live up to your Mission Statement.

♦ **Create a distinct and realistic career path for employees.** Show your people what it takes to get to the next level. Then, help them get there.

♦ **Give employees the opportunity to grow.** Offer continued training and educational assistance. People who are growing are people who will stay.

♦ **Communicate, communicate and communicate.** Talk to your employees. Keep them informed of general business operations, industry trends, and issues directly affecting their work. Involve employees in decisions.

♦ **Reevaluate your compensation and benefits.** If you’re hiring new employees at a rate of pay that is more than or almost equal to current tenured employees who are in the same position, it’s time to take a close look at your compensation plan. This type of practice is sure to create morale problems. With multiple generations under one roof, it may also be time to review your benefit programs. What motivates one group does not necessarily motivate another. Your benefit program may need some customization.

♦ **Make employees feel like a part of the family.** Send birthday cards; remember anniversaries and other significant events in their lives. Plan picnics. Sponsor employee “causes.” Celebrate milestones in their lives and careers.

As we work our way through this new employment era, what will separate great companies from mediocre ones will be an unshakable commitment to do whatever it takes to identify, hire, and retain the best workers. The war for talent has only begun... put on your best armor and you can win.

Jean L Seawright is the president of the Winter Park, Florida consulting firm, Seawright & Associates, Inc. For the past 16 years she has provided human resource management and compliance advice to businesses across the country. She can be contacted at (407) 645-2433 or www.seawright.com.

---

**Lightning Protection for Trees**

*Your complete source for lightning protection needs.*

- Provide your clients an additional service.
- Limited investment, quick profits.
- Consider golf courses, parks, large estates and historic trees.
- Lightning protection systems for all types of structures.
- Send for a free Tree Kit—A folder containing information about adding this service.
- Order our video or CD Rom—“The How-to Presentation for Installing Lightning Protection in Trees” - $19.95, Visa or MasterCard.

See us at TCI EXPO 2003!

---

**Independent Protection Co., Inc.**

1607 S. Main St.
Goshen, IN 46526
800-860-8388
Fax: 574-534-3719
info@ipclp.com
www.ipclp.com

---

Please circle 43 on Reader Service Card
Why Join the International Society of Arboriculture?

Here is what your peers say...

- ISA Arborist Certification
- Support of the arboriculture profession
- Arborist News
- Research on new techniques
- Professional identity
- Consumer information on tree care
- Networking with other arborists
- Journal of Arboriculture
- Support of public outreach programs
- Discounts on ISA certification, meetings, conferences, and educational materials.

Join for yourself. Join to support your profession.

Call, write, fax, or visit us on the web!

(888) ISA-TREE* (888) 472-8733*
(217) 355-9411 (217) 355-9516 fax
P.O. Box 3129 • Champaign, IL 61826-3129 USA

www.isa-arbor.com/mbrappl
Take Care of Your Company’s Vehicles

from the Loss Control Department of The Hartford

Do you know what the most important difference is between a good, accident-free driver and an average or poor driver? After a driver has acquired the skill necessary to handle an aerial lift and the judgment obtained from years and miles of experience, the most important factor in being a safe driver is attitude! Unfortunately, attitudes change from day-to-day or even hour-to-hour. That is why a good driver can go for years without an accident and then be trapped by a poor attitude and become involved in a preventable collision. Accidents normally don’t happen just because there is one adverse event; they are often the result of several things going wrong at the same time, like Murphy’s Law.

An overweight truck is dangerous

According to a study conducted by the University of Michigan Transportation Research Institute, there is a dramatic increase in the crash fatality rate with each and every extra ton loaded onto a truck. A truck weighing 80,000 pounds is more than twice as likely to be involved in a fatal crash as a truck weighing 50,000 pounds.

Rollovers are more likely in an overweight or overloaded truck, too, since the center of gravity is usually higher. Because of the additional weight, brake temperatures increase above normal on downhill runs, contributing to the possibility of total brake failure and a “runaway” rig. In addition to braking problems, steering sensitivity diminishes greatly on overweigh trucks, causing the driver to be more likely to lose control and possibly be involved in a fatal crash. Another concern with larger trucks (i.e. aerial bucket trucks and others) is overturning or losing control on interstate on and off-ramps. The posted limits for these areas takes into account the typical passenger vehicle. A driver with a larger truck with a higher center of gravity should be going slower when exiting down an off-ramp with a curve to it. Add in a mix of slippery conditions (i.e. snow or ice) and it could be a recipe for disaster.
While you may normally have a very positive attitude, finding a flat tire on your vehicle on a rainy morning, or having someone cut you off on the way to work, or having a fight with your spouse or boss, might be enough to trigger a change in your attitude for a day. Suddenly, you are no longer the easy, carefree person willing to forgive the mistakes of others. Now, your turf is your turf, and heaven forbid if anyone tries to enter it. Poor attitudes may cause you to drive more aggressively, drive faster, tailgate the vehicle in front or cut someone else off. These changes are often the final straw that prevents you from escaping from a close call without having an accident.

When something happens that affects your attitude in a negative manner, the first step in defending against it is to recognize that the change has occurred. Only then can you take positive action. Take a deep breath, slow down, deliberately increase your space cushion, and think about something else to take your mind off the disturbing event. If you haven’t started driving yet, wait five minutes until you “cool down.” Have a cup of coffee or a snack to move the blood from your brain to your stomach.

When you start driving, make a conscious effort to be overly courteous to others; it will bring you back to a “positive” frame of mind. When the opportunity presents itself, “yield to others” even if you aren’t required to do so. It’s surprising how easy it can be to get back to a defensive driver status and not be trapped by your own poor attitude.

In the city

There is probably no greater challenge presented to drivers than operating in city traffic. Rush hour traffic, multiple lanes of traffic, tight parking, pedestrians, dangerous intersections and narrow streets are just a
few of the many problems that must be dealt with when driving a truck with a forestry body and towing a chipper. While city traffic can be known for its fast pace, it can be handled by the operator who knows how to avoid fighting traffic and is willing to flow with it.

Most city accidents involve drivers who take unnecessary chances or who are not prepared for the unpredictable actions of others. Being mentally prepared to expect constantly changing traffic situations and being ready to take appropriate action is what separates the "accident free" driver from others. The experts' plan for safe driving includes developing a "defensive" rather than aggressive driving attitude.

Keep yourself informed of potential problems by looking at traffic a block or two ahead of your position. Give yourself an edge by controlling your vehicle's relationship with surrounding traffic.
This can be done by providing the time and space needed to stop or maneuver safely in case of an emergency. One of the absolute requirements to accomplish this is maintaining adequate stopping distance between you and the vehicle ahead at all times. This technique can work even in bumper-to-bumper traffic.

City driving is a difficult assignment, but it can be handled successfully by always:

1. Driving defensively
   - Intersections - Of particular concern in city driving is the problem created by intersections. Maintain a proper space cushion when you stop behind someone at a signal light or stop sign. The general rule of thumb is "to see the rubber meet the road." If you can see the rear tires of the vehicle ahead of you contacting the pavement you have several advantages:
     - If the vehicle ahead breaks down or stalls, you do not have to back up to go around (thus reducing the potential for a backing collision).
     - If the driver of the vehicle ahead is an inexperienced driver in a "standard" transmission, it is less likely they will roll back and hit you.
     - If you get rearended you are less likely to have your front end damaged.
     - You start off with an automatic space cushion.
   - If you're in the number 1 or 2 vehicle positions waiting for the light to turn green at an intersection, you are more likely to get broadsided by someone running the red light at the last moment. Make sure that approaching traffic is coming to a stop. You will have to look to your left to make sure it is clear, as this is the first lane of traffic you will cross in to. Don't forget to look to the right to make sure the alternate lane is also clear. Finally make a quick glance back to the left again to make sure nothing has changed.

---

"If someone else is having a bad day, that's no reason for you to have a bad day – especially in a company vehicle. The most important action you can take is to put time and distance between you and the "rager." Do not try to "get even" or "teach them a lesson" about their poor or abusive driving behavior."

---

Professionals Protect their Turf by driving on
AlturanaMATS® ground protection mats

AlturanaMATS® . . .
- Withstand 60 ton loads
- Easy to handle
- Less expensive than fiberglass
- Field tested in record heat and cold
- Proven best diamond plate design on both sides
- 4'x8', 3'x8', 2'x8', 2'x6' & 2'x4' sizes available

Actual plywood used for two months
...not splintered, warped, waterlogged, short lived, hard-to-handle plywood!

Full 3 Year Warranty

For the name of your nearby dealer, call 888-544-6287
P.O. Box 344 • Titusville, PA 16354
sales@alturamats.com • www.alturamats.com

See us at TCI EXPO 2003!

Please circle 6 on Reader Service Card

TREE CARE INDUSTRY - NOVEMBER 2003
2. Staying alert to changes in traffic flow

3. Maintaining a safe following distance

Road rage

"Road rage" is not a new phenomenon. "Aggressive driving" has been around since they introduced cars, or perhaps even from horse and buggy days. In the mid 1970s, during the fuel crisis and the long gas lines, we saw frustrated drivers who tried cutting into lines, only to be rebuffed, sometimes physically, by those already in the lines.

Then in the 1980s, drivers started using their vehicles as weapons – or carried real weapons – with which to threaten others. Today we are seeing a revitalization of this aggressiveness.

With road rage there are two sides of the coin: you can be the aggressor/initiator or the recipient/victim. If someone else is having a bad day, that’s no reason for you to have a bad day – especially in a company vehicle. The most important action you can take is to put time and distance between you and the “rager.” Do not try to “get even” or “teach them a lesson” about their poor or abusive driving behavior. Don’t let your emotion or your ego get the better of good driving sense. Let it slide off your back. Ignore the other person – do not make eye contact.

Do not blow your horn, shake your fist, or shout at the other driver. This type of behavior is sure to escalate the problem. Above all, do not pull over to the side of the road and get out of the car to confront the other driver – that response can place you in real jeopardy. Even the strongest, most fit climber is no match for a crazed motorist with a gun. If you have a cell phone, use it to call the police. Just the act of appearing to use the phone may discourage the aggressor.

After you have avoided the confrontation with the aggressive driver, you most likely will be a little on edge. To avoid being involved in a collision, relax and get your focus back on driving. Stop thinking about the incident. Force yourself to think about where you’re going and what hazards await you in the trees today.

Getting into a “fit of road rage” generally starts from being late, rushed or having something go wrong with your day and then having another driver do something discourteous to you. On most days, you can overlook someone’s cutting in front of you, or
We've Got Dumps!

1999 To 2000 Cabover Forestry Trucks
GMC Or Isuzu, 12' To 16' Bodies, Great Maneuverability
Side Doors, Removable Lids, Even Side Liftgates
Available! About Half The Cost Of New!

1996 To 1999 Freightliner Chip Trucks
Cummins Or Cat Diesel Engines, Automatic Or Manual
Available. Over Or Under CDL, New Royal Extreme
Duty Forestry Bodies. From...$24,900.00!

MEGA CAPACITY CHIP TRUCKS
Royal Specializes In Huge, Extreme Duty Chip
Trucks. Heavy Single Or Tandem Axle Chassis Avail.
16' To 24' Bodies. Super Efficient Vehicles!

1996 To 1999 Freightliner Chip Trucks
Cummins Or Cat Diesel Engines, Automatic Or Manual
Available. Over Or Under CDL, New Royal Extreme
Duty Forestry Bodies. From...$24,900.00!

Largest Selection Of 4x4's ANYWHERE!
DT Turbo Diesel, Automatic Trans, 26,000 To
33,000 GVW, Chassis, Digger Derricks Or
Knuckleboom Trucks.

Heavy Spec Chip Trucks
All Makes / Models, 14' To 18' Extreme
Duty Bodies W/ Removable Lids.

1996 & 1999 GMC C6500 Dumps
Cat Turbo Dsl, Auto Or Manual, New
Royal 12' To 16' Bodies.

1998 & 1999 GMC C6500 Dumps
Cat Turbo Dsl, Auto Or Manual, New
Royal 12' To 16' Bodies.

Late Model Knuckleboom Trucks
All Makes, New Or Used Cranes Available
Extreme Duty Bodies W/ Removable Lids!

Late Model Knuckleboom Trucks
All Makes, New Or Used Cranes Available
Extreme Duty Bodies W/ Removable Lids!

Late Model International Combo Dumps
DT466 Turbo Dsl, Auto Or Manual, Over Or
Under CDL, Multi Purpose Landscape / Forestry
Bodies. New Bodies On Late Model Chassis!

Late Model International Combo Dumps
DT466 Turbo Dsl, Auto Or Manual, Over Or
Under CDL, Multi Purpose Landscape / Forestry
Bodies. New Bodies On Late Model Chassis!

1995 To 2000 International Chip Trucks
Int'l Turbo Diesel, Auto Or Manual Trans, Over Or
Under CDL, Available, 12' To 18' Forestry
Bodies With Removable Lids. Great Selection!

Royal's Ultimate Landscape Dumps
Turbo Diesel, Auto Or Manual Trans, NO CDL
Neded, New Royal 12' To 18' Extreme Duty
Bodies W/ Removable Lids. Unlimited Options!

New Truck Image At A Used Truck Price!

Royal Truck & Equipment Inc.
5910 Rt. 309
Coopersburg, PA 18036

www.royaltruckequip.com
1-800-283-4090

Please circle 78 on Reader Service Card
blowing his horn at you, or not allowing enough following distance behind you. But on bad days their poor behavior might just be the object of your frustration. Instead of challenging them or getting even, let it go. Don't pick a fight!

This information is provided by the Loss Control Department of The Hartford Insurance Group. Reprinted with permission. Further reproduction or electronic distribution prohibited. Copyright The Hartford, Loss Control Department. All rights reserved. This document is provided for information purposes only. It is not intended to be a substitute for individual legal counsel or advice on issues discussed within. Readers seeking resolution of specific legal issues or business concerns related to the captioned topic should consult their attorney and/or insurance representative.

A Review of Commercial Drivers License Requirements

The Commercial Motor Vehicle Act of 1986 (The Act) was designed to remove unsafe and unqualified drivers of heavy trucks and buses from the nation's highways. The Act required the Secretary of the U.S. Department of Transportation to issue regulations establishing guidelines and standards for the testing and licensing of CMV drivers. These guidelines and standards were established in the Code of Federal Regulations (CFR) Chapter 49, Part 383. The commercial driver's license requirements are applicable to drivers transporting persons or property in both, interstate or intrastate commerce. The commercial driver's license has three classes covering the following vehicle classification groups:

Class A – Required for a combination vehicle with a gross combination weight rating (GCWR) of 26,001 pounds or more and towing a vehicle with a gross vehicle weight rating (GVWR) of more than 10,000 pounds.

Class B – Required for a single unit vehicle with a gross vehicle weight rating (GVWR) of 26,001 pounds or more, or any such vehicle towing a vehicle not in excess of 10,000 lbs. GVWR.

Class C – Any vehicle, regardless of weight rating, transporting hazardous material in any amount requiring the display of placards by 49 CFR, part 172, subpart F.

Individual states may issue restricted, specific use CDLs to allow operation of specific vehicles, or exempt specific occupational fields, such as farmers and emergency response vehicles, from the CDL requirements. Refer to your State code for State-specific requirements.

As the manager of your fleet operations, it is your responsibility to ensure that your drivers have a Commercial Drivers License with the appropriate endorsements for the type of equipment you operate. You should review these requirements with your drivers and managers periodically so that they are familiar with the requirements.


---

**3 Great Reasons to Choose**

1. **Fast Delivery**
   With manufacturing plants in Ohio, Oklahoma and California we'll get your body to you fast and save on shipping costs! Each plant is equipped for professional installation of bodies on both light and medium duty chassis.

2. **Value**
   First in the industry to use galvanneal steel to increase the longevity and corrosion resistance of the equipment you rely on.

3. **Product Selection**
   Through innovation and experience, a full line of products have been developed to optimize efficiencies of the larger line clearing companies down through the independent residential tree care companies.

---

**ARBORTECH**
A leading manufacturers of forestry and chip box bodies.

**New Design!**

- **EXCLUSIVE!**
  Three Year "No Rust, No Bust" warranty.

- **NEW!** Flat body sides for more advertising space.
- **NEW!** Galvanneal steel sectional floor with formed cross members.
- **NEW!** 95" wide construction.
- **NEW!** Larger Ladder Box with a pruner shelf.
- **NEW!** Galvanneal steel tailgate.
- **NEW!** Light-weight design that is also strong.
- **NEW!** Toolboxes feature adjustable shelves.
- Durable, rust-resistant galvanneal steel construction.

---

3203 West Old Lincolnway, Wooster, OH 44691 • Phone: 800-255-5715 • Fax: 330-264-7248 • www.arbortech.cc

---

Please circle 12 on Reader Service Card
Join Us For

The World’s Largest
Tree Care Industry
Spring Expo!

World’s Largest Tree Care Industry Expo
Sacramento, California
March 25 — 27, 2004

For the first time ever, The Tree Care Industry Expo, the world’s largest and most respected expo and seminar series in commercial tree care, comes to the West Coast. See the latest advances in tree care equipment, products and services from leading suppliers. Attend informative educational seminars on a wide range of commercial tree care topics. And meet and network with other tree care professionals from all over the country. If you’d like to attend, or become an exhibitor, call 1-800-733-2622 today!

PRODUCTS AND SERVICES • EDUCATIONAL SEMINARS • NETWORKING

TCIA
VOICE OF TREE CARE
EXPO

Please circle 88 on Reader Service Card

TO REGISTER OR TO LEARN MORE ABOUT THE TCIA SPRING EXPO CALL 1-800-733-2622 TODAY!
Ground-Penetrating Radar as a Tool for Diagnosing Shade Tree Soil Problems

By Richard G. Rathjens, James A. Doolittle, Greg Mazur and Alan R. Siewert

Figure 1. Survey of the soil beneath the canopy of a declining sugar maple at the Lake County Home in Painesville, Ohio.

The cause of most urban tree problems can be attributed to a poor soil environment. Soil features that can inhibit shade tree growth include compacted layers, poor drainage and/or buried debris.

The true cause of many tree problems goes undetected because of the inaccessibility of the root area. Access using excavation is both time consuming and labor intensive as well potentially harmful to the plant being unearthed. A technique that could detect soil problems without excavation would be an invaluable tool in diagnosing tree disorders.

Ground-penetrating radar (GPR) has been used to assess soil conditions and locate features beneath golf course greens. In a 2000 presentation to the Crop Science Society of America, Chong reported that GPR was able to detect the thickness of a sandy root zone mixture, soil compac-
tion, areas of impeded drainage and the position of buried drainage lines.

During 2001, GPR was evaluated in an urban setting for its ability to detect soil features that could cause poor tree health. The study was a collaborative effort among The Davey Tree Expert Company, the United States Department of Agriculture-Natural Resources Conservation Service and the Ohio Department of Natural Resources-Division of Forestry.

The trial was performed underneath the canopy of a mature (31 inch diameter at breast height) sugar maple (Acer saccharum) tree. The tree was in poor health and a state of decline with no visually evident aboveground cause.

The tree was located within a lawn area at the Lake County Home in Painesville, Ohio. The site contained coarse-textured soil. An area with coarse-textured soil (sands, loamy sands and sandy loams) was chosen because previous research has shown that dry, coarse-textured soils provide a favorable medium for GPR investigations.

The GPR equipment used was the Subsurface Interface Radar (SIR) System-2000, manufactured by Geophysical Survey Systems, Inc. (North Salem, N.H.). The SIR system consists of a digital control unit with a keypad and video screen. A 400-megahertz antenna and a scanning time of 30 nanoseconds were used to obtain the records.

GPR operates by transmitting pulses of electromagnetic energy waves into the ground from an antenna. When the transmitted energy encounters an interface separating materials of differing electromagnetic properties, such as a buried object in soil, a portion of the energy is reflected back to the soil's surface. An antenna receives the reflected waves, which are displayed on the video screen.

The survey was taken in the following manner. An operator pulled the antenna over the ground along a line of reference flags at a comfortable walking pace (Figure 1). As the antenna passed each flag, the operator pushed a button that marked the position of the flag on the radar record. As the antenna was being towed, a second operator monitored the reflected image on the video screen.

Two radar records were obtained of the soil on opposing sides of the tree. Each record was 43 feet in length and taken in a north-south direction, approximately 6 feet from the trunk. These lines bisected the soil underneath the canopy as well as a paved driveway adjacent to the tree. Along the line, survey flags were placed at 3-foot intervals and served as reference points.

One of the records was computer enhanced using RADAN software (Geophysical Survey Systems, Inc.). The processed radar record is given in Figure 2. The scale on the left-hand margin is depth in inches. The marks (white, vertical, dashed lines) at the top of the radar record represent the equally spaced (three feet) flagged reference points. The tree's canopy extends from the right hand margin of the radar record to the word “road.”

The subsurface features detected included a buried pipe, refilled trench, roots and an interface separating soil horizons. Beneath the road and imme-
The GPR record depicted in Figure 2 was obtained beneath the canopy of a declining sugar maple at the Lake County Home in Painesville, Ohio. The radar data reveals a high amplitude reflection immediately below the word “pipe” indicating a buried pipe. Next to the pipe is a narrow area of weak signal returns that has been enclosed in a vertical rectangle labeled “trench.” The lack of tree roots and soil horizons suggests a major excavation in this area. The hyperbolic patterns (arches) to the right of the trench are large tree roots. The number of roots increases from left to right or from the refilled trench toward the trunk of the tree (the word “tree” is where the tree’s trunk is located). An interface between two texturally different soil horizons is highlighted with a dark line. Excavation of the soil profile after the survey found that the interface separates layers of loamy sand from coarse sand.

Although not evident above the ground, GPR showed a major disturbance in the soil underneath the canopy. The decline of the sugar maple could be due, at least in part, to the removal of roots and the mixing of the soil materials that occurred in the trench. Excavation and trenching is a common cause of tree decline and death in urban areas. This evaluation demonstrated that in sandy soils, GPR is an effective tool in detecting below ground features that can cause poor tree health. However, many urban soils are not sand-based but contain substantial amounts of clay. Unfortunately, clays increase the conductivity of soils, attenuate radar energy and restrict radar penetration, which prohibit the use of GPR in clay soils. Perhaps future innovations will overcome this limitation making GPR a useful diagnostic tool in a wide variety of soil types.

Richard G. Rathjens is Senior Agronomist and Greg Mazur, Manager of Horticultural Science with The Davey Institute, The Davey Tree Expert Company, Kent, Ohio. James A. Doolittle is a research soil scientist with the United States Department of Agriculture-Natural Resources Conservation Service, Newtown Square, Penn. Alan R. Siewert is an urban forester with Ohio Department of Natural Resources-Division of Forestry, Middlefield, Ohio.

References

Bigger and Better Than Ever!

New Location!

Mid Am TRADE SHOW

January 14-16, 2004
Lakeside Center
McCormick Place
Chicago

NEW Greenhouse Growers' Conference
Midwinter Conference
Student Career Center

847/526-2010 + www.midam.org + mail@midam.org

Please circle 56 on Reader Service Card
Woodsman Chippers are not only on the cutting edge of technology, but customer service is still our main objective.
12X
12” Class Hydraulic Drum Style
Available with 80-125hp engines & 6000 lbs. of steel. This unit has a clean & simple design with a feedwheel opening of 14”x24”.

15X
15” Class Hydraulic Drum Style
Available with 80-150hp engines & 6900 lbs. of steel. It’s designed with a beefed up hydraulic system & dual feedwheel motor drive system that reduced maintenance.

18X
18” Class Hydraulic Drum Style
With a larger feedroll and a shorter infeed design and weighs 7800 lbs. This unit is available with loader option.

20X
20” Class Hydraulic Drum Style
An ideal machine suited to meet the demands of lot clearing contractors, logging companies chipping tops, or anyone with high volume wood chipping needs. This unit is available with a conveyor and loader option.

Woodsman Chippers

989/ 386-9454  fax: 989/ 386-9487
e-mail sales@woodsmanchippers.com

Please circle 100 on Reader Service Card
Mammal Damage to Trees and Shrubs: Effects and Control

By Harry W. Pepper

Planting trees and shrubs creates a habitat rich in food and cover ideal for populations of herbivorous mammal species. An increase in the number of herbivorous animals inevitably gives rise to a conflict between their requirements and the successful establishment of plants, often resulting in damage to valuable landscapes.

Gray squirrels, for instance, will dig up bulbs, rob birdfeeders and take fruits from the garden. They will also occupy attic spaces of houses. However, these mammals are widely accepted by the public as an integral part of both urban parkland and urban woodland ecosystems. They are also a significant attraction in parks and woodlands and give considerable pleasure to many people. Any attempt to restrict their activities in order to protect trees is likely, therefore, to stir up passionate opposition. If damage is to be restricted, it is important to understand why, how and when damage occurs – in other words, when action is justified.

Mammal damage

Mammals damage trees in three ways:

1. **Browsing** – the removal of leaves, buds and young shoots from the tree for food. This feeding is often particularly severe when there is a blanket of snow and woody plants are the only green vegetation easily accessible. However, browsing alone rarely kills trees, and even when the browsing is repeated, trees and shrubs will usually recover once the browsing pressure is relieved. The form of the tree, however, may have suffered a permanent change. When the leading shoot of a tree is browsed, multiple stems result and height growth may be suppressed sufficiently to extend the costly tree establishment period. Removal of side shoots is generally less damaging. Heavy browsing can prevent natural regeneration of trees from seed or coppice stumps (Figure 1).

2. **Bark-stripping** – caused by animals biting off the bark and underlying soft tissue (phloem) from the main stem and branches. This is normally a feeding activity (Figure 2), but it may also be a displacement activity (Figure 3) caused by aggressive social behavior. Bark-stripping is the most serious form of damage caused to trees by mammals. Wood-rotting organisms gain entry into plants through the wounds. Pathogens can gain access to the soft inner bark, killing plant tissue, which can also enlarge a wound. Girdling may eventually occur.

Abnormal growth often forms as a wound tries to callus over. These effects cause structural weaknesses in the standing tree that may, as a result, fail in adverse weather. The complete removal of bark from an area around the main stem (girdling) will result in dieback of the tree, but fortunately this is usually found on only a small proportion of damaged trees. Re-growth may develop from below the girdle on broadleaved tree stems. Girdling of branches is more com-
mon and eventually results in branch drop. The size and configuration of the teeth marks left on and around the edge of the wound can often be used to identify the species of animal responsible for the damage.

3. Fraying – the action of male deer rubbing their antlers on young “whippy” trees to clean them of velvet or to mark territory as a prelude to the rut. The abraded bark often hangs down in tattered strips from the stem and branches and in young trees. The branches themselves may also be broken and left hanging. Whip and standard-sized trees are generally planted singly, rather than in groups, and are therefore particularly vulnerable. Fraying is carried out by all species of deer from March through May, and additionally by Roe deer (Capreolus capreolus) in July. Fraying is an activity specific to deer whereas other mammal species browse and/or strip.

Identification of the cause of damage

In order to limit mammal damage to trees, it is important to know the source of the problem. Direct identification is generally not possible, as it is unlikely that the damaging mammal will actually be seen browsing or stripping. Therefore, an indirect diagnosis is made using the characteristics of the damage caused by different mammals in conjunction with the following observations:

- Time of year when damage occurred;
- Height of damage;
- Form of damage – rubbing or gnawing;
- Presence and size of teeth marks;
- Signs of animal presence and abundance – droppings, footprints, scrapes or burrows.

The impact of mammals on the urban/suburban environment is an additional consideration for the arborist in making management decisions. Gray squirrels invade attics and, apart from the noise they create in the early mornings and evenings, they can be destructive – gnawing roof timbers, electric cables and water pipes. Deer also invade gardens and devastate many garden plants. They are also frequently the victims of vehicle accidents where roads pass through or by woodlands.

Preventative action should not be the automatic consequence of mammal damage. The severity of the problem must be assessed, and only if protection measures save more than they cost should anything be done. Much urban woodland is planted primarily for landscaping and recreation purposes; a requirement to obtain revenue from the sale of wood may not be important. The visual amenity of a tree may be considered, on some occasions, to be enhanced by the change of form caused by mammal damage. Therefore the level of damage that can be tolerated on urban trees may be much greater than in a commercial plantation.

Protection

There are three main forms of protection measures that can be taken are:

1. Barriers – fencing, tree guards or tree shelters and chemical, sound and visual deterrents.
2. Control of animal numbers – shooting, trapping, poisoning and biological control.
3. Habitat management.

Barriers

Several types of barriers have been developed over the years for use in rural areas and, as a result, may often not be appropriate for the urban environment. Post and wire fencing is very effective but expensive. It also hinders access by people, especially when it is 1.8 meter (nearly 6 feet) high deer fencing (Figure 4). Gates and stiles can be provided, but
they are less than ideal as gates are frequently left open and stiles are a barrier to many of the elderly and disabled. Electric fencing, because of its lower capital cost, is widely used in agriculture to control domestic stock and occasionally wild animals in remote areas, but for obvious reasons it is unacceptable in areas of high public use.

Because of their high visibility, tree guards and tree shelters are unsightly and can attract vandals. As a consequence, the temptation is to use smaller, cheaper guards that are often ineffective (Figure 5).

The application of chemical repellents is potentially the most unobtrusive tree protection technique for the urban situation. Unfortunately most of the currently available repellents are not particularly effective, and some just do not work. For example, neither predator odors in general (and lion dung in particular) nor human hair has proven effective against deer, despite the claims made about their ability to repel. The few repellents that are available and effective may not be suitable for the urban tree in many situations. This is because their color changes the appearance of the tree and their mode of action (an irritant to the skin, an unpleasant taste or a pungent smell) may not be compatible with a public place. Research is needed to find non-toxic repellents that are effective.

Current methods of application also need to be improved. Two possible candidates for development are slow-release agents and micro-encapsulation technology. Micro-encapsulation is the coating of .5 mm particles of chemical into capsules. The capsules are applied to bark or foliage and when broken by biting, scratching or rubbing, the chemical is released. This technique, often referred to as “scratch and sniff,” has a theoretical advantage over more conventional spray or paint repellents because the damaging mammal is less likely to become used to the repellent since it is exposed to the active ingredient only when the capsules are broken.

Wild mammals become habituated in a short period of time to visual- and sound-emitting scaring devices. High-frequency ultrasound has the potential for use in gardens, allotments and the roof space of houses, but it, too, has proven ineffective.

Control of animal numbers

Shooting, trapping and poisoning are the principal control methods used in forestry and agriculture, but all have associated problems when targeted at urban woodlands. Shooting is largely unsafe in areas of high public usage. It may also encourage unskilled owners of air guns and shotguns to “blast off” at any moving rabbit, squirrel or deer. The latter, apart from being an undesirable practice, is inhumane because many animals are left injured and suffering.

Trapping is an effective method of removing small animals such as rabbits and gray squirrels. The traps may be either spring traps that are kill traps or baited live capture traps. Spring traps can be inhumane because they do not always kill immediately and are generally not selective and will kill non-target animals, which, in urban areas, may include domestic pets. For these reasons spring trapping is not recommended and live trapping is preferred. However, live capture traps can attract the attention of dogs and people, which often results in the captive animal being released and the trap destroyed. Also, the captured animal has to be dealt with in a humane and legal way; therefore regular and frequent (more than once a day) visits to all traps are needed.

The deployment of poison to control gray squirrels, in conjunction with special hoppers that can only be used by squirrels, is an effective alternative to trapping. How-
Your Business Will Reach New Heights In St. Thomas.

Attend the Tree Care Industry Winter Management Conference.

Hear about the latest and best business practices. Take advantage of great networking opportunities.

February 8 — 12, 2004
The Marriott Frenchman's Reef
St. Thomas, U.S. Virgin Islands

Soak up the sun, the sand, and new knowledge at this year's Winter Management Conference. Learn about the latest business management topics and issues facing today's commercial tree care companies. Network with your peers, and reach new heights while enjoying the tropical paradise that is St. Thomas. To learn more or to register call 1-800-733-2622 today!

TCIA
VOICE OF TREE CARE
ever, poisoning animals can cause public concern. This is a growing problem as public opinion becomes increasingly opposed to any form of animal control that involves killing. It is certain that sometime in the future a more acceptable method of controlling mammal populations will be required. This may be attained by some method of birth control, such as immunosterilization, which is currently being studied in several countries on a number of different mammal species. Research on gray squirrels has shown that it is possible to prevent conception under strictly controlled conditions, but that it is going to be very difficult to translate this success into a workable and environmentally safe field technique.

Habitat management

There are a number of options that will reduce the risk of damage. For example:

1. Some trees and shrubs are more palatable than others and, therefore, the choice of species to be planted is important if you know a damaging mammal is present in the area.

2. The size and position of new woodlands are significant factors. Small isolated woodlands are less vulnerable to damage than those with adjacent or connecting woods.

3. Clearance of vegetation, particularly from around trees, will remove cover that protects animals from predators.

4. Because tree seed is a significant food source for many damaging mammal species, the number of mature trees present (and, in particular, those that produce large seeds – acorn, beech nuts and chestnuts) may be important in determining the number of animals the wood is capable of supporting.

When considering these options, it is important to understand that they may also disadvantage conservation and recreation objectives. There therefore needs to be a balanced approach to the management of trees and woodlands in the urban environment.

Future directions

Mammals are both beneficial and harmful to urban parks and woodlands. They give much pleasure to many people who watch and feed them and, as a result, they attract the public to the woods. This is to be encouraged. However, the damaging impact that these animals have on the trees must be controlled if our urban woods are to be regenerated, expanded and sustained. Research and technical development is now required to develop wildlife management techniques that are specific to and compatible with the urban situation and that will maintain a balance between the needs of the trees and the needs of animals. These management techniques must also be ethically acceptable both to the nation and to local people. The protection of trees with repellents and the regulation of mammal populations by birth control are the two most likely means of achieving these objectives in the future.

Harry Pepper is a forest researcher in Farnham, United Kingdom.
"Climbing trees is second nature. So is carrying Stihl."

As a 3rd generation arborist, Mark knows what it takes to bring down a tree. As a world champion tree climber, he also knows what it takes to get up one. That's why he prefers the STIHL MS 200T. It's lightweight, powerful and designed for use up in trees. As Mark says, “Taking down a tree over power lines and homes isn’t easy, so you better believe I want the best saw of its kind up there with me.”

Mark Chisholm, Professional Arborist, Two-time ISA International Tree Climbing Champion

See us at TCI EXPO 2003!

1 800 GO STIHL www.stihlusa.com

STIHL® Number One Worldwide

Please circle 85 on Reader Service Card
Handling Cacti

By John and Barbara Stropko

Living in the Southwest, in the Sonoran desert, offers many advantages. We enjoy outdoor living for more months per year than most other areas of the United States. We are also blessed with a great climate for cacti and succulents and are home to one of the most impressive cactus, the saguaro (Carnegiea gigantea) that can grow to 70 feet in height and can live 200 years.

Uses of native and non-native cactus for gardens have seen a notable increase over the years. The relative ease of maintaining these gardens and their water efficiency may be part of the reason for the resurgence. Rare specimen gardens are not uncommon but beautiful gardens can be created with a palette of native and semi-native cacti and other plant material.
Cacti usage in a landscape can take many forms. Groupings of cacti can:
• create a sculptural quality to a specific area;
• create an accent;
• contrast or add drama to an entryway or other special area.

Occasionally, cactus groupings can create just the right visual transition from a "native, natural" part of the building site to the more formal zones of usable space.

Cacti can look beautiful in a variety of containers within a patio setting. They can also be used as an access restrictor. Some building code enforcement agencies accept mass cactus plantings as "enclosures" for safety and code requirements.

Cacti usage can be considerable, depending on the size and variety. Choose a reputable vendor who is knowledgeable. Some vendors are growers, some are transporters and some are both. A good vendor can advise you on the best-suited cacti for the areas to be planted. Selection of healthy plants is extremely important. Inspect them to make sure they are not diseased or carrying pests.

Cacti thorns serve two purposes: protecting the plant from predators and serving as shade for the cactus flesh. The varieties of cacti and other succulents are seemingly endless, with pad shapes, columnar in single or groups, short, tall, barrel, gray, green, purple, variegated, flowers or no flowers, and spines or no spines. Cactus can attract various types of wildlife such as birds, butterflies, bats but they can also attract packrats, javalina (desert pigs) and other not-so-welcome guests.

The basics of cactus handling

There are a few things to consider before tackling a cactus project:
• When transplanting cacti, keep in mind that you are removing the cactus from its native habitat. They may suffer from shock and the survival rate may be minimal. For the best health results, take note of the original direction a cactus was facing and try to duplicate that direction when replanting it. For example, barrel cactus that has been facing a certain direction will have thorns on the side that is facing the sun. If you uproot and place the plant randomly you run the risk of sun-burning the flesh.
• A specially designed and equipped saguaro moving truck can relocate a two-ton, 15-foot saguaro in a matter of hours. Choosing an experienced mover is critical. If vehicle access to the planting location isn’t possible, a crane can be rigged to install one of these giants almost anywhere. Remember that saguaros are mostly water, so weight is a factor.
• Most areas require permits to remove and transport cacti that are not pur-
chased from a nursery. Because of the “black market” problems with transplanted cacti, we all have the responsibility to be sure of where our product came from. Proper selecting and placement of cacti are equally important.

“Spiny” cacti should not be placed in a heavily trafficked pedestrian or pet area — or where children play.

- Size and space requirements of the plant when it reaches maturity are also a factor. All too often clients want an instantly mature look while only wanting to budget for smaller plants. The space may be over-designed, thereby resulting in overcrowding as time goes by. Overcrowding can cause cacti to grow to close together and puncture each other, which will make them more susceptible to diseases and pests.

- Smaller cacti can be moved around the jobsite easily with a little preparation. “Stretchers” can be fabricated from straps and two-by-fours for easy transport of saguaros under 5 feet tall.

Old garden hoses or small pieces of leftover .58 poly drip hose make nice sling carriers for most spine-laden cacti. Multi-trunk columnar cactus can be severely damaged by puncturing itself during transit. Careless handling may result in permanent scarring of cacti surfaces and could potentially cause diseases and pest infestation. Sponges or mattress foam can be placed between and around trunks and then wrapped with straps to help avoid this catastrophe. Use barbecue tongs (or any other long-handled tongs) to handle cacti with prickly pads.

- Caution must be taken when handling cactus. Eye protection should always be worn. Gloves should be worn, however, they will not provide much protection against needles and spines. It’s also a good idea to dispose of gloves used during cactus-moving, because there may be some unwanted bristles stuck in them.

The spines and hundreds of “stickers” that can get into your skin will be felt for days! If injured, remove the larger ones with tweezers and use an adhesive tape such as duct tape to remove the smaller ones. Deep cactus spine wounds can get infected quickly if not treated. Soaking the infected area in warm water may help, but if the pain continues, definitely see a physician.

Planting & transplanting

The optimal time to plant most cacti is in the fall, from late September to early May, which allows roots to become more established before the onset of intense summer heat. Soil and water are important factors in the cactus garden’s success. Over-watering may be the largest single factor in failure.

When transplanting, give the root system time to heal before watering.

We recommend laying the uprooted cactus under a tree or shaded area, or cover it with a 30 percent-or-less shade
THE POWER OF THE 335XPT GOES WAY BEYOND CUTTING STRENGTH. IT’S THE POWER OF HUSQVARNA’S ARBORIST-FOCUSED ENGINEERING.

The 335XPT arborist saw by Husqvarna. Powerful, balanced, light and agile, it easily gets you in and out of those high, tight spaces. It boasts an unbeatable power-to-weight ratio, snag-free shape, and our industry-exclusive ArborGrip, a textured handle with thumb and throttle finger supports for greater control and maneuverability. No one is more committed to the Arborist than Husqvarna. We offer a full line of specially designed safety gear and are a proud sponsor of the ArborMaster training programs, ISA and NAA. To find the nearest Husqvarna Power Retailer, call 1-800-HUSKY-62 or visit our web site at www.husqvarna.com.
cloths. Lightly coat the root surface with dusting sulphur and wait approximately two weeks before planting. This gives the cactus time to callus up a bit, thereby helping the plant adjust to its new location. Shade cloths can be purchased at local nurseries, and dusting sulphur is usually available in small containers at nurseries or agriculture/horticulture supply centers.

Keep a distance from heavily, even moderately irrigated planting zones. Educate the client on the negative effects of too much water. Good drainage is essential. If using pots, make sure they have drainage holes. A planting mix of 1/3 sterile mulch, 1/3 topsoil and 1/3 course sand is recommended. Talk to your nursery for specific watering advice for each variety of cacti.

Cacti maintenance

Cactus maintenance is relatively easy, and includes shaping the plant, removing dead or diseased parts, and pruning the undergrowth to avoid attracting pests such as packrats. Cutting out decayed or destroyed tissue can be done with a sterile knife and treated with dusting sulphur, which acts as a fungicide and disease barrier, and helps prevent punctured cacti from rotting when applied to the wounded flesh. Spent stalks, blooms and fruit may also need removal occasionally. Again, don’t forget your eye protection!

Cactus is an important design element in almost every yard we have built. The contribution cacti and succulents make is equal to the effect we get with annual flowers. We often use the two in contrast to create the award-winning atmospheres that today’s sophisticated landscape clients want. Because of the region/climate that we build in, we are able to place a large variety of material successfully. Due to the limited availability of water, we can use cacti and other drought-tolerant plants to help control water usage.

John and Barbara Stropko are the owners of New Desert Gallery Inc. This article was reprinted with permission of Landscape Contractor Magazine.
The New RedMax®

BCZ3000S

The most powerful 30cc class trimmer!

In early 2004, RedMax will introduce this new BCZ3000S trimmer. See it first at GIE Booth 1340.

Features and Benefits

- 29.4cc Strato-Charged™ Two-Cycle Engine
  - The most powerful in the 30 cc class.
  - 1.4 HP for maximum productivity.
  - The simplest. Two-cycle engines save maintenance cost and time.
  - The cleanest. First two-cycle engine to be EPA/CARB 2005 compliant without a catalytic converter.
  - The most economical. The Strato-Charged engine can save 30% in fuel costs.
- Lightweight 12.2 lbs.
- Large 2.5" diameter clutch for longer life, less slip

Flexible, durable debris guard

4 Bearing heavy duty gear head

Aluminum outer pipe
Solid steel drive shaft

Large 2.5" clutch
Metal clutch housing
Rubber anti-vibrating system

Ergonomic soft grip loop handle

Single action flexible trigger
(No breakage)

Free Flow™ System prevents overheating caused by air intake clogging

One way valve fuel cap
(No leakage)

Heavy duty tank protector

Commercial grade air cleaner

PT104 Plus 4" Tap & Go Nylon Head
Metal insert tap knob gives longer life

See us at TCI EXPO 2003!

RedMax®

Komatsu Zenoah America, Inc.
4344 Shackleford Road, Suite 500 • Norcross, GA 30093
800-291-8251, ext.213 • Fax: 770-381-5150
www.redmax.com

Please circle 76 on Reader Service Card
Workers’ Comp: Putting a Lid on Costs

By Phillip M. Perry

If you’re like most employers, you’re concerned about the rising costs of employee benefits. And few such costs are rising as rapidly as those for workers’ compensation insurance.

Premiums for workers’ comp have risen 50 percent nationwide in the last three years – the fastest pace in a decade.

Are you being over-billed?

Is your insurance company calculating your premium correctly? To find out, have your insurance agent answer the following questions:

♦ Are your workers classified correctly?
Different work positions are classified at different premiums. It’s easy for these to get out of whack. For example, the promotion of an employee to a less risky position may not be reflected in your workers’ comp calculations unless you take steps to make sure it is. Someone who never climbs may be thrown in with the rest of your crews for insurance purposes.

♦ Is your payroll reflected accurately?
The premium you pay is based upon your payroll level. If your company experiences a great deal of shifting among employees during the year, your payroll records at the insurance company can become outdated.

♦ Are exemptions duly reflected in your calculations?
Overtime pay and commissions are often exempted from your premium calculation. Make sure they are.

♦ Is your experience modification (or “x mod”) rating correct?
Your premium is adjusted by your history of workplace injury, as distilled into an “experience modifier.” Make sure yours is accurate.

"Every company should request a claims audit from the insurance company to check the x mod," insists Norman A. Peterson, president of Norman Peterson & Associates, a consulting firm that specializes in workers’ compensation issues (www.returntowork.com). "We estimate that if you were to get an independent audit of 100 companies you would find errors in 90 that affect the x mod."

Speaking of audits, there’s no reason why you can’t ask your insurance company to visit your place of business and conduct a job safety analysis. It’s a great idea to have knowledgeable individuals analyze the safety risks of tasks your employees perform and suggest modifications to reduce risk of injury.
according to the New York City-based Insurance Information Institute. The increase is even greater in states such as Florida and Texas. The hardest hit state is California, where rates have nearly doubled over the past several years, prompting some business owners to move elsewhere.

"Employers are up in arms," says Daniel C. Free, president of the Indianapolis-based Insurance Audit and Inspection, a risk management consulting firm (www.insuranceaudit.com). "Some businesses are getting back-to-back increases of 25 percent to 40 percent, even if they have favorable workplace accident rates. No insurance buyer knows how to budget for a 20 percent increase that turns out to be twice that number. And employers often don't know what the new rates will be until a few weeks before renewal time. Then, of course, it's too late to shop around."

The big increase comes on the heels of a decades-long effort by many commercial tree care companies to reduce the risks inherent in their operations. "The irony is that in many respects the workplace is safer than it's ever been," notes P. J. Crowley, vice president of the Insurance Information Institute. "The root cause of the problem is the escalating cost of medical care and the number of prescribed follow up visits to medical professionals." Adding fuel to the fire is the length of time injured workers stay off the job, the continuing leak of wages that must be paid while they are on leave, and the cost of replacement labor.

You can't reduce the level of workers' comp benefits as you can with health insurance. That's because states mandate full coverage for treatment of on-the-job injuries. So how can you control costs?

Let's see what the experts say.

Step #1
Increase workplace safety

By far the most important step you can take is to identify and address the riskiest areas of your operations. Re-
Get more information

Here are some Web sites with information about workers’ compensation insurance:

www.iii.org. The Insurance Information Institute offers a detailed overview of the current state of workers’ comp insurance, factors contributing to escalating costs, and relevant laws by state. Click on “More Insurance Issues” Under “Hot Topics” and then on “Workers Compensation Insurance.”

www.mostchoice.com. This agency marketing site provides a detailed explanation of the calculations used to determine premiums for workers’ comp insurance. Click on “Workers Comp” under the “Business Insurance heading, then on “Purchasing” and the related headings. The site features an interactive quote request form sent to an array of independent agents.

www.law.cornell.edu. Hosted by the Legal Information Institute at Cornell Law School, this site offers a roundup of federal and state laws on workers’ comp. Click on “Law About” and then “Accident and Injury Compensation” and then “Workers Compensation.”

info.insure.com. This marketing site for insurance agencies includes an interactive tool with capsule views of workers’ comp law by state. Click on “Workers compensation insurance law tool” under “Your Business.” For in-depth information about workers comp, click on “Small Business,” select “Small Business Insurance Main Page” and then “Workers compensation insurance library.”

quickly as they are able. Add to this a training program that emphasizes safe workplace procedures to reduce the risk of accidents.”

Smaller employers especially must be vigilant about workplace safety. “If losses accumulate to any great degree, your insurance company will cancel coverage,” says Free. “And you are going to have to tell prospective replacement carriers why you got canceled. If they decide not to take on the risk you will be thrown into your state’s assigned risk pool. That’s expensive.”

Step #2

Get employees back to work quickly.

Workplace safety makes sense for any number of reasons, but costly accidents will happen. When they do, you need to get the injured worker back as soon as feasible. Indeed, it’s the “staying at home” part that is most costly for employers. The expense starts with the need to hire replacement workers. “Think of the time it takes to train someone to do an injured worker’s job,” says Free. “None of that is covered by insurance.”

The costs don’t end with the training bill. Untrained employees just don’t have your regular staff’s expertise and customer contacts. Furthermore, employees who stay out of the workplace longer than necessary may get too comfortable and decide to lengthen their stay indefinitely or even to build a lawsuit against your business.

The trick, then, is to institute a program that encourages early return. “We estimate that a good ‘back to work’ program will reduce the cost of having an injured party at
home by some 40 percent to 50 percent,” suggests Norman A. Peterson, president of Norman Peterson & Associates, a consulting firm that specializes in workers’ compensation issues (www.returntowork.com). “The No. 1 cost driver for workers’ comp is time spent at home.”

Sounds like there’s room for significant savings. Here’s what to do:
- Create temporary positions for injured workers.
- Get proactive. Today, before accidents happen, draw up contingency plans for workers who are injured on the job. “Create in advance a modified temporary position to bring any injured worker back on the day of the injury,” recommends Peterson. “Remember that time is your enemy when an employee walks out the door.”

At first blush, it seems counterintuitive that an injured worker can get back to work right away. After all, doesn’t the reality of an injury preclude business as usual? It does, but that “as usual” part is subject to alteration: The trick is to develop productive positions for which the worker’s injury does not rule out participation.

“A climber or worker who deals in heavy lifting might not be able to resume full duties right away,” admits Crowley. “However, that same worker might be able to make sales calls or return to your job site and have some responsibilities that are not as physically taxing.”

Step #3
Communicate your concern.

If you don’t express your concern about rising costs, how will people know? Reach out to everyone involved in the health care network. Take these steps:
- Communicate the problem with your work force.

You know that workers’ comp costs are escalating, but do your employees?

Chances are they have no idea how much you have to pay for workers’ comp or how it affects the health of the company that provides their paychecks. Sharing this information will open their eyes to the problem—and to how they can help by fostering workplace safety and returning to work quickly if they are injured.

- Communicate with medical professionals.

Workers aren’t the only ones who need education about the cost of workers’ comp: So do doctors. “Doctors tend to prescribe the maximum medical care available,” says Crowley. “Make sure the medical providers that treat your workers are familiar with the workers’ comp system and prescribe what your workers need but not more than they need.”

A big part of the education solution is to make sure the doctor knows the
demands of the position held by the injured worker and the alternative position which you have made available for the employee. You may also call the doctor and discuss the treatment.

- Express concern for the injured worker. Remember that the injured worker is stewing at home, irritated that he has been hurt and perhaps angry at your business. Such negative feelings can escalate if the worker feels you do not care what has happened.

"Employers who are viewed as uncaring open themselves up to claims that are not legitimate," says Free. "There is a lot of workers' comp fraud out there."

Free suggests designating what he calls an "employee diplomat" who maintains contact with the injured worker and expresses the concern of the employer. Not only will this make the worker feel better, but it will also encourage cooperation with the back-to-work program.

Bonus tip: About half the states allow you to reduce your workers' comp costs by paying a deductible or by using managed care organizations to provide required care. See if your state is one of them.

Take action now

You can help reduce costly increases in workers' comp costs by following some of the advice in this article. "In this tight insurance market, carriers will want to see documentation that you are controlling costs and reducing risks," stresses Crowley. "So when you take proactive steps you enjoy the prospect of insurance savings."

Philip M. Perry has published widely in the fields of business management, workplace psychology and employment law. Perry is syndicated in scores of magazines nationwide. He is is a two-time winner of the American Bar Association's annual "Best Article" award as well as of that organization's "Value to the Reader Award." His clients include The Industrial Research Institute, The American Payroll Association, New York Life Insurance Company, and the Spring Manufacturers Institute.

Tree Care Has A New Voice.
(But A Familiar Face.)

Known as the National Arborist Association since 1938, we've recently changed our name to the Tree Care Industry Association (TCIA). But our mission remains the same: to advance tree care businesses.

We're still dedicated to providing our members with easy access to the business management expertise they need to succeed, including marketing, finance, estimating, sales, accounting and human resources. We keep our members informed about the latest innovations in tree care safety, equipment, technology and techniques. We continue to add each TCIA member company to our comprehensive new business referral list. And our members contribute their voice to our lobbying efforts in seeking fair and beneficial governmental regulations and legislation.

If you like the sound of our new voice and the strength of our familiar face, then call 1-800-733-2622 or go to the Web at www.treecareindustry.org to learn more about the benefits of joining TCIA.
Can topping and mutilation of trees be reduced through restrictions on aerial devices?

By Russell Ball

Across mainland Europe, lopped and topped trees are all too common, often as a result of work done from aerial devices. Guidelines for the use of aerial lifts for arboricultural operations — via the European Arboricultural Council (EAC) — is therefore welcomed news. A primary focus of the guidance must be limitations of use for aerial lifts for pruning operations.

Arboriculture is defined as both a science and art. Moreover, the two are interrelated. The science comes from understanding the biology of trees. The art lies in defined pruning techniques that are often only achievable by skilled climbers, notably crown thinning and reduction. The synthesis of skilled climbing operations and an understanding of tree biology is:

- the correct (spatial) removal of specified percentages of the canopy within or from the periphery of the crown;
- making target pruning cuts that either allow the tree to effect proper wound closure (compartmentalization) or that minimize tree wounding (drop crotching).

The above operations may be described as:

- crown thinning should produce a uniform density of foliage around an evenly spaced branch structure;
- crown reduction should maintain the approximate original shape of the tree while leaving no visible branch stubs.

Proper crown thinning and reduction can be achieved by skilled climbers as they work throughout or around the canopy, being aware of the branch flow and canopy structure. The latter structure should guide the pruning operation rather than the climber imposing his desired shape or form on the tree. After pruning, the tree form or shape should not be altered radically. (Pollarding is an exception).

"Because the climber spends the vast majority of his/her time working in and relying upon the tree structure for support, they invariably have a close sense of the tree's structural shape and balance," notes Jon Hartill, owner of Hartill Trad-Expert in Sweden and a former FASTO Training Standards Officer and NPTC Assessor. "They also have greater flexibility of movement within the tree, and therefore do not have to remove branches to gain access to other branches."

This latter point begins to illustrate the problems with aerial lifts. Frequently, with such equipment, the access for pruners both around and within a tree canopy is restricted. This becomes very obvious in urban situations where trees are flanked by adjacent buildings or other obstacles.

"Trees are three-dimensional structures, while aerial lifts tend to be suited to two-dimensional environments, such as buildings or towers," says Hartill. "The tree crown is of such random structural design and variety that aerial lifts function very ineffectively in tree work operations that demand total access."

In this way, the tree's scaffold limbs may impede bucket access within the canopy. Given these restrictions on access and reach, pruning cuts are made wherever the bucket can be conveniently placed.

"Because of these restrictions, operators may resort to the use of pole saws to reach pruning points," adds Hartill. "Good prun-
ing cuts at the correct angles cannot be made from a distance. Invariably, cuts are ripped or branch stubs are left. This is not in the best interests of the tree and defeats the purpose of pruning altogether.”

Does the widespread use of aerial lifts accord with the science and art of arboriculture? Is retention of the natural tree shape and form achieved? Can target pruning be achieved? I would answer, “No.”

In mainland Europe, lopping, topping and lion’s tailing is the frequent result. The situation is made worse by the fact that many trees in streets and parks (the valuable and ever-so-visible public trees) are lopped and topped using aerial lifts under local authority (LA) contracts. What are the misguided motives? Aerial lifts are quicker, but at what price? Could it be that after giving trees a “good haircut” the timing of the pruning cycle is extended?

Of course, aerial devices have their place in arboricultural operations – utility work, crown lifting, re-pollarding, hedge trimming, topiary, espalier pruning, felling dangerous trees (when climbing would be hazardous) and gaining access to large trees when throw lines cannot reach the lowest branches. Aerial lifts can also be used by climbers for an easy-ride to the top of the tree. However, aerial lifts have limited use for crown reduction/thinning operations. There will be many who will be critical of this viewpoint, as aerial lifts have been used extensively across mainland Europe for pruning operations for many years. I recognise that the use of aerial lifts is a skilful operation, however, for a number of applications they are no replacement for skilled tree climbers. The production of the new EAC guidance will be a golden opportunity to set this straight for the industry.

So lastly, what are the logistics of the problem and possible solutions? The logistics in the public sector are huge as the culture of using aerial lifts is well established across mainland Europe. To restrict their use immediately would be impractical. Moreover, there simply aren’t enough skilled climbers to fill the void. So how do we break the cycle?

A possible solution would be to prohibit the use of aerial lifts on all newly planted trees (written into LA contract specifications). Furthermore, more skilled climbers must be trained for their future management. In this way – as the population of newly planted urban trees grows – we will have time to develop a new work force. This would allow the industry to phase out the use of aerial lifts gradually for the tasks to which they are unsuited. An impossible goal or a challenge to the industry that would represent a crucial blow against one of arboriculture’s biggest issues – topping?

Russell Ball is the owner of Árbol EuroConsulting in Madrid, Spain. TCI
North to the Future...

of sawflies and wasps

By Sonya Senkowsky

To outsmart Alaska’s notorious mosquitoes, graduate student Chris MacQuarrie heads out early. By 7:30 a.m. one mid-July day (which is, effectively, still spring this far north), we are at his first study site – a tree near the sixth hole at Anchorage’s Russian Jack Springs Park golf course.

The bloodsuckers are out of sight, but another insect has gotten the jump on us. Just about every leaf on the birch tree is mottled with brown. The blotches are a telltale sign that sawflies are here.

A multiplying threat

MacQuarrie came to this state’s largest city this year to help lay the groundwork for a battle against a voracious invader – the amber-marked birch leaf miner. The adult form of the pest, the sawfly, is named for the sawlike appendage it uses to cut into birch leaves and lay eggs. When the larvae emerge, they become leaf miners, eating through layers of leaf tissue and turning once-green leaves brown.

Several types of leaf miners exist throughout Alaska. But a noticeable decline in the health of Anchorage birch trees recently prompted researchers to take a closer look at Profenusa thomsoni, an invasive species originally from Europe. The insect most likely hitched its way to the state on imported ornamental birches, say state and federal foresters. It has no natural predators here, and has feasted unchecked on trees in the Anchorage Bowl for at least seven years, estimates research entomologist Ed Holsten, of the Alaska region of the USDA Forest Service.

Sawfly larvae, also known as birch leaf miners, await sizing and counting beneath a microscope in an Anchorage lab after being pulled from their “mines,” the spaces in the leaf where they hatched and later ate away leaf matter.

The wasp Lathrolestes luteolator is a 3 mm-long “parasitoid” that targets the same species of birch leaf miner now invading Alaska. The wasp lays its eggs in the birch leaf miner’s larvae, destroying its host. Canadian foresters plan to send thousands of the wasps to Alaska.
"Nobody really worried about it because populations were small," says Holsten. "Suddenly, in the past two years the population exploded."

Earlier this year, state and federal foresters issued a report estimating that the insect had infested more than 25,000 acres of birches in southcentral Alaska, mostly in and around Anchorage, as well as in select areas farther north, near Fairbanks, where a separate, more recent introduction is suspected. More recent investigations, however, showed that the leaf miner had spread even farther. Foresters this summer found larvae in Talkeetna and Trapper Creek, communities within 30 miles of Denali National Park, as well as in Haines, a Southeast Alaska community near Canada's Yukon Territory. Preliminary investigations in Canada have also turned up birch leaf miners in the Yukon and Northwest territories. Without controls, the scourge will continue to spread.

"The interior has an almost unlimited supply of birch," Holsten told the Anchorage Chronicle early this summer, raising the possibility that the invader may enter the natural forest. In Anchorage, dry conditions and recent warm weather - the city recorded several record high temperatures over the last two years - have further stressed trees.

State and federal foresters, in cooperation with Canadian colleagues, plan to import a natural control against the pest next summer from Canada: a parasitic wasp that lays its eggs in leaf miners, destroying them in the same way the sawflies' young destroy leaves - from the inside.

A similar effort worked in the early 1990s in Edmonton. Holsten expects a successful control here to take 5 to 10 years. But before state and federal agencies bring on the foreign counterassault, they need to know their enemy. "We have to know the leaf miner and what it does and what's eating it now," explains Holsten. "Otherwise we can't determine what effect the parasite has."
Reading the leaves

An entomologist pursuing his Ph.D. at the University of Alberta in Edmonton, MacQuarrie can read the signs left in the leaves — tiny brown bumps that, if you look closely, contain sawfly eggs smaller than pinheads, all preparing to hatch into ravenous larvae that will devour the leaves as they grow.

"On one leaf I’ve had as many as 80 eggs," he reports. “And now that the larvae have started to hatch, you can get a couple dozen in a leaf.”

The pest does not kill trees. It weakens them, making them more susceptible to other threats.

The state plans to import the leaf-miner-killing wasp starting next spring, reports state entomologist Robert Burnside. One of the goals of the project is to reduce the amount of chemicals homeowners are putting out to protect trees. State officials have been urging homeowners to focus on watering and general tree health and to avoid the use of pesticides until the wasps can take affect.

Opportunity for education

The advice has caused some debate among local tree care experts, with some calling for a more aggressive counterassault. One point all seem to agree on, however, is that the public predicament of one of Alaska’s most popular native deciduous trees is providing an opportunity to underscore the importance of good tree care practices.

“We’re having a lot of people ask about it,” says John Trautwein, owner of Anchorage-based Treeworks. “People are responding to what they’re seeing in their yards. It’s alarming them.” Commercial clients, too, are concerned.

“I think it’s making people more aware of good care practices, along the same lines as the spruce bark beetle epidemic,” agrees Mike Post, owner of Tall Trees in Anchorage.

Though a single season of the insects’ attention will not kill a tree, birches already stressed by improper watering or other miscare can decline. “It’s kind of a cumulative effect,” Post says. "Four to six years of heavy infestation in a row is just going to knock out the tree’s reserves.”

Many tree care experts are reminding clients about tree-strengthening basic care, such as aeration, to resolve the problems of compacted soil and regular, deep watering.

Trautwein has observed that leaf miners do the most damage to trees that are already in need of water or other basic care. He urges a “holistic” approach: “Watering, making sure that root zones stay undisturbed — all these classic things that we know are very simple — do make a big difference as to whether a tree is going to be heavily infested or not,” he insists. “Very simple things can go a long way to keep trees healthy.”

His prescription is well-received, said Trautwein: “[Clients] like to hear that, because it’s something they can do. They don’t have to pay me to water their trees and keep their root zones undisturbed, undriven on, or unfilled. Those are things they can do.”

Other approaches might include exploiting knowledge of the leaf miner’s lifecycle, suggests Custom Tree Solutions owner Sam Clark, who serves the Fairbanks area. After eating the inside layers of leaves, the larvae drop to the ground, where they overwinter. Clark suggests collecting and destroying leaves immediately, a measure that would take away insulation that might help the larvae survive Alaska winters. “Rake it up and burn it,” he recommends. “That’s a great way to get rid of a lot of the population.”

Matt Tyrala, of Aspen Tree Surgery in Anchorage, has been one of the loudest Alaska voices for a response that includes pesticides. Tyrala says his own research testing tree clippings for stored starches has convinced him that the insects are depleting the birches’ ability to store adequate winter reserves. He offers the diagnostic test to clients, using it to assess a recommended course of action.

In a commentary written for the Anchorage Daily News last year, Tyrala advised a twofold approach that involved adding appropriate fertilizer to bolster tree reserves while also treating ailing trees with systemic injection (a service he does not offer): “We do not have to stand by helplessly and watch them die,” he wrote.

Post also believes in attacking leaf miners more aggressively. Even if the release of natural predator wasps does work, he says, trees will die waiting. “It’s
Get your gears in motion for safety...

THINK Model Company Safety Program from TCIA - the Tree Care Industry Association. We've been helping tree care businesses keep workers safe since 1938. No other professional tree care association has more experience and expertise to help you:

- Prevent injuries, accidents and property damage.
- Lower insurance costs.
- Satisfy stringent bid requirements.
- Boost productivity.
- Provide OSHA compliance.
- Produce better motivated employees.
- Improve ability to finish jobs on time and within budget. Enhance your company’s reputation.

The TCIA Model Company Safety Program represents the best practices of some of the foremost companies in the industry.

Phone: (603) 314-5380
1-800-733-2622
Fax: (603) 314-5386
E-mail: tciawww.treecareindustry.org
Web: www.treecareindustry.org

Please circle 65 on Reader Service Card
going to be years before we see any sign of the advantages in that,” he says. For now, he too is recommending injections to inoculate trees against infestation.

Post reports good results using Metasystox, a systemic insecticide that is injected by the tree’s roots. The roots transport the pesticide into the leaves, where it directly targets leaf-eating pests. “Once insects eat the leaf, it’ll stop them,” he says. “It’s real effective.”

Injections must be applied early — before July. But results are dramatic, insists Post. Trees treated in early spring with good watering aftercare throughout the summer ended the growing season with no sign of leaf miners, he reports. Once the treated trees are in better health, Post follows up by educating clients on other care techniques, such as proper pruning.

Good watering practices are still key to the success of this approach. Post advises clients to use soaker hoses rather than sprinklers, watering slowly and steadily over 8 to 10 hours to ensure that the water will sink in deeply rather than just saturate the first inch or so of soil. Clients who have already weathered serious infestations are most receptive to the advice; some automate the process using a timer or get into the habit of turning on their soaker hoses when they go to sleep.

“Most people — especially people who may have lost a birch tree — will do anything to try to keep them alive,” he says.

**Here to stay**

How many trees will die before the wasps stop their progress — if the wasps are successful? It’s not easy to find two experts who agree. On the other hand, all agree the leaf miners do appear to be here to stay — at least for a while.

“I have my doubts about whether or not we can actually do anything in the very near future to bring the systems into balance,” Trautwein cautions. “Certainly, having a local predator for this pest will have an impact in the long term. Meanwhile, the pest population is getting bigger and bigger.”

At the same time, Canadian foresters who have been following the spread of the Amber-marked birch leaf miners for more than a decade say that they expect the birch miners will remain more of a problem for residential tree owners than for wild forests.

Birch miners seem to prefer “nice open-growing trees in urban settings” or those on forest’s edges to those in the deep forest, says David Langor, research scientist with the Canadian Forest Service in Edmonton. Scientists as yet don’t know why, though they suspect that temperature, sunlight or predators are factors. MacQuarrie will be looking at some of these issues over the next few years.

On one scouting trip looking for the leaf miners in Alaska, Langor confirmed his theory. “In every single urbanized setting or urbanized spot — even in the little gas station on the side of the highway where there’s a single birch tree — we found them.” A few yards into the forest, however, and the there was no sign of the insects.

Langor has faith that the “parasitoid” wasps can still do their job — but the new findings may call for a wider release in the first year. “Let’s start solving the problem right away,” he says. “There’s no impediment toward having an open release in one localized area and following up to see how the parasitism is looking.”

This past summer, he and colleagues collected more than 7,000 tiny cocoons of overwintering birch leaf miners — which they hope will hatch out into an army of larva-loving wasps (that have parasitized the miners) this spring. If the cocoons turn out to be duds, the Canadian foresters will capture adult wasps to send to Alaska instead. The wasps are about 3 mm long and do not bite or sting humans, but specifically target the problem of leaf miners.

Even if the wasps were not shipped here, the predator would eventually arrive on its own. “But, in the case of Anchorage, do you want to wait that long?” asks Williams. “It makes much more sense to just help the parasites along, the way we’ve been inadvertently helping the leaf miner.”

Sonya Senkowsky is a freelance science writer based in Anchorage. Portions of this article first appeared in the Anchorage Chronicle.
The SC352: Power-to-Size Ratio that Performs

The new SC352 possesses the power necessary for right-of-way clearing jobs but remains agile and compact to tackle hard-to-reach, backyard stumps. Features include hydraulic front steer and two-speed ground drive, increased visibility from the operator station, and two-stage cutter wheel drive system. The SC352 lives up to the Vermeer legacy — solid performance, unmatched quality, exceptional ingenuity.

Vermeer

Call 1-888-VERMEER or visit www.vermeer.com

VERMEER and VERMEER LOGO are registered trademarks of Vermeer Manufacturing Company in the U.S. and/or other countries.
© 2003 Vermeer Manufacturing Company. All Rights Reserved
Helping Plants Survive Armillaria Root Rot (Oak Root Fungus)

By J. Harold Mitchell

In Southern California, *Armillaria mellea* is considered a native species of fungus. It is found throughout the coastal slopes and temperate inland valleys in which not only oaks but sycamores, alders, willows and many woody shrubs have existed for hundreds of thousands of years. In the late 1800s, when early agriculturists began planting orchards, vineyards and various introduced ornamental trees and shrubs, they soon noticed that many trees or vines were being killed by a root and root crown fungal disease found to be in locations associated with old oak roots. It was natural, therefore, that the disease became known locally as "oak root fungus."

At the present time, about 36 distinct biological species of the Genus *Armillaria* have been isolated and identified by plant pathologists. The genus is worldwide in distribution, and practically all woody plant groups are susceptible to one or several of the most common species. In North America, *Armillaria mellea* is one of the most widespread species, and we believe it is the one that we have most frequently encountered in our field observations in Southern California. Because it has only been in recent years that sophisticated biological and biochemical techniques have been developed to accurately identify individual *Armillaria* species, we acknowledge that the exact species involved in most of our field observations and conclusions cannot be positively established, although we do believe they have been made on a species of the Genus *Armillaria*.

During more than 50 years in business, we estimate that our staff has examined more than 50,000 trees, in various conditions of health, primarily in the greater Los Angeles area. Long ago we identified attack by *Armillaria* as the single most frequently encountered life-threatening ailment of plants throughout this area, involved in their death well over 50 percent of the time. The next most frequently identified disease problem is infection by *Phytophthora*. Of the several thousand trees or plants on which we have identified *Armillaria* during this period, we have carried out remedial treatments of one type or another on well over 1,000 specimens, giving us extensive prodigious field experience in working with this major disease pathogen.

**Symptoms**

Generally speaking, trees that are infected with *Armillaria* decline slowly over a period of years—in some cases over several decades—although we have seen replacement trees planted in the same spot as a dead tree become infected and girdled in as little as two years! Obviously the rate of decline depends upon several environmental factors that affect both the health of the host as well as the vigor of the pathogen. Whether or not *Armillaria* had previously been identified on the property can be very important since it is well
known that the fungus mycelium can survive as a saprophyte living on dead plant tissues such as buried roots or old stumps for many years (Shaw & Kile 1991).

The following list of symptoms or conditions, some or most of which may be found associated with an Armillaria infection, are not individually specific to Armillaria and may be found on most unhealthy or stressed trees. So by themselves they are not definitive, but on any dead, dying or stressed plant they should sound an alarm and certainly justify a thorough examination, the particulars of which will be covered later in this article. Positive identification of Armillaria can only be made by the identification of their mushroom, by the discovery of the infectious mycelium in dead or dying host tissues, or by the presence of rhizomorphs arising from infected roots or buried plant parts. This inspection is most effectively performed in most cases by a thorough exposure and examination of the root crown area of the host by an experienced professional.

Advanced foliage thinning and smaller branch die back in the canopy of this California live oak are signs of some major stress or disease.

Following are some of the symptoms which may indicate an Armillaria infection, or conditions which are often associated with one.
1. Reduced or stunted shoot growth
2. Smaller leaf size
3. Chlorotic foliage
4. Terminal tip and crown dieback
5. Thinning of foliage canopy
6. Sudden wilting or collapse
7. Development of many suckers on major branches or trunk
8. Presence of cankers or cracks at or just above root collar
9. Development of adventitious roots from buried trunk
10. Stress induced reproduction such as heavy flowering or fruiting
11. Loosening or separation of bark from trunk
12. Bleeding or gum secretion from bark
13. Presence of mushrooms near trunk base
14. Detection of rhizomorphs on surface of roots or in root collar region
15. Presence of white mycelial fans or hyphae in cambium or sapwood tissues
16. History of other plants in vicinity dying suddenly
17. Progression of dying plants down a hedge row
18. Absence of any root flare where the trunk enters the ground, often an indication of a change in grade level
19. Obvious overwatering
20. Planting of moisture loving plants under the drip line

Visit Our Website to see a Demo Video of the Log Mauler in Action! www.logmauler.com

Loading logs is made quick and easy with the Log Mauler

Patent No. US6,520,266 B1

Chuck Smith's Log Mauler Inc.
46368 Y and O Road
East Liverpool, OH 43920-3869

Made in the USA with U.S. Steel

For More Information, Please Call: 330-382-0199
Website: www.logmauler.com

Please circle 24 on Reader Service Card

TREE CARE INDUSTRY - NOVEMBER 2003
In this situation, several clumps of *Armillaria* mushrooms appear several feet above the soil line on the trunk flare of this olive tree.

**Mushrooms**

Frequently the first indication of an *Armillaria* infection is the production of basidiomes, commonly called mushrooms, which appear in light tan colored clumps ranging from a few to dozens of individuals, usually at the base of an infected host. They usually appear in the late fall. Upon examination, it will be found that they are attached to the mycelium in some adjacent or underlying root structure, or in some species to a rhizomorph, from which they derive their energy. The biological function of a basidiome is the production of spores, which may be disseminated by wind or in other ways, and which serve to spread and perpetuate the species. However in a dry climate such as we have in Southern California, they are not considered by most pathologists as a viable means of spread. Although they may be an early warning sign of an *Armillaria* infection, it requires a trained mycologist to identify them accurately, as there are many species of look-alike mushrooms that may occur in a garden.

**Mycelium**

In Southern California, initial infection occurs on underground parts, either by the contact of a root and a rhizomorph or of a healthy root and a diseased root. During this contact, the fungal hyphen, which are individual thread-like structures, attack and kill the host tissues. They are white and initially are most frequently found in the cambium tissues of the host. As the disease progresses, these hyphae begin to coalesce into parchment-like sheets that are referred to as mycelial fans.

As the cambium is killed, the outer bark frequently begins to dry out and cracks develop as it shrinks. Normal growth cracks on the trunk are vertical, so if any horizontal cracks are observed, be especially suspicious. By this time the bark has frequently separated from the sapwood, and by tapping the bark with a small plastic-headed hammer it is often possible to detect underlying injury by a distinct change in the sound. Cutting into the bark tissue until the cambium is reached will disclose the white fungal mycelium if it is associated with an *Armillaria* infection.

Once the fungus mycelium has spread to the root collar, it often progresses upward in the trunk within the cambium, where we have traced the infection to as high as 7 feet above the soil line. In order to examine for the presence of mycelium, if the infection has not yet moved into aboveground parts of the host, it will be necessary to excavate the soil from around the base of the tree to expose underground roots and the root crown. Where possible, this can best be accomplished with a stream of water to wash away the soil. An advantage to using water is that if rhizomorphs are present, they are less likely to be damaged than if soil is removed using tools.

**Rhizomorphs**

During an examination, occasionally you will notice the presence of rhizomorphs, which are highly complex morphological adaptations of the hyphae that arise from and remain attached to the underlying mycelial tissues from which they derive most of their nutrition. They
MAUGET'S NEW & SIMPLER MICRO-INJECTION SYSTEM

"GENERATION II"

LEAK PROOF
HERMETICALLY SEALED
COMPLETELY CLOSED SYSTEM
HIGHER VOLUMES (up to 20 mL)
FASTER AND EASIER TO USE
NO COMPLICATED DEVICES
NO HIGH PRESSURE DAMAGE
NO BARK SEPARATION
LESS TOOLS REQUIRED
SAFEST CAPSULE AVAILABLE
THE MOST COST EFFECTIVE

THE LARGEST SELECTION OF MICRO-INJECTION PRODUCTS AVAILABLE!

EQUIPMENT COST, UNDER $50.00

FERTILIZERS:
- STEMIX
- STEMIX HI-VOL
- STEMIX ZINC
- STEMIX IRON/ZINC
- INJECT-A-MIN IRON/ZINC
- INJECT-A-MIN MANGANESE

INSECTICIDES:
- IMICIDE
- ABACIDE
- INJECT-A-CIDE
- INJECT-A-CIDE B

 FUNGICIDES:
- FUNGISOL
- TEBUJECT

COMBINATION PRODUCTS:
- IMISOL (FUNGISOL + IMICIDE)
- ABASOL (FUNGISOL + ABACIDE)

ANTIBIOTICS:
- MYCOJECT

MAUGET'S GREATEST ASSETS,
OUR CUSTOMERS AND THEIR PATIENTS

WEB SITE: www.mauget.com

Mauget IC
800-TREES Rx (800-873-3779)
877-TREE HLP (877-873-3457)
(Toll free technical support Line)

See us at TCI EXPO 2003!

Please circle 54 on Reader Service Card
closely resemble small roots, for which they may be mistaken. As they spread out over the surface of roots or into adjacent soil, they can penetrate healthy roots and establish new foci of infection, both on the host from which they have arisen as well as on the roots of adjacent plants that they come into contact with. Although the frequency and length of these rhizomorphs varies from species to species, in the case of *Armillaria mellea*, they seem to be restricted to a few feet from their food base. Although they have been observed more deeply, they are found primarily in the upper 2 feet of soil—a significant factor to be remembered in devising control strategies. Do not rely upon the discovery of rhizomorphs to make an *Armillaria* diagnosis, since you will usually not see them.

Care should be taken not to injure the roots unnecessarily, as many of them may be perfectly healthy. Once this exposure has been completed, it is necessary to cut into the bark as deeply as the cambium to determine whether or not any infection is present. This can be done with a sharp chisel or knife. Bark cracks or bleeding may also occur on some of the buried roots. Special attention should be given to forks in the root structure that usually retain moisture longer and seem to be prime locations for the initiation of an infection. I wish to emphasize that since the white mycelial fans do not appear on the root surface, merely looking at the exposed roots cannot be relied upon to discover an infection.

Based upon a better understanding of the biology of the fungus, how it spreads, and the conditions that favor its establishment, we have developed a number of measures that interfere with the infection process, significantly slow down or minimize injury to the host, or aid in keeping a plant healthy. These include the following:

**Grade changes**

As every horticultural student has been taught, plants usually respond adversely to even minor changes in grade level. The greater the change, the more likely the effects will be detrimental. There are two major reasons that this occurs. First, the additional soil depth significantly changes both soil aeration and moisture penetration and retention, resulting in feeder root dieback. The other is that portions of trunk that have developed above the soil line are physiologically more susceptible to penetration and infection by soil-borne pathogens or insects. We have seen this to be particularly true in *Armillaria*-contaminated locations, where we see an extremely active infection in the buried portion of the trunk, while deeper roots or the root collar are not significantly infected.

The solution to this problem is very simple: just refrain from changing the soil depth around existing plants and always transplant plants at or even slightly higher than their original depth, which will allow for the soil settling that usually occurs. I theorized that if the trenching technique were impractical, we could still isolate a new plant on an infected site by placing it in a protective container. This could be something as large as a commercial plastic tank or as small as a 10-gallon trash can. In each case, this would require provision for adequate soil capacity to permit development of a normal plant, provision for good drainage within the planting container, and use of healthy plants and clean planting soil. Experience indicates that the surest way to provide adequate drainage is by cutting out the container bottom. Although this procedure is not foolproof (since ultimately roots from the "containerized" plant may grow out through the bottom and come into contact with
ArborJet’s specially formulated nutritional products help trees RESIST and RECOVER from environmental stress, insect pests and disease.

- Nutra-jet
- Min-jet
- Palm-jet
- Ful-jet
- Phospho-jet
- Phospho-jet Plus
- Plus our full line of insecticides & fungicides

Join creative arborists and researchers worldwide in using the ArborJet.

Call 1-866-ARBORJT or 1-781-721-0795 or visit our web page at www.arborjet.com

The Environmentally Responsible Tree and Plant Injection System

Please circle 8 on Reader Service Card
rhizomorphs or infected roots), it does give many years of protection.

A modification of this technique is to install a physical barrier such as aluminum or plastic sheeting or concrete around the margins of a known infected area. Because rhizomorphs are normally concentrated in the top 24 inches of soil, considerable protection can be achieved by a barrier only 36 inches in depth. Although we have not yet had sufficient experience with them, there are several semi-permanent products now being marketed that can act as root barriers that should offer substantial protection when properly installed.

**Root crown examination**

The question is frequently asked why our examination for an *Armillaria* infection is conducted at the trunk base and around the root collar. There are three reasons: First is that this is the most easily and quickly accessed and visible portion of the entire root system, and less vulnerable to mechanical injury during exposure and examination. Second is that even though initial infection of a healthy plant probably occurs first on peripheral roots that would normally be the first to come into contact with rhizomorphs or diseased roots originating from an adjacent diseased or dying host, the effects of the disease are usually not visible until the fungus advances inward to the trunk or root collar zone. It is also in this area that more significant interference with the vascular transport system of the tree takes place. Third is that if we decide to attempt tree surgery to contain the spread of the infection, this is where that work will have to be performed. It is just impossible to dig up an entire tree and its root system just to examine every root for the presence of infection.

If an *Armillaria* infection is discovered, a decision must be made on what can be done, if anything, to contain or minimize its adverse effects upon the host. This decision ranges from doing nothing to taking heroic measures. Much will depend upon the value and size of the infected plant. If it is a rose bush, it will probably be much easier to take it out and replace – possibly in a buried container. If it is a 100-year-old oak in the front yard or patio, it is worth more extensive treatment. In every case, the appearance of the foliage and rate and extent of decline exhibited by the plant will need to be evaluated.

I have always been amazed at how resilient some plants have been, while others have continued to decline despite our best efforts. Obviously we cannot determine the extent of peripheral root loss (which may have occurred on any plant) or the amount of stored food supplies available in the roots, and this may be the reason some plants fail to respond while others make an apparently miraculous recovery even with considerable root collar injury.

**Tree surgery**

The purpose of performing tree surgery is to remove as much of the tissue that has been invaded by the fungus mycelium as can be accomplished, and thus slow down or completely arrest the further girdling of the trunk by the tangential advance of cambial infection. In many cases this can be done quite easily, because the mycelium has not penetrated into the underlying sapwood more than a few millimeters, while in others it may have gone all the way into the heartwood, in which case the structural safety of the tree may be of more concern than its mere survival. We have decided that in almost all cases, it is not worth pursuing the infection more deeply than a couple of millimeters below the cambium. Because the treated area has to be left open to allow air to circulate, in many cases the underlying sapwood dries out and hardens, and further invasion by the mycelium is either halted or slowed significantly. We used to paint the freshly exposed areas with tree seal, but since it prevents the underlying tissues from drying out quickly, we have abandoned its use, and only paint the exposed area with a slurry of fungicide and insecticide. After following many trees for many years, we have come to the conclusion that just allowing the tissues to dry out seems to be adequate. If wood-boring beetles attack this exposed wood, it should be painted with a registered pesticide.

**Irrigation practices**

Under natural conditions here in Southern California, *Armillaria* does not frequently appear to be a major fatal dis-

Due their unkempt appearance, California live oaks suffering from an *Armillaria* infection are often over-pruned. Such severe foliage removal weakens a tree and should not be performed.
The Wedgle™ Direct-Inject™ System:

It's right for the trees

Don't drill, Direct-Inject™!
- Minimizes wounding and protects tree wood.
- Does not damage tree vascular system.
- Injects chemical right where the tree can use it.
- Allows for retreatment year after year.
- No need to monitor tree pressure.

It's right for your company

Maximize productivity and profitability.
- Quick! Treat each tree in five minutes or less.
- Easy! No waiting for uptake, rain or shine.
- Profitable! Treat more trees in less time.
- Inexpensive! Wedgle™ Direct-Inject™ unit retails for only $475.00!

Quick and easy control

Use ArborSystems™ insecticides, fungicides and micronutrients.
- One application of Pointer™ controls Adelgids, Emerald Ash Borers, Bronze Birch Borers, and many other pests.
- Ready-to-use containers with self-sealing caps.
- Save money! Achieve control with less chemical.

See us at TCI EXPO 2003!

www.ArborSystems.com

Free!
Get the full story. Contact us for a free brochure!
ease. But once irrigated landscapes are installed in these same locations the disease flourishes. Consequently, anything that can be done to prevent the occurrence of excessive soil moisture should be considered. This ranges all the way from revising the portion of sprinkler heads to the elimination of water-demanding landside plantings. In our opinion, of all the circumstances we have observed that can be corrected or prevented, by far the two most important are avoiding grade level changes and excessive watering.

**Fertilization**

Many arborists feel that the use of additional fertilizer, particularly those high in nitrogen, will assist a distressed tree or shrub recover its foliage and vigor quickly. Although this may be a factor if some significant nutritional deficiency was responsible for the decline of the plant, there are some adverse side effects that should be acknowledged, specifically in the case of California live oaks, which are often the target of an Armillaria infection. By the time an infection is usually recognized, the host has suffered some significant decline in its foliage quality and density, i.e. in the total available leaf surface in which photosynthesis can take place. The danger in stimulating new foliage on a Californian live oak is that the resulting leaves are quite succulent and often susceptible to attack by powdery mildew, so they are a liability instead of an asset. For this reason alone, when working with live oaks we would prefer only very gradual increases in nutritional levels, and placing greater emphasis on first rebuilding a more effective root system.

**Pruning**

Another understandable reaction to the unkempt appearance of a declining canopy is to do some deadwood pruning for purely aesthetic reasons. If this is confined solely to the removal of dead branches and twigs, it should have no affect whatsoever on the host, but if it becomes too severe, it may actually divert energy into the replacement of twig growth instead of leaving it available for the production of new foliage. In the case of California live oaks, it is also likely to further stimulate the production of foliage susceptible to powdery mildew. Generally speaking, most pruning of trees suffering from an Armillaria infection can wait until the recovery of the host has been assured.

**Insects, mites and diseases**

In our work with a wide range of plants susceptible to Armillaria, we have observed that pests such as insects and mites, and diseases that result in the death of foliage such as fire blight, can be an important contributing factor in delaying or preventing the recovery of infected plants. Obviously insects such as elm leaf beetle or California oak moth, which consume foliage, or those that interfere with leaf metabolism, such as the red gum lerp psyllid or thrips and spider mites, are important factors in delaying the recovery of a plant. When they are of sufficient importance, they should be controlled by appropriate means.

**Root inoculation**

One of the most important steps to take in encouraging the recuperation of a plant injured by Armillaria, or any disease condition, is to take those actions that will assist the feeder root system of the plant to recover. Fortunately, recent advances in the field of tree root biology have identified an increasing number of beneficial living organisms, principally bacteria and mycorrhizal fungi, that contribute to the establishment and proliferation of a more effective and healthier root system. Although quantitative evaluation of the benefits of these additives is difficult to measure in the case of individual urban trees, the benefits of their application in reforestation have proved undeniable. We have applied these inoculates to many trees under our care that are recovering from Armillaria to take advantage of their obvious benefits to root regeneration. It is one of the relatively easy steps that can and should be taken if a decision to “save” an ailing plant is made.

**Mulching**

Establishment of more favorable rooting conditions and feeder root development can be influenced by the addition of organic materials, not only by their incorporation into the soil when tree or shrub recover its foliage and vigor quickly. Although this may be a factor if some significant nutritional deficiency was responsible for the decline of the plant, there are some adverse side effects that should be acknowledged, specifically in the case of California live oaks, which are often the target of an Armillaria infection. By the time an infection is usually recognized, the host has suffered some significant decline in its foliage quality and density, i.e. in the total available leaf surface in which photosynthesis can take place. The danger in stimulating new foliage on a Californian live oak is that the resulting leaves are quite succulent and often susceptible to attack by powdery mildew, so they are a liability instead of an asset. For this reason alone, when working with live oaks we would prefer only very gradual increases in nutritional levels, and placing greater emphasis on first rebuilding a more effective root system.

**Insects, mites and diseases**

In our work with a wide range of plants susceptible to Armillaria, we have observed that pests such as insects and mites, and diseases that result in the death of foliage such as fire blight, can be an important contributing factor in delaying or preventing the recovery of infected plants. Obviously insects such as elm leaf beetle or California oak moth, which consume foliage, or those that interfere with leaf metabolism, such as the red gum lerp psyllid or thrips and spider mites, are important factors in delaying the recovery of a plant. When they are of sufficient importance, they should be controlled by appropriate means.
planting, but by applying mulch to the soil surface. Although the benefits of mulching include moisture conservation and weed suppression, its most important contribution is probably due to its ability to encourage and help create a mesosphere in which root growth flourishes.

Resistant species

When planting in an area known or suspected of being infected with *Armillaria*, use of trees or shrubs known to be resistant or immune to infection should be utilized to avoid problems. An excellent list of such plants is available from your local Farm Advisor or the University of California Cooperative Extension office.

Conclusion

Success in helping a plant recover from any illness, whether it be an *Armillaria* infection or some other cause, is accomplished by developing a comprehensive program including as many of the different factors that influence plant health as can be identified in a specific case, evaluating their relative importance in that instance, and then monitoring the ef- fusiveness of corrosive measures after they are applied.

We hope that by sharing our observations and experiences working to achieve this objective in mitigating the effects of *Armillaria* we have encouraged you to adopt some of these measures in your own practice. No single factor is likely to succeed alone; it is usually a more complex problem. But it is a challenge worth facing, and we wish you success.
Who Stole My View?

Creating a win-win situation in disputes over trees and views

By Russell E. Carlson, RCA

In the northern California bayside town of Sausalito, a restaurant built into the mountainside near the waterfront was known for its breathtaking view of San Francisco. Over the years, however, a lone tree in front of the restaurant reached new heights, obstructing the view that so many restaurant patrons had enjoyed. Today, diners can see little more than the bay waters immediately below the restaurant.

The owners of the restaurant fully recognize that the loss of a dramatic view destroys one of the principal appeals of their property, however they remain frustrated about how to resolve the problem. While the tree stands directly in front of their view, they do not own the property where the tree is rooted and have not been able to negotiate a solution with the tree’s owner.

Removal of limbs on one side of the tree enhances the view of the water without destroying the tree.

Situations like these can create a standoff between those who value their views and those who value their trees. On some occasions tree care professionals are called into such disputes. Most often, this begins with a plea from a property owner who has been pressured by a neighbor to remove or radically trim trees. But in many cases, the solution is not so simple, and the situation grows more complex as exchanges between the parties become increasingly acrimonious.

While rare, it is not unheard of that frustrated “view seekers” will attempt to injure or destroy a neighbor’s tree, or even to unlawfully cut down or trim trees that they do not own. For example, a Washington state couple earlier this year agreed to pay $150,000 to the city of Bellevue for taking aesthetics into their own hands when they cut 26 trees along a city park trail. The case served as an alert to tree care pro-
Crafting a better solution

The best solution to a stalemate over trees and views is usually neither tree removal nor radical pruning, although these are frequently the two demands of view seekers in the absence of good counsel. Registered Consulting Arborists (RCA) can recommend better resolutions to these situations while serving as trusted, objective experts in arbitrating disputes. Bringing both their experience and expertise in complex tree issues, they can help sort out the difficult legal and environmental considerations, and develop a solution acceptable to all parties — often without resorting to topping or removal.

When becoming involved in a view dispute, it is worth remembering why people are so impassioned about their trees and their views. Tree owners may resist trimming or removal because they enjoy the shade and privacy their trees provide. In addition to their aesthetic benefits, particular trees may hold sentimental value for owners, especially on land that has been passed down in a family for many generations. Additionally, some property owners fear that excessive trimming may affect a tree’s ability to blossom or produce fruit.

View seekers feel just as entitled to enjoy the sight of an ocean, mountain, vineyard, city lights or some other pleasing vista, as their neighbors feel entitled to their trees. The dispute isn’t always over a view, however. A neighbor might complain that a growing canopy of tall trees blocks essential sunlight. Even the question of falling leaves can lead to altercations. And of course, there are financial stakes for both sides. Trees add to the value of a property, but so does a view of the waterfront. Disputes arising from these aesthetic, practical and monetary issues can poison relationships and lead to years of bitter wrangling.

A legal patchwork of view ordinances

While more and more cities are stepping into the fray by adopting their own view ordinances — and some even have developed their own dispute-resolution processes — it is not clear whether government involvement is
effective in resolving private disputes, or if it just intensifies them. With local ordinances differing from one jurisdiction to another, and citizens and tree preservation groups exerting increasing pressure on those involved in resolving disputes, the involvement of an expert consultant is essential to reaching a responsible solution.

The counsel of a Registered Consulting Arborist can be invaluable in establishing that tree removal is not the only solution — and that in fact such removal may be detrimental to the community and its residents. The environmentally beneficial impact of trees in controlling erosion, providing wildlife habitats and stabilizing bluffs extends to both tree owners and view seekers — and all neighbors beyond.

While tree owners confronted by neighbors threatening lawsuits and citing local view ordinances may be tempted under pressure to resort to radical pruning, tree topping is not a good option. Not only does it have the potential to create a landscape eyesore, but topping can be extremely harmful to the health of the tree, while creating a hazard by causing top-heavy growth or decay in the trunk and limbs. Unfortunately, while the risks of tree topping are well-known, the practice persists.

Enhancing views while saving trees
An RCA can prescribe a plan of corrective pruning to retain the shape of trees, while enhancing the view and protecting tree health. This alternative, known as "view pruning" or "windowing," can satisfy the wishes of both the view seeker and the tree owner. Done creatively, window pruning can open up a view while maintaining a homeowner's privacy. The owners of fruit trees are often pleased to learn that proper tree trimming may actually increase fruit production — and make picking the fruit safer and easier.

While tree and view disputes are among the most contentious issues in tree care today, selective pruning — not tree topping or removal — can prove a better solution for all. And enlisting an experienced Registered Consulting Arborist early in the process can help those in the tree care industry better serve their customers, while ensuring happier tree owners, more satisfied neighbors and healthier trees.

Sometimes you really can have your tree — and your view, too.

Russell E. Carlson, a Registered Consulting Arborist, is president of the American Society of Consulting Arborists (www.asca-consultants.org).
FREE LITERATURE
AND/OR TCI SUBSCRIPTION
Make Informed Buying Decisions

Do you wish to receive (continue to receive) your one FREE subscription to the Tree Care Industry Association (TCIA) official publication, TREE CARE INDUSTRY (TCI)?  
Yes  No

Name (PRINT)__________________________________________
Signature (REQUIRED)____________________________________
Title___________________________ Date__
Company________________________________________________
Address__________________________________________________
City__________________________ State____ Zip__________
Tel: (______) _______ Fax: (______) _______
E-mail address____________________________________________
Fax your request today to (603) 314-5386.  
November 2003 (Expires February 2004)

<table>
<thead>
<tr>
<th>BUSINESS/INDUSTRY</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>(IA) Tree Service Co.</td>
<td>(12A) Owner</td>
</tr>
<tr>
<td>(2B) Manufacturer/Distributor</td>
<td>(13B) President</td>
</tr>
<tr>
<td>(3C) Governmental Entity</td>
<td>(14C) Vice-President</td>
</tr>
<tr>
<td>(4D) Advertising Agency</td>
<td>(15D) Manager (general)</td>
</tr>
<tr>
<td>(5E) Extension Service</td>
<td>(16E) Superintendent</td>
</tr>
<tr>
<td>(6F) Hospital, Golf Course, Office/ Apartment Complex or Other Institution</td>
<td>(17F) Forester</td>
</tr>
<tr>
<td>(7G) Consulting Firm</td>
<td>(18G) Supervisor</td>
</tr>
<tr>
<td>(8H) Utility</td>
<td>(19H) Director</td>
</tr>
<tr>
<td>(9J) School/University</td>
<td>(20J) Purchasing Agent</td>
</tr>
<tr>
<td>(10K) Landscape Contractor</td>
<td>(21K) Superintendent</td>
</tr>
<tr>
<td>(11L) Other</td>
<td>(22K) Grounds Manager</td>
</tr>
</tbody>
</table>

Visit the TCIA's Web site:  
http://www.treecareindustry.org  

Substitute Today!

Free subscription offer limited to U.S.-based companies. Limit one free subscription per company. Additional subscriptions available for just $30, or $45 for non-U.S.-based companies (U.S. funds only). Please call 603-314-5380 or send payment to: Tree Care Industry, 3 Perimeter Rd, Unit 1, Manchester, NH 03103. You can also order online at www.treecareindustry.org.  

Fill out the form completely.  
Incomplete forms will not be processed.
You never know what safety hazard is lurking when you climb a tree...

That's why it's imperative to have TCI's Tailgate Safety Program. It's your company's best source for field safety training. The program has been expanded and improved. It now contains 70 sessions covering "workplace scenarios likely to cause harm".

All sessions include trainer instructions, handouts and quick comprehension tests. Tailgate reflects requirements of the ANSI Z133.1 - 2000 Standard.

• Tests satisfy OSHA verification of training requirements.
• Earn 17.5 CEU credits for ISA Arborist Certification.
• CD containing extra handouts & tests for easy printing.

Now available in Spanish also!

Phone: (603) 314-5380
1-800-733-2622
Fax: (603) 314-5386
E-mail: tcia@treecareindustry.org
Web: www.treecareindustry.org

Please circle 64 on Reader Service Card
Keeping Warm for the Winter

By Lana Robinson

The weather outside is frightful, but in the tree—well, it may not be delightful, but it can be comfortable, if you’re dressed right. Tree care professionals should keep two important concepts in mind when it comes to dressing for warmth: layering and staying dry. The environmental conditions and level of activity dictate the number of layers needed. For an arborist performing very strenuous work, a thin layer of clothing may be adequate, even in very cold weather. But when the activity slows down, additional clothing layers for both insulation and wind protection are required.

“In the morning, I let my dogs out, look at the thermometer, walk out and feel the air. Then I dress based on what I’m going to be doing that day,” says Paul Taylor, president of Arborwear LLC in Newbury, Ohio, a company that sprouted from personal experience and specializing in “gear for tree climbers, made by tree climbers.”

“It’s much easier if you’re prepared for what you may be encountering that day. I hate being cold. I’ve learned to work around it. Keeping your core warm is essential. Most of your blood is in the torso. Keep that blood warm and the heart that is pumping blood to your extremities.”

Taylor recommends wearing three or more layers of thin insulation rather than one or two thick layers of clothing.

“Tree workers are athletes. We’re climbing, pushing logs and hustling, so I dress much the same as I would if I were cross-country skiing or mountain climbing. But you’ve got to be agile,” notes Taylor. “You want to dress warm, but not bulky. The hazard, if you’re bulked up, is the balance may not be quite right. Even if you are on the ground dragging brush, feeding a chipper or loading logs, you can bulk up more. You still want freedom of movement, however, in order to get out of the way of a hunk of tree coming down to the ground.”

Three layers recommended

A good cold-weather clothing system includes three layers: 1. thin inner layer, which acts to wick moisture away from the skin, reducing evaporative heat loss; 2. middle layer, which provides the primary insulation and transfers moisture to the outer shell; 3. windproof and waterproof outer shell, made of breathable material, which offers protection from the elements while permitting moisture to escape.

“I begin with a base layer of polypropylene long underwear,” explains Taylor. “I have three different weights. Expedition...
weight, which is really heavy, is ideal for climbing on a really cold day. It’s also good if you’re going to be stationary and not working up a sweat, such as operating a crane. When the weather is not as cold, a mid-weight long underwear is great. Then if I just want to take the edge off, a lighter weight long underwear is perfect. I probably wear the midweight the most. It’s the most versatile.”

Generally, suitability of the material is determined by how well it insulates relative to how much air is trapped within the fibers. Hence, for two fabrics of the same weight, the thicker one will insulate better. Cotton retains moisture and becomes heavy and bulky when wet, so it’s not the best choice for winter wear. Polypropylene, treated polyesters and hollow polyesters, on the other hand, are ideal cold-weather fabrics. They are lightweight, repel moisture and have a wicking effect that transfers sweat away from the skin to the outermost layer of clothing, where it evaporates. Wool and wool/synthetic blends are warm, but tend to become heavy when wet. Pile and down garments, because their thickness produces excessive insulation, can cause overheating and sweating.

Taylor describes the Arborwear jacket as “like hugging a sheep all day long.” Made of 12-ounce canvas on the outside and polar fleece on the inside, the jacket features drawtabs at the waist to keep warm air in. It has lots of pockets for a cell phone, extra gloves and a neck warmer, including an inside pocket, as well as fleece-lined hand-warmer pockets behind the oversized cargo pockets.

As the wind chill temperature falls, insulation and wind protection must be increased to protect against hypothermia. The “wind-chill factor” can dramatically increase the risk of hypothermia by blowing away the pocket of warm air generated by body heat.

The danger is that as climbers work up a sweat, then slow down and get cold. Wet clothing against your skin makes you feel lethargic and can lead to hypothermia, which is quite serious. In an extreme case, a person encountering the onset of hypothermia begins to lose their mental edge.

“In this business,” notes Taylor, “that can kill you or kill somebody else. If you’re up in the tree and really cold, you’re thinking, ‘How fast can I get this done?’ Rushing a tree job is not wise. It’s best to take a break and get warm, even if you have to get in your truck. Then, go back up and do it right.”

The same clothing principle of layers and dryness applies to gloves, socks and hats, although there are some additional considerations for proper protection in cold weather. Wearing a thin liner glove protects against contact frostbite when handling metal objects.

Many climbers don’t like climbing with gloves. They prefer bare hands for grabbing the tree or rope. If it’s too cold for bare skin against the elements, some manufacturers offer various kinds of protection. Husqvarna has a basic work glove that allows for a thin glove liner underneath for really cold days. Even with two layers combined, arborists can still move their fingers and tie knots.

Taylor touts neck warmers and skullcaps. “A neck warmer keeps the wind off the back of the neck, and you can slip it up over the chin, mouth, nose and ears. If you work up too much of sweat, you can stick it into your pocket. They are cheap and work well,” he says.

A skullcap underneath the hardhat provides additional protection when it’s really cold.

Maintaining dry clothing becomes more important the longer you are exposed to cold.

Some arborists avoid working in the rain, especially when it’s cold. Others don’t have that option, especially those who live in areas like Seattle or Portland that receive a lot of rain. Again, the same theory holds for wet as well as cold weather. Wear a rain suit as an outer layer. They are not expensive, and can be kept in a duffle bag in the truck. They’re lightweight and can be thrown on quickly if it starts to rain. In addition to the rain suit, a duffle bag might include a change of clothes in case you get wet, an extra jacket, extra socks, some thermal underwear and a neck warmer.

The right gear is absolutely critical to stay warm. A few cold weather extras packed in the truck can make all the difference between a productive day and one cut short by an accident or the elements. Be prepared for weather changes.
Lined pants

Bailey's Inc., established in Laytonville, Calif. in 1975, recently started offering lined work pants. Constructed of heavy-duty denim, the pants wear just like the company's traditional jeans, but they come fully lined for cold winter mornings.

"The pants are lined with polar fleece," says Mike Wilwand, Bailey's vice president. "I've tried them and they're the most comfortable I've ever worn in the cold."

Bailey's also sells heavyweight buffalo check flannel shirts in red or green, with buttons or zippers, full cut and with an extra long tail that stays tucked to keep out the drafts. For the feet, they have heavy-duty socks, which are warm, thick, tall and comfortable. These wick-dry socks feature a combination of moisture-repelling inner yarn and moisture-attracting outer yarn. Composition: 80 percent Orlon acrylic, 10 percent cotton; and 10 percent stretch nylon. Cold weather gloves come in two styles, with an open cuff or knit cuff.

"We also sell a double palm protective chainsaw glove that is warm," says Wilwand, "and sell chaps that are full pants, with a zipper on the side. That way, you can stay warm because you don't have to take off your boots to put them on. We sell an awful lot of those in areas where weather gets down to 5 to 10 degrees. We sell a huge amount into Alaska and the New England states.

Wind protection emphasized

Sherry Belknap is national sales manager for Labonville, Inc., a manufacturer of work apparel based in Gorham, N.H.

"Our garments are specifically built for workers," says Belknap, who has been with the company for 20 years. "They're decent looking, but not made for style, like ski pants. They have oversized crotches for folks who are climbing and using machinery in deep snow. The clothes are built to take abuse. We make things warm and effective. We're located at the base of Mount Washington, so we see some of the most extreme weather in the continental U.S."

Belknap stresses wind protection as the key factor in keeping warm. "Nylon products manufactured specifically for winter weather make people feel snug as a bug in a rug. Our bibs and jackets deflect the wind, yet they are lighter weight than traditional wool coats and garments. Weight causes fatigue in climbers and ground workers. In nylon, not only are you comfortable, you're not being fatigued," says Belknap.

Some items found in Labonville's catalog include Carhartt thermal underwear and unlined denim bib overalls; Walls insulated and uninsulated bib overalls in sizes up to 3 XL and XLT sizes; Thinsulate nylon bibs in sizes up to 5 XL; arctic quilt-lined vests; flannel-lined denim and duck work pants; and Thinsulate-lined deerskin gloves (or unlined), up to 2XL sizes.

"We offer gloves with a pigskin outer shell that are Thinsulate lined. They are tremendously tough, perfect for guys who are handling wood, running a chainsaw, clearing ice damage, or removing limbs. They can put a pair on and go to work and their hands won't get wet or cold," says Belknap.

Labonville also sells poly liners for gloves and felt liners for pac boots.

"Our pac boots are built to withstand,
"I cut a lot of Locustwood which is very tough on blades. I switched to Zenith chipper blades because they have longer life and resist chipping better than the Simonds that I used to run".

Gary Erwin — Erwin Tree Care
Hobart, Indiana

"I have been very happy with Zenith blades, they are reasonably priced, with excellent quality and prompt delivery. I have used other blades, but none as good as Zenith."

Mike Hrycak — Green Mansion Tree
Syosset, New York

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Part No.</th>
<th>Knife Description &amp; Size</th>
<th>SALE Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC1000</td>
<td>KCH20109</td>
<td>Double Edge 9&quot; x 4-1/2&quot; x 5/8&quot;</td>
<td>$34.58</td>
</tr>
<tr>
<td>BC1220-BC1250</td>
<td>KCH20002</td>
<td>Single Edge 8&quot; x 3-1/2&quot; x 3/8&quot;</td>
<td>$24.68</td>
</tr>
<tr>
<td>BC1400</td>
<td>KCH20110</td>
<td>Double Edge 8&quot; x 5&quot; x 5/8&quot;</td>
<td>$35.50</td>
</tr>
<tr>
<td>BC1800-BC2000</td>
<td>KCH20103</td>
<td>Double Edge 10&quot; x 5-1/2&quot; x 5/8&quot;</td>
<td>$41.40</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Part No.</th>
<th>Knife Description &amp; Size</th>
<th>SALE Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>100, 200, 290</td>
<td>KCH10001</td>
<td>Double Edge 7-1/4&quot; x 4&quot; x 3/8&quot;</td>
<td>$21.50</td>
</tr>
<tr>
<td>10, 13, 17, 2050</td>
<td>KCH40001</td>
<td>Double Edge 10-1/2&quot; x 5&quot; x 1/2&quot;</td>
<td>$36.20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Part No.</th>
<th>Knife Description &amp; Size</th>
<th>SALE Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 90</td>
<td>KCH10002</td>
<td>Double Edge 5-3/32&quot; x 4&quot; x 3/8&quot;</td>
<td>$21.95</td>
</tr>
<tr>
<td>Model 90XP, 280XP</td>
<td>KCH10004</td>
<td>Double Edge 5-3/32&quot; x 4&quot; x 1/2&quot;</td>
<td>$22.95</td>
</tr>
<tr>
<td>Model 100XP-250XP</td>
<td>KCH10003</td>
<td>Double Edge 7-1/4&quot; x 4&quot; x 1/2&quot;</td>
<td>$25.50</td>
</tr>
<tr>
<td>Model 250XP, 254XP after '01</td>
<td>KCH10101</td>
<td>Double Edge 7-1/4&quot; x 4-1/2&quot; x 1/2&quot;</td>
<td>$26.95</td>
</tr>
<tr>
<td>Model 1890 Intimidator</td>
<td>KCH20103</td>
<td>Double Edge 10&quot; x 5-1/2&quot; x 5/8&quot;</td>
<td>$41.40</td>
</tr>
<tr>
<td>Model 1290 Drum</td>
<td>KCH30001</td>
<td>Single Edge 12&quot; x 3&quot; x 3/8&quot;</td>
<td>$20.50</td>
</tr>
<tr>
<td>Model 1690 Drum</td>
<td>KCH30002</td>
<td>Single Edge 16&quot; x 3&quot; x 3/8&quot;</td>
<td>$23.25</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Part No.</th>
<th>Knife Description &amp; Size</th>
<th>SALE Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timberwolf</td>
<td>KCH10001</td>
<td>Double Edge 7-1/4&quot; x 4&quot; x 3/8&quot;</td>
<td>$21.50</td>
</tr>
<tr>
<td>12&quot; Drum</td>
<td>KCH30001</td>
<td>Single Edge 12&quot; x 3&quot; x 3/8&quot;</td>
<td>$20.50</td>
</tr>
<tr>
<td>16&quot; Drum</td>
<td>KCH30002</td>
<td>Single Edge 16&quot; x 3&quot; x 3/8&quot;</td>
<td>$23.25</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Part No.</th>
<th>Knife Description &amp; Size</th>
<th>SALE Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drum Style</td>
<td>KCH60001</td>
<td>Double Edge 4-1/4&quot; x 2-3/8&quot; x 1/2&quot;</td>
<td>$11.50</td>
</tr>
</tbody>
</table>

*To receive this special pricing, you must use this code: 1124
All Brush Chipper Knives on sale. Call if your model is not shown.

Offer ends November 30, 2003

1-800-223-5202
www.zenithcutter.com

See Us at the TCI Expo Booth #1414

Please circle 102 on Reader Service Card
cold, cold, cold temps,” insists Belknap, explaining that the polypropylene and wool in their specialty liner excels in sub-zero temperature protection and comfort.

“We try to take care of our comrades who are out there working in the elements with their hands. It’s one thing to be out in it. It’s another thing to be warm,” says Belknap.

Tobe Sherrill, owner of Sherrill Arborist Supply in Greensboro, N.C., suggests that many times, an arborist’s best bet for finding appropriate clothing is in the local market.

“They usually carry items suitable for their particular climate,” he says. “From a mail order perspective, items range from tropical to deep winter. We tend to lean toward the averages. Certainly, chainsaw protective boots, pants and layered Kevlar chaps add a good deal of warmth.”

This year, Sherrill added a winter version of their latex-palmed “Ugly Gloves” to their product line. “We also have a neck warmer that goes around the neck and can be pulled up over the chin and face, and a hood that pulls down over the helmet,” he adds.

Karl Kuemmerling in Massillon, Ohio, offers a wool blanket-lined jacket and a blanket-lined short coat by Carhartt. You can buy an optional snap-on blanket-lined hood with a detachable face protector. The hood snaps to the collar of the overall, coat or jacket. Additionally, they sell a vest, which is a sturdy brown duck shell with white acrylic pile lining, again made by Carhartt. It features a zipper front, a 3-inch back extension flap, and two pockets. Billed as a warm, tough garment, the vest is washable. Also available are heavy-duty, long-wearing socks of 85 percent wool and 15 percent stretch nylon, with either a 12-inch or 16-inch top. Their Eskimo Glove has a thick wool-like polypropylene pile, which keep hands dry and warm. The glove’s inner liner is removable, washable and replaceable. The black colored outer shell is made of hardwearing PVC plastic which is 100 percent waterproof and windproof. The granulated surface, flexible at all temperatures, provides a good grip – even when wet.

Minneapolis-based Fresco Arborist Supplies sells Arborwear gear, including the fleece-lined coat, and will embroider company logos on them for customers. Fresco also offers chainsaw protective pants and chaps manufactured by Jonsered.

**Don’t forget your feet**

Keep your feet warm by wearing an inner sock made of polypropylene and an outer heavy woolen sock. Make sure your footwear is large enough to accommodate the extra pairs of socks. Care should be taken not to wear thick socks that may cause boots to fit too snugly and constrict blood flow. Also, even breathable footwear rarely keeps the feet dry, particularly when exercise increases foot perspiration. For a full eight-hour shift, it may be necessary to change socks during the lunch break.

If you work in cold or wet conditions for long periods of time, you may want to try Bailey’s Pak Boots. They are a full 14 inches tall, so snow and mud are not likely to crown over the top of your boot. Rubber bottoms are waterproof up to the ankle, and soft leather tops are waterproof up to the top as long as you use boot preservative. All boots have a replaceable Thinsulate liner to keep your toes toasty warm in cold climates, but breathe enough to keep your feet from cooking. Choose from either calk soles for walking on logs and ice or air bob soles for snow and mud.

Husqvarna’s Arbor Boots were added to Sherrill’s lineup in 1997. Their popularity has since exploded. Rugged and water resistant, the boots feature a polymer shield for chainsaw resistance, which also adds warmth. Karl Kuemmerling’s Husky Climber Boot is similar in composition.

West Coast Shoe Company (Wesco) is a source for Highliner boots, designed with special features for climbing, including a leather side patch, heavy steel shank, leather half-slips, steel side plate, and recessed metal heel breastplate. Coupled with warm socks or liners, the boots help keep arborists’ feet warm in the most adverse weather.

To work safely and warmly this winter, it is important to select the right clothing to maximize heat retention, minimize moisture retention from sweating, while preserving freedom of movement.

Staying warm and dry in winter as your body temperature rises and falls with the level of work effort requires careful planning. Plan for unexpected changes in weather.

Most important is heat retention in the most critical areas – head, face, hands and feet. These areas are more susceptible to frostbite. It has been calculated that 80 percent of your body’s heat loss is through your head, so follow the old saying: “If your feet are cold, put on a hat.” An additional layer under your hardhat will go a long way to keeping the rest of your body warm this winter.
ENGINEERED FROM EXPERIENCE

Petzl America has the equipment you need in your fight against gravity. Our dedication to product innovation and quality have made us a world leader in work & rescue. Call to find a Petzl dealer near you.

GRILLON
• adjustable flip line for work positioning
• rope can be released under body weight
• includes sliding lanyard protector
• available in 6, 9 and 16 foot lengths

ECRIN ROC
• strong polycarbonate shell
• easy adjustment system
• excellent ventilation
• ANSI rated

NAVAHO VARIO
• lightweight and comfortable
• easy to don with patented double back buckles
• work-positioning side D-rings
• ANSI rated

AM'D TRIACT
• triple action auto locking carabiner
• patented anti-snag Keylock system
• breaking strength = 28kN (6,295 lbf)

Petzl America (801) 926-1500 www.petzl.com

See us at TCI EXPO 2003!

Please circle 70 on Reader Service Card
HELP WANTED

Great Opportunity
Desiring expert tree technician/crew leader. Must be able to: obtain Class B CDL, prune without using spikes, operate bucket truck, work with crane operator for tree extraction. $25-$35 per hr. Call Hendron Tree Care, Inc. (757) 595-8733

Tree climbers/sales reps
Enjoy working year-round with fellow easy going skilled employees. Be financially appreciated for what you can produce while working in a Virginia ocean front community. Call (757) 425-1995.

Climber needed
would like 5 yrs exp climbing, CDL, and exp operating 15 ton crane. Top pay. Please contact (502) 326-3661.

Certified Arborist A+

P.H.C. Technicians - Southeastern Pennsylvania
Full-time employment with advancement opportunities. Formal training provided by The Bartlett Tree Research Laboratory. Experienced applicators only need apply! Excellent wage and benefits package with 401K. Drivers license required, C.D.L. preferred. Bartlett Tree Experts - Exton office. Phone (610) 594-4740; Fax: (610) 594-4743; E-mail: rdexter@bartlett.com

On top of your vegetation management needs...
• with superior equipment and personnel
• with quality that utilities demand
• with reliability into the future

For more information about vegetation management or line clearance needs,
Contact us at
1-800-943-0065

Nelson Tree Service, Inc
13477 Prospect Road, Suite 210
Strongsville, Ohio 44149
Phone: 1-440-846-6077
Fax: 1-440-846-6082
www.nelsontree.com

Please circle 59 on Reader Service Card

TREEmE CARE INDUSTRY - NOVEMBER 2003
EXPERIENCED CLIMBERS...... go out on a limb and make us an offer!

Enjoy hanging out in the trees? If so, we're the place for you! We're a national tree care company willing to pay for experienced tree climbers with a valid CDL. Extensive training and career path provided. Great benefits, pay and perks. Immediate openings available in Northern Virginia, Gaithersburg, MD and Philadelphia, PA.

"EXCLUSIVE OPPORTUNITY"

Washington, DC area's premier tree care company. Now interviewing professional Salesman/Arborist, Foreman/Climber, PHC-IPM Technician, Tree Preservation Specialist, or horticulture students with drive for experience. We serve the National Zoo, local universities, and thousands of exclusive properties. Excellent performance = Excellent compensation. RTEC TreeCare: "Anything For Trees". Fax resume to (703) 573-7475 or e-mail admin@treeestrees.com.

Mountain High Tree Service and Lawn Care, Denver, CO

Experienced tree climbers needed. Top pay, full benefits. PHC and Lawn Techs also needed. Come work for Denver’s leading arboricultural and Lawn Care Company. Please call (303) 232-0666; fax (303) 232-0711 or apply online at mhttree@pcisys.net.

Jobs in Horticulture, Inc
www.hortjobs.com
Online & In print
1-800-428-2474. Fax: 1-800-884-5198

Advanced Tree and Shrub Care Inc.
Looking for expc'd Arborist/Tech to work in North-Central Texas area. We are an established and fast growing co., in need of a highly motivated and aggressive individual. PHC knowledgeable preferred. Train with a degred consulting certified arborist. Fax resumes to (972) 569-8370, or call (214) 569-8370.

Wright Tree Service, an employee owned company, has management positions open throughout our service territory. We are looking for individuals who have line-clearing experience as a General Foreman or above to fill these positions. These individuals must be motivated self-starters who also possess excellent communication skills. Wright Tree Service is an equal opportunity employer and all applicants are required to submit to drug screening. We offer an excellent salary and benefit package. If you are interested in one of these positions, please send a brief resume to:

Wright Tree Service
Attn: Bob Myers
PO Box 1718
Des Moines, IA 50306
Or
e-mail: bmyers@wrighttre.com

Continued on page 114 ...

See us at TCI EXPO 2003!

Lowest Prices on the Market

Visit us on the Web: www.gaeq.com

G & A Equipment, Inc.
Knoxville, TN

1-800-856-8261

Please circle 35 on Reader Service Card

TREE CARE INDUSTRY - NOVEMBER 2003
Climbers/Foreman needed in CT

Growing Residential and Commercial Tree company seeks motivated, skilled career-oriented tree climbers and crew foreman. Ideal candidates will have 2-3 yrs. min. exper. in tree care/removal business. Truck driving skills and clean driving record a must (CDL preferred)! Exper. with cranes and aerial lifts a plus. Fax resumes to Jeff at (860) 693-6989, e-mail Jeff at treexpert@comcast.net, or call (860) 693-6989.


Live and work in God's country: Beautiful Long Island, New York

Devoted Arborists (2) needed for cutting edge IPM company on Long Island, New York. Successful candidate must possess ability to diagnose and treat tree problems, be thoroughly acquainted with tree species of the Northeast, have good written communication skills, and possess fastidious work habits. ISA and/or NYS DEC category 3A certification a plus. We offer a handsome salary, medical benefits, paid vacation, ongoing industry training, and encourage continuing education, including full tuition reimbursement. Owner is a hands-on, ISA certified arborist and flexible to terms of employment. Join us! For immediate consideration, e-mail resume to: sterlingtree@prodigy.net or fax to (631) 581-0580.

Inventory Data Collectors Certified Arborists/Certified TreeWorkers Tree Trimmers/Climbers Groundworkers

Positions throughout Southern California. West Coast Arborists, Inc. 2200 E. Via Burton Street Anaheim CA 92806 (714) 991-1900 or 1-800-521-3714 Fax (714) 956-3745

JOB TITLE – Inventory Data Collector JOB FUNCTION: Collection of field inventory and completion of data collection process. Provide general assistance to the Contract Administrator.

SALARY: $28,000/yr. Negotiable Depending on Experience.

OTHER COMPENSATION: Health and Dental plans, vacation, sick days, holiday pay, 401k, bonuses, bereavement leave, company vehicle provided.

WORKING HOURS: Typically, 6:00 am to 4:00 pm, Monday through Friday.

REQUIREMENTS: High level of organizational skills and computer literacy, along with basic clerical aptitude. Extensive knowledge of arboriculture, including tree species identification. Should possess or be able to obtain ISA Arborist Certification. *Must be willing to travel.*

OVERVIEW OF DUTIES: Collect inventory data. Maintain and update field inventories. Provide training and guidance to field employees on inventory process. Prepare and organize Arborist reports and management plans. Assist Contract Administrator with contracting functions. Performs other duties as required.

SUPERVISED BY: Immediate Supervisor is the Contract Administrator. Takes direction from Market Analyst and all upper management.

SUBMIT RESUME TO: Rick Gonzalez Rgonzalez@WCAINC.com or Fax to (714) 956-3745.
Ira Wickes/Arborists

Rockland County-based firm since 1929 seeks qualified individuals with experience.

Arborists/Sales Reps, Office Staff, Crew Leaders, Climbers, Spray Technicians (IPM, PCT, Lawn). Great benefits package includes 401(k) matching, advancement opportunities, E.O.E. Check us out on the Web at irawickes.com. E-mail your resume to info@irawickes.com. Fax us at (845) 354-3475 or snail mail us at Ira Wickes/Arborists, 11 McNamara Rd., Spring Valley, NY 10977.

SavATree/SavaLawn – Bedford Branch

The ideal candidate will be tough minded, possessing strong interpersonal, leadership and coaching skills and command the respect of subordinates and senior managers who are long time incumbents. The candidate must have proven ability to drive the success of a $5 to $10 million operation; have a proven track record in achieving sales and profit targets.

Skill requirements include: 8 to 10 years in the green industry with sales and operations experience. Other skills imperative to this position include: sales coaching and management; team building; budgeting; forecasting; decision-making and P&L Variance Analysis. The candidate must possess strong leadership skills, including openness to learning and development and strong people and business judgment.

Compensation package commensurate with experience and level of responsibility. E-mail resumes to N Dubak@savatree.com.

Arborist

Owen Tree Service is a well established and still growing company serving the Metro-Detroit, Flint and St Clair areas of Michigan. We are looking for 2 ISA certified arborists for sales. Successful individuals must have 3+ years of experience, proven track record, good communication and interpersonal skills. We offer competitive compensation and benefit package including 401K and health insurance, company phone and vehicle provided for sales and transportation to work, friendly work environment and more. Contact A. Tanovic at atanovic@owentree.com; Fax (810) 724-2684; Phone 1-800-724-6680.

Climbing Arborist

Qualified and experienced climbing arborists required for company based south of England – accommodation can be provided for single applicants please telephone 01273 480727 e-mail: Richard.green6@virgin.net

Immediate opening for climber/foreman, 5 years experience is required, including trimming, technical rigging and removals. Must have driver's license, CDL preferred. $15-$20 per hour starting wage depending on experience. Paid holidays and vacation, medical. Call (302) 629-4655.

Continued on page 116...
TCI Magazine & NAA Website
Classified Rate Card

<table>
<thead>
<tr>
<th>TCI Magazine Only</th>
<th>Website Only</th>
<th>Website Only + Photo</th>
<th>TCI Magazine &amp; Website</th>
<th>TCI Website &amp; Photo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Members</td>
<td>$55</td>
<td>$65</td>
<td>$65</td>
<td>$75</td>
</tr>
<tr>
<td>Non-Members</td>
<td>$65</td>
<td>$65</td>
<td>$75</td>
<td>$85</td>
</tr>
</tbody>
</table>

Ads running for six consecutive months receive $5/month discount.
Pricing based on 250 characters per pricing unit.

Want a Challenging Career with High Income Potential?

Join Bartlett Tree Experts, the tree care industry leader.
You will experience unlimited growth potential, the use of cutting edge technology, an excellent benefits package with a 401K, medical and dental plan, flexible spending accounts, lucrative compensation package.

The F. A. BARTLETT TREE EXPERT COMPANY
EQUAL OPPORTUNITY EMPLOYER

Corporate Office: Post Office Box 3067, Stamford, Connecticut 06905
Phone (203) 323-1131 • Fax (203) 323-3631 • www.bartlett.com

Contact: Carmen Berrios, Manager Employment & Benefits
cberrios@bartlett.com

UNITED STATES | CANADA | IRELAND | GREAT BRITAIN

VERSADYNE

• 85 hp Cummins
• Lift to 3,000 lbs.
• Easy to operate
• Easy to maintain
*Optional all-weather cab
*Optional 40 gpm aux. hydraulics

DEALERS WANTED

The loader of choice for surface-sensitive work

SWINGER 2000
• The value leader
• Easy to operate
• Easy to maintain
• Optional 22 gpm aux. hydraulics

800-656-6867
Save time, surface, and money

Exciting Career Opportunities for Service Industry Managers

Come join one of the largest Vegetation Management Companies in North America, DeAngelo Brothers, Inc., experiencing tremendous growth throughout the United States and Canada creating the following openings:

Division Managers
Branch Managers

We have immediate openings in the U.S.:
MO, GA, FL

We have immediate openings in Various Provinces in Canada:
British Columbia, Alberta, & Saskatchewan

Responsible for managing day to day operations, including the supervision of field personnel. Business/Horticultural degree desired with a minimum of 2 years experience working in the green industry. Qualified applicants must have proven leadership abilities, strong customer relations and interpersonal skills. We offer an excellent salary, bonus and benefits package, including 401(k) and company paid medical coverage.

For career opportunity and confidential consideration, send or fax resume, including geographic preferences and willingness to relocate to: DeAngelo Brothers, Inc., Attention: Paul D. DeAngelo, 100 North Conahan Drive, Hazzelton, PA 18201. Phone 1-800-360-9333. Fax: (570) 459-2690. EOE/AAP M/F/D/DV

HAWAII - Tree Climbers and Working Foremen.

Climbers MUST have a minimum of 5 years' climbing experience (which includes pruning, shaping, rigging, take downs and removals) and a current driver's license (a CDL license is preferred). Foreman applicants MUST be a certified arborist (with knowledge of disease diagnosis and fertilization), have a minimum of 5 years' climbing experience (which includes pruning, shaping, rigging, take-downs and removals), 5 years' utility line clearance experience, experience working with cranes, and have a current driver's license (a CDL license is preferred). Pay starts at $18 per hour but is based on experience. Benefits include paid medical and dental insurance, paid federal holidays, vacation pay, 401(k) pension plan and a profit-sharing plan. Send resume with salary history and employment references to:

Jacunski's Complete Tree Service, Inc.
P0 Box 4513, Hilo, HI 96720
Phone: (808) 959-5668
Fax: (808) 959-0597

Please circle 87 on Reader Service Card
Urgently Wanted for The Island of Bermuda

Arborists

Bermuda's largest landscape management company requires several arborists to join their dynamic team. Applicants must have an arborist certificate and be very competent in dealing with hazardous and problem trees. These are hands-on positions with extensive physical activity.

Applicants must be willing to relocate right away. A minimum of a one-year contract will be offered with preference to individuals who wish to stay longer and train Bermudians. We offer an excellent salary and other benefits. We will assist with relocation costs and housing initially.

Please send resumes with salary history to:
Jefferson C. Sousa, President
Sousa's Landscape Management Co. Ltd
PO Box PG 130
Paget PG BX
Bermuda
Tel: (441) 238-1797
Fax: (441) 238-3507
E-mail: jeffersonsousa@hotmail.com

SavATree/SavaLawn, a nationally recognized provider of arboricultural services in the Northeast with 15 branches from MA to VA, is searching for experienced arborists with strong interpersonal skills to manage premier territories in Larchmont and South Hampton, NY and Wyckoff, NJ. The ideal candidate will possess an ISA certified license and have 2-4 years of tree care sales experience. Excellent Benefits. Call or e-mail Noel Dubak at (914) 241-4999, x153 or ndubak@savatree.com

Do You Have What It Takes...

...to be a part of Atlanta's leading tree care company? We are searching for experienced tree climbers and crew leaders to help our successful team stay on top. Year-round work, relocation assistance, excellent compensation and benefits package. Driver's license required. CDL preferred. Drug Free Workplace. Submit resume to Chris Nasca at:

Arborguard
P.O. Box 477
Avondale Estates, GA 30002
Phone: 404-299-5555
Fax: 404-294-0090
E-mail: cnasca@arborguard.com
Web: www.arborguard.com

Inside Sales/Customer Svc

Orange County, Calif. Firm has opening for Inside Sales & Customer Svc. Professional experienced in arborist equip. & supplies. We are an established 30 year old mfg./distributor, selling nationally to many industries and ISO Certified. Please send resume including salary history to: U.S. Rigging Supply, 4001 W. Carriage Dr. Santa Ana, CA 92704
Attn: Doug Heim. Fax: (714) 918-2222
doug@usrigging.com, www.usrigging.com

Lawn applicator needed for lawn care company on Long Island, N.Y. Position can lead to management for the right candidate within 6 months - excellent opportunity! Applicants should have minimum of 3 years experience and possess New York State DEC category 3A card or ability to receive one immediately. Excellent salary and medical benefits, paid vacation, friendly work environment, top-notch equipment and great office support. Fax resume to (631) 581-2622.

Continued on page 118...

Lewis Utility Truck Sales, Inc. 628 North Portland St., Ridgeville, IN 47380

- Hours: Mon.-Fri. 8-5; Sat., by appt. only
- Call: 1-800-856-2064 Fax: (765) 857-2225
- www.Lewisutilitytrucks.net E-Mail: Lewisutility@jayco.net
- Airport Pickup - Delivery Available - Finance Companies Available
- Affordable Pricing for Everyone - D.O.T. - Cert. Dielectric Testing

Trucks to Work With, Not On

NEW 2003 & 2002 GMC & Int'l XH 60/70-foot Hi-Ranger Terex Telelect.
NEW 2003 & 2002 GMC & International XH 55' Hi-Ranger Terex Telelect. 60' w.h.
NEW 2003 & 2002 GMC & International XT 75' Hi-Ranger Terex Telelect. 60' w.h.
NEW '92-99 GMC & Int'l, gas and diesel, LR3 Altec. 60' w.h.
87' - 91' Aerial Lift of Conn starting at $18,000 to $22,000

A Great Team

SavATree employees share a devotion to quality tree care and a commitment to community service. The sense of pride and teamwork created every day is a resource for continued growth & success.

Now operating in NY, NJ, CT, MA, PA and VA, we are looking for experienced arboricultural & horticultural professionals who are ready to join a great tree and shrub care team.

SavATree/SavaLawn, a nationally recognized provider of arboricultural services in the Northeast with 15 branches from MA to VA, is searching for experienced arborists with strong interpersonal skills to manage premier territories in Larchmont and South Hampton, NY and Wyckoff, NJ. The ideal candidate will possess an ISA certified license and have 2-4 years of tree care sales experience. Excellent Benefits. Call or e-mail Noel Dubak at (914) 241-4999, x153 or ndubak@savatree.com

Do You Have What It Takes...

...to be a part of Atlanta's leading tree care company? We are searching for experienced tree climbers and crew leaders to help our successful team stay on top. Year-round work, relocation assistance, excellent compensation and benefits package. Driver's license required. CDL preferred. Drug Free Workplace. Submit resume to Chris Nasca at:

Arborguard
P.O. Box 477
Avondale Estates, GA 30002
Phone: 404-299-5555
Fax: 404-294-0090
E-mail: cnasca@arborguard.com
Web: www.arborguard.com

A Great Team

SavATree employees share a devotion to quality tree care and a commitment to community service. The sense of pride and teamwork created every day is a resource for continued growth & success.

Now operating in NY, NJ, CT, MA, PA and VA, we are looking for experienced arboricultural & horticultural professionals who are ready to join a great tree and shrub care team.

SavATree/SavaLawn, a nationally recognized provider of arboricultural services in the Northeast with 15 branches from MA to VA, is searching for experienced arborists with strong interpersonal skills to manage premier territories in Larchmont and South Hampton, NY and Wyckoff, NJ. The ideal candidate will possess an ISA certified license and have 2-4 years of tree care sales experience. Excellent Benefits. Call or e-mail Noel Dubak at (914) 241-4999, x153 or ndubak@savatree.com

Do You Have What It Takes...

...to be a part of Atlanta's leading tree care company? We are searching for experienced tree climbers and crew leaders to help our successful team stay on top. Year-round work, relocation assistance, excellent compensation and benefits package. Driver's license required. CDL preferred. Drug Free Workplace. Submit resume to Chris Nasca at:

Arborguard
P.O. Box 477
Avondale Estates, GA 30002
Phone: 404-299-5555
Fax: 404-294-0090
E-mail: cnasca@arborguard.com
Web: www.arborguard.com

A Great Team

SavATree employees share a devotion to quality tree care and a commitment to community service. The sense of pride and teamwork created every day is a resource for continued growth & success.

Now operating in NY, NJ, CT, MA, PA and VA, we are looking for experienced arboricultural & horticultural professionals who are ready to join a great tree and shrub care team.

SavATree/SavaLawn, a nationally recognized provider of arboricultural services in the Northeast with 15 branches from MA to VA, is searching for experienced arborists with strong interpersonal skills to manage premier territories in Larchmont and South Hampton, NY and Wyckoff, NJ. The ideal candidate will possess an ISA certified license and have 2-4 years of tree care sales experience. Excellent Benefits. Call or e-mail Noel Dubak at (914) 241-4999, x153 or ndubak@savatree.com

Do You Have What It Takes...

...to be a part of Atlanta's leading tree care company? We are searching for experienced tree climbers and crew leaders to help our successful team stay on top. Year-round work, relocation assistance, excellent compensation and benefits package. Driver's license required. CDL preferred. Drug Free Workplace. Submit resume to Chris Nasca at:

Arborguard
P.O. Box 477
Avondale Estates, GA 30002
Phone: 404-299-5555
Fax: 404-294-0090
E-mail: cnasca@arborguard.com
Web: www.arborguard.com

A Great Team

SavATree employees share a devotion to quality tree care and a commitment to community service. The sense of pride and teamwork created every day is a resource for continued growth & success.

Now operating in NY, NJ, CT, MA, PA and VA, we are looking for experienced arboricultural & horticultural professionals who are ready to join a great tree and shrub care team.

SavATree/SavaLawn, a nationally recognized provider of arboricultural services in the Northeast with 15 branches from MA to VA, is searching for experienced arborists with strong interpersonal skills to manage premier territories in Larchmont and South Hampton, NY and Wyckoff, NJ. The ideal candidate will possess an ISA certified license and have 2-4 years of tree care sales experience. Excellent Benefits. Call or e-mail Noel Dubak at (914) 241-4999, x153 or ndubak@savatree.com

Do You Have What It Takes...

...to be a part of Atlanta's leading tree care company? We are searching for experienced tree climbers and crew leaders to help our successful team stay on top. Year-round work, relocation assistance, excellent compensation and benefits package. Driver's license required. CDL preferred. Drug Free Workplace. Submit resume to Chris Nasca at:

Arborguard
P.O. Box 477
Avondale Estates, GA 30002
Phone: 404-299-5555
Fax: 404-294-0090
E-mail: cnasca@arborguard.com
Web: www.arborguard.com

A Great Team

SavATree employees share a devotion to quality tree care and a commitment to community service. The sense of pride and teamwork created every day is a resource for continued growth & success.

Now operating in NY, NJ, CT, MA, PA and VA, we are looking for experienced arboricultural & horticultural professionals who are ready to join a great tree and shrub care team.

SavATree/SavaLawn, a nationally recognized provider of arboricultural services in the Northeast with 15 branches from MA to VA, is searching for experienced arborists with strong interpersonal skills to manage premier territories in Larchmont and South Hampton, NY and Wyckoff, NJ. The ideal candidate will possess an ISA certified license and have 2-4 years of tree care sales experience. Excellent Benefits. Call or e-mail Noel Dubak at (914) 241-4999, x153 or ndubak@savatree.com

Do You Have What It Takes...

...to be a part of Atlanta's leading tree care company? We are searching for experienced tree climbers and crew leaders to help our successful team stay on top. Year-round work, relocation assistance, excellent compensation and benefits package. Driver's license required. CDL preferred. Drug Free Workplace. Submit resume to Chris Nasca at:

Arborguard
P.O. Box 477
Avondale Estates, GA 30002
Phone: 404-299-5555
Fax: 404-294-0090
E-mail: cnasca@arborguard.com
Web: www.arborguard.com
We are seeking a well organized individual with a strong personality for our Sales Manager position. Individual will help set goals, implement and monitor systems of accountability, encourage, coach and supervise the activities of existing sales staff. Responsibilities also include interviewing, hiring and training additional sales staff. Normal Monday-Friday work week. Income potential $75,000-$100,000 in first year. Benefits include paid vacation, pension, medical. Call Jeanne at McFarland Arborist, 215-438-3970; fax resume to 215-438-1879 or e-mail to mcfarland@onrampcom.com.

PHC-IPM Technician – must have NYS Spray Applicator’s license and clean driving record. $22/hr to start with minimum 3 yrs experience. We offer full administrative and field support and continuing education classes. Benefits include health insurance, paid vacation, holidays, personal and sick days. Located on the East End of Long Island, NY. Will help relocate. Send resume with employment history and references to: Ray Smith & Associates PO Box 5024, Southampton, NY 11969 or e-mail direct to rsatree@optonline.net (631) 287-6100.

Utility Line Clearance Manager

25-year-old progressive company, specializing in Utility Line Clearance in Mid-South seeks regional manager responsible for managing day-to-day operations, including field supervisors and personnel; must have minimum of 10 years proven experience in “upper level management” in the industry. Bachelors’ degree preferred. Please forward your confidential resume and salary requirements to the following: Manager, PO Box 17905, North Little Rock, AR. 72117 or E-mail to: Treeservice@Alltel.net.

SavATree, the Northeast’s premier tree, shrub and lawn care company, is seeking an Operations Manager to manage all aspects of field operations and customer service for our Southampton, NY branch. The successful candidate will have 5+ years experience and be an accomplished climber with knowledge of Plant Health Care and IPM. BS in Forestry, Plant Science or Horticulture and ISA certified Arborist status a plus but not required. Salary and bonus commensurate with experience. Complete benefit package. Send resume: ndubak@savatree.com or fax (914) 242-3934.

Climbers/Foreman needed in MN

We are looking for reliable, career-seeking climbers/crew leaders with 2 years minimum climbing experience and to supervise 2 to 3 crew members. Must have or be willing to obtain CDL. $16-$20 per hour depending on experience. Medical, dental, paid vacation, retirement plan, profit-sharing, and holidays. Call Pleasant View Tree Service – Aric March, Stillwater, MN. (651) 430-0316.

Sage Landscaping & Tree Service Inc. in Central/Northern NJ has opportunities in the following areas.

Tree Division Manager

To manager day-to-day operations, supervise field personnel, outside sales, scheduling & team building. Resp. for maximizing customer satisfaction, revenue, growth and profitability thru effective mgmt and coordination of cust. service, employee training and development, and equip & facility resources. Certified arborist and NJ pesticide license a plus. Min. 5 yrs exp in mgmt and proven abilities to run a tree care division.

Tree Climber/Foreman

Looking for experienced only tree climber/foreman, possess excellent pruning skills and removal/rigging abilities, driver license required, CDL preferred.

Plant Health Care Technician – IPM Tech

Must have plant and insect/disease identification knowledge, drivers license required, CDL preferred. Certified applicator or operator in NJ required. We offer competitive pay and benefits. Please fax resume to (908) 668-7575 or call Ed (908) 413-0574

EQUIPMENT FOR SALE


2000 Brush Bandit 1850XP

250HP John Deere. Includes loader, joystick controls & autofeed. Perfect for removals & light clearing work. Outstanding condition with only 536 hours! $64,900. Alexander Equipment Co. 4728 Yender Ave., Lisle, IL 60532. Call Steve or Matt at 630/663-1400.
A Great Combination!

See us at TCI EXPO 2003!

2004 International chassis & a 14' Schodorf forestry body Starting at $41,950
Let us build a body to suit you

Schodorf

2003 F-550
Used
Call for details save $$$

Building quality forestry bodies for over 65 years.
Call Mike Cassidy for a brochure and a quote 1-800-288-0992.

Continued on page 120 ...

John Bean, FMC, 1000 gal SS. tank w/H60 pump, 60 GPM powered by Chrysler industrial 6 cyl gas engine, ready to work, $6000 OBO. Contact Jim (609) 261-9400 or info@delawarevalleysprayservice.com

Bucket Truck
1988 Ford 454 gas bucket truck w/57' Hi-Ranger lift, 10 yd dumping chip box & tool boxes. $12,000. Call (970) 565-6700, arborist@frontier.net

Ropes, Ropes, Ropes
All types and brands of professional climbing and lowering arborist ropes at warehouse prices. Call for current price list. Free shipping. Visa, MC, AX. Small Ad - Big Savings 1-800-873-3203.


"Truck cabs for sale" – In crates, F-700 gas & diesel, auto & manual. Complete, $1850 or shells w/o doors $650. Have others. Plus we dismantle medium & heavy trucks for parts. View at fronertuckparts.com or call (866) 241-2110.

15 Used Professional Spray Trucks
Totally equipped, excellent condition! Also Tuflex tanks, beds, fert boxes, hose reels, more. REDUCED MUST SELL! www.getgreenthumb.com/trucks.html or call Russell (214) 733-8700, Dallas, TX

1988 Intl' DT 466 Bucket Truck, 87k miles with a LR-50 Asplundh, built in 12" chipper and aluminium dump box. Excellent condition, $23,000. Kingston Ont. (613) 453-1112 or lucvali@hotmail.com

Factory Reconditioned & Reworked Equipment from the leaders of chippers & waste reduction equipment.
Hand-fed chippers – whole tree chippers – stump grinders – horizontal grinders (models from all major manufacturers) more than 100 units to choose from. For our selection visit: www.banditchippers.com or call us at Bandit Industries, Inc., Remus, MI 49304. Ph: 1-800-952-0178 or (989) 561-2270.

What's THE DAVEY DIFFERENCE?
It's Davey people that make the difference and Davey can make a difference in your career.
You'll be part of a growing team of certified arborists, technicians, botanists, agronomists and horticulture scientists in a company that offers over 120 years of tree care history and knowledge.
Positions with training, benefits, and advancement opportunities are now available throughout the United States and Canada.
Eastern, Mid-Atlantic & Southeastern States
Call Brian Tarbert 800-531-3936 brian.tarbert@davey.com
Great Lakes, Central, Southwest & Western States
Call Mark Noark 800-445-8733 mark.noark@davey.com
Canadian Operations
Call Gordon Ober 800-445-8733 gordon.ober@davey.com
Or Visit: www.davey.com

Davey
EOE/DFW

Please circle 81 on Reader Service Card

Please circle 26 on Reader Service Card
Tree Care Equipment For Sale

**Bucket Trucks**

All trucks are currently working & DOT inspected. Reason for selling - bought new trucks.

**Stump cutters**
Vermeer Model 630 Stump Cutter w/rebuilt engine, less than 10 hrs. and new teeth. Vermeer Model 1560 Stump cutter w/65 hp Wisconsin engine, Good condition. For more information, call 1-800-427-4890.

**Rayco & Vermeer**
Stump cutter remanufacturing
Retip your Rayco Super Tooth for only - $3.95
Rebuild & Retip your Rayco Super Tooth - $5.95
Retip your Vermeer Pro-Tooth for only - $2.75
Free return shipping on orders over 100.
Toll Free 1-888-999-1778
See what we do at www.stumpcutterking.com.
We buy used Rayco & Vermeer Cutters.

**Hydraulic knuckle boom trucks** with dump flatbeds, Ford, International, 1988 to 1991, single axle, CDL or non-CDL. We can custom design and build sides, tailgates, chip boxes or continuous-rotation grapples. Call us for any specialty truck needs. Atlantic Fabricating, Inc., Jack or Paul, Sayreville, N.J. (732) 938-5779. www.atlanticboom.com

**Hardware and software by an arborist**
For more information about the industry's best-selling package, call or write Arbor Computer Systems, PO Box 548, Westport, CT 06881-0548. Phone: (203) 226-4335; Web site: www.arborcomputer.com; E-mail: Phannan@arborcomputer.com

**Alexander Equipment Company**
We have a huge selection of used chippers, stump grinders & tub grinders! Call Matt or Steve for details or try our Web site at www.alexequip.com for complete list & pictures. Financing available! We can ship anywhere!

4728 Yender Ave.
Lisle, IL 60532
(630) 663-1400

John Bean sprayer 600 gal./80 gal. per min. Complete, $4,500. (845) 477-2104.

**PRODUCTS & SERVICES**

**Fiorapersonnel, Inc.** In our second decade of performing confidential key employee searches for the arboriculture industry and allied trades worldwide. Retained basis only. Candidate contact welcome, confidential and always free. Florapersonnel, Inc. 1740 Lake Markham Rd., Sanford, FL 32771 Phone: (407) 320-8177. Fax: (407) 320-8083. Website: www.fiorapersonnel.com. Email: hortsearch@aol.com.

**ArborSoftWorx** is a specialized, feature rich suite of software products for Commercial and Municipal/Campus Arborists, Landscapers and Lawn Care specialists. ArborSoftWorx enhances the productivity of your sales force, work crews and administrative staff, while facilitating the growth of your business and increasing your company's profitability. Built by Award Winning Software Engineers, proudly serving our customers throughout the U.S.A., Canada and Europe since 1983. Call 1-800-49-ARBOR today, or visit us at: www.ArborSoftWorx.com

**Allied Equipment of Wisconsin**
Local rentals, bucket trucks to 70 feet, stump grinders, chippers, aerial lift parts & service. Rayco parts, Rayco & Wood/Chuck dealer. We rent Rayco Hydra stumpers/Forestry mowers. www.alliedutilityequipment.com. Call 1-800-303-0269.


**BUSINESSES FOR SALE**

**Green Waste Recycling Facility**
Near Houston. Equip. includes Morbark 1200 Tub Grinder, Morbark 975 Waste Recycler, Dozer, Front-end loader, Trucks, Chippers, Tractors and other equip. Established Tree Service, Land Clearing and Recycling operation with 15 yrs clientele. 1 million annual sales. Many commercial acccts. 30-acre tract in Brazoria County asking 1.5 million dollars. O (281) 482-3511 F (281) 648-3850 Web: www.friendswoodfirewoodco.com E-mail: bradymora@friendswoodfirewoodco.com

Full service tree company for sale by owner on the gulf coast. Includes: LR50 bucket truck, Ford F600 chipper truck, Vermeer 665 stump grinder, Vermeer 1230 turbo diesel chipper, 763 Bobcat (400 hrs worked) w/ trailer, and Ford F600 dump truck. Priced right at $230,000. Call (251) 653-6700 or (251) 479-0944.

**Tree service in Santa Cruz Co. CA for sale.** Est. 14 years with a wide client base. Excellent reputation and experienced/qualified staff, $70,000. Call Nigel Belton. Arbor Art Tree Service. (831) 688-1239.

**Live, work, and play on the beautiful Oregon coast in Coos Bay.** Hunting, fishing, hiking, camping, whitewater raft the wild Rogue river. World class windsurfing, sea kayaking, whale and bird watching. Golf eight local courses including world famous Bandon Dunes. Visit the Mill casino, old town fishing villages and Shore Acres State Park. Ride the Oregon Dunes (10,000 acres) on your horse or ATV. Established tree trimming and landscape business with bucket truck, chip truck, chipper and all tools. $75,000. 541-888-6596.

**www.treecareindustry.org**
**VISIT OFTEN!**

Tree Care Industry Association...
"The Voice of Tree Care"
Are your workers FULLY trained in electrical hazard awareness? Address this problem with the latest edition of the Electrical Hazards Awareness Program (EHAP) from TCIA, the Tree Care Industry Association.

EHAP is the cost-effective way to provide your employees with the critical knowledge and training they need to prevent electrical accidents. Meet OSHA safety requirements with EHAP.

The EHAP program is available in English and Spanish. The program combines written information, video training and hands-on training to reinforce important objectives.

Order this essential training program today.
Phone: (603) 314-5380, 1-800-733-2622
Fax: (603) 314-5386
E-mail: tcia@treecareindustry.org
Web: www.treecareindustry.org

Electrical safety is in the grasp of your hand!
TCIA recently had a remarkable opportunity to be part of a press conference announcing landmark legislation that could have a long-term benefit for our members. In surveying tree care company owners for last year's strategic planning process, a qualified work force was one of the top five concerns for the future. Immigration law has been an obstacle for us to easily and affordably have access to employees and to enhance our workforce as needed on a seasonal basis. After 9/11 and legislation on Homeland Security, immigration reform was set back a good two years.

Thanks to the hard work of Craig Regelbrugge on the American Nursery & Landscape Association, an unheard of bipartisan proposal to reform immigration law was introduced. This law is sponsored by Republican Senator Larry Craig and Democratic Senator Edward Kennedy - a feat in and of itself.

The proposal provides a one-time adjustment for employees in agriculture - about 500,000 people - to come up from underground and get legal. If those workers then continue to work another 300+ days in agriculture during the next 3 to 6 years, the proposal allows them to work in other professions of their choosing. This is an opportunity for us to have significant, legal access to entry-level employees for our industry.

Even more importantly, both parties, along with endorsements from the AFL-CIO and the American Farm Workers - are cooperatively working on immigration reform. They acknowledged that H2-A was broken and that this is only Step 1. H2-B, which is of more interest to TCIA members, will be on the list for reasonable and considerable reform in the near future.

The reason our industry should support this legislation was the critical need for a workforce in commercial tree care.

All of this came about at ANLA's bi-annual Legislative Conference - a grassroots, member-driven activity that has members flying in from all over the country to take part in the legislative process that affects their daily business lives. Do they make a difference? You bet. Why? Because when a Congressional leader hears the same thing from a number of business people back home who influence whether or not they get reelected and receive campaign contributions, they're going to listen.

The day is not far away when TCIA needs to be running its own Legislative Conference and having its own political action committee so that your interests are well known and your voice is heard.

We're on the way!
Dealing with an OSHA Inspection

If OSHA shows up at your office, what should you do?

1. Ask to see the Officer’s ID and make a photocopy – it should be a photo ID on one side and the U.S. Dept. of Labor emblem on the reverse.

2. Call the local OSHA office to verify that the inspector should be at your office. (Federal OSHA: 1-800-321-OHSA (6742)

3. Ask the Inspector why he is inspecting your workplace:
   a) Complaint. If due to a complaint you are allowed to know if the person is a current employee, although you will not be given his/her name and under no circumstances should you try to find it out;
   b) Programmed visit/special emphasis;
   c) Fatality or accident follow-up;
   d) Imminent danger investigation;

4. Ask for some time to notify and assemble your “OSHA team” who should review all requests for documents and information as well as review all documents and information given to the inspector. You should have designated who will accompany the inspector and notify company officials and legal counsel of the visit. (You have an hour to call everyone you need to - but don’t keep the Inspector waiting for an unreasonable amount of time. If he has to wait, make sure it is in a place that is out of high-activity areas.)

5. The “OSHA Team” must include employer and employee representatives, and should include your safety coordinator.

The opening conference
1. During this conference, the Inspector will explain the purpose of the visit.
2. Ask for a copy of the complaint (if any).
3. Ask about the nature of the inspection: is it wall-to-wall, is it limited to a specific complaint.
4. The inspector may at this time want to review your OSHA 300 log (a requirement if you have 10 or more employees). You have 40 minutes to provide this information.

The inspection
1. Do not let the Inspector walk around by himself. Always be sure to accompany him.
2. Take the Inspector by the most direct route to the area of interest.

3. The Inspector must cite any violations observed while at the workplace. If possible, try to fix any violations while the Inspector is still on site.

4. Do not voluntarily involve areas of the facility not specifically included in the inspection.

5. Keep thorough notes. Write down everything that is said by the inspector and all responses given to the inspector.

6. Management should cooperate with the inspector and answer all questions – maintain professionalism and cooperation throughout the entire process.

7. Do not volunteer information beyond what is requested - also do not embellish and NEVER lie.

8. If the inspector takes pictures, take the same pictures, but try to show no more of the background than is absolutely necessary – a citation can be issued if a violation is seen in a picture.

9. The inspector is allowed to use a video camera.

10. Employees may be interviewed regarding safety and health issues. Employees have the right to say whether they want the interviews to be private or if they want management representatives present.

11. If you think the Inspector is trying to expand the inspection beyond what was discussed in the opening conference, you can request another opening conference to discuss the scope of the expansion.

12. You may request a warrant for the entire inspection or any additional areas or documents that the Inspector may want to see. This might make things worse in the end, however, and is NOT advisable.

The closing conference
1) Request that a closing conference be given if the Inspector does not offer one.
2) During this conference the Inspector will describe any apparent violation identified. Penalties will not be addressed at this time.

Posting requirements
1. OSHA poster (included in the 5 in 1 poster available from TCIA)
2. Copies of any OSHA citations until fixed or resolved with OSHA
3. OSHA 300 log – If you have 10 or more employees, post the yearly log (the one without names) during the February of the following year; i.e., 2003’s needs to be posted during Feb. 2004.

Records that may be requested
1. OSHA 300 log (You should definitely be able to provide the most current, but you should also have the yearly 300 log for the last five years on file and ready to provide)
2. Written Hazard Communication policy
3. Written Personal Protective Equipment policy

SavATree’s arborists are going to London!

Where are you going?
SavATree’s top arborists, along with their spouses, are flying to London for five days of sightseeing and camaraderie. Last year we went to Rome. Next year we might go to Paris. Do you want to join us?

SavATree.
The Tree and Shrub Care Company

TCI Booth #2004
You can also fax or email your resume to 914-242-3934 / careers@savatree.com
www.savatree.com

Please circle 80 on Reader Service Card
Davey acquisitions continue

The Davey Tree Expert Company continues to expand its commercial grounds management division with the acquisition of Top Gun Landscape, Inc. of Tampa, Fla. This is Davey’s twelfth acquisition in the past 18 months.

“When it comes to acquisitions, our primary objective has always been to find a company that fits Davey’s strategic goals,” said Karl Warnke, president and COO of Davey. The acquisition joins Davey’s existing Tampa operations with the staff of Top Gun, including founder Ed Bernard. Former Top Gun clients will be served by Davey’s Tampa commercial division office, which is headed by Joe Kitchie. In the past 18 months, Davey has made the following acquisitions as part of its ongoing growth strategy:

- Action Tree Expert Co., Naples, Fla
- Boulder Tree and Landscape Co., Boulder, Colo.
- Charette Tree Service, Boston, Mass.
- Denver Tree Specialists, Denver, Colo.
- Horrigan Tree Industries, Inc., Chicago, IL.

Bartlett expands in Southeast

Bartlett Tree Experts recently announced that it has acquired the business operations of Historic Tree Preservation Company as a means of growing its business in the southeastern part of the country. Historic Tree has served customers in Charleston, Hilton Head and Savannah since 1994. The two owners of Historic Tree, Gren Winthrop and Chris Gerards, and their staff of 28 will remain with Bartlett. Bartlett currently has offices in 27 states, Canada, Ireland and the UK.

SavATree recognized by Liberty Mutual for safety

SavATree and its employees received a commendation from the Liberty Mutual Group for an exceptional performance with regard to safety for the period of March 2002 through February 2003. This recognition comes with the announcement of a 27 percent reduction in accidents and a 26 percent reduction in work days lost because of injury.

“Winning this award demonstrates SavATree’s commitment to safety as a top priority,” states company President Daniel van Starrenburg, who credits an improved safety program. “Over the past four years we’ve increased overall safety awareness by intensifying our training programs and continually providing the knowledge and equipment necessary to work safely.”

The safety program includes an intricate reporting system, mandatory weekly meetings, driver qualification, and a self-directed advancement component that allows employees to inherit additional responsibility at their own pace. “We developed an initiative with multiple components that is enthusiastically embraced by our employees and allows us to focus on loss prevention efforts with increased efficiency,” explains Safety & Training Director Dane Buell.

Trouble finding employees? Your association can help!

Available to members only, TCIA has teamed up with one of the industry’s leading providers of foreign workers to save you money and contribute to the tree care profession.

The pool of available green card workers gets smaller each year. That’s why TCIA has partnered with Amigos Labor Solutions, Inc., the industry experts in hiring workers from Mexico under the H-2B program. Dealing with government paperwork is time-consuming and overwhelming for most small tree care companies. Amigos handles everything for members. They recruit the most reliable seasonal workers in Mexico for companies throughout the United States.

Under the agreement, Amigos will:

- Explain the program and its requirements to you and then complete your applications.
- Submit all necessary paperwork and handle all communications with the Department of Labor in your state and at the federal level, the Immigration and Naturalization Service, and the American Consulate in Mexico.
- Provide replacement workers, if necessary, in approximately 10 days or less.
- Promise that their fees include everything except the required newspaper ads and $1,000 premium processing fee paid to I.N.S.). For four to 15 workers, the fee is $650 per worker. Contact them directly to discuss fees for a larger number of workers.

Save on your dues, too!

Under the agreement, Amigos Labor Solutions, Inc., will contribute 5 percent of total fees paid by confirmed TCIA members to be applied toward dues of members. The company will also contribute 5 percent to TCIA to be applied toward the development of safety and educational programs for the tree care industry.

For Example:

If you use Amigos to hire four employees for a total fee of $3,600 ($650 x 4), you will receive a credit from TCIA for a reduction in membership dues of $180; and TCIA receives an additional $180 royalty from the company for development of safety and educational programs. Call them toll-free at 1-877-3-AMIGOS (326-4467) or go to their Web site at www.amigos-inc.com to learn more about the H-2B program.
Accreditation Meeting

Join us, Friday, Nov. 14 at 2 p.m. for the Accreditation presentation and panel discussion at TCI EXPO convention center, room 311. Because your input is highly valued as this critical program is developing, at this time we will share information about the program, and most importantly, we want to listen to your comments. TCIA Accreditation is now in a prototype stage. After some revision, it will be rolled out by summer 2004, which is why we want to hear from you now. It is a very exciting new program that will improve your business; helping you establish best business practices, create a safer workplace, and improve productivity, through a system of standards and quality control. Many companies have gone to great lengths, relying on years of experience, to do this on their own, and TCIA Accreditation is bringing this all together to offer tree care companies a winning-edge advantage. This program is not only a mark of quality for your business, it is also a guide to help improve business management methods with “bottom line results.” We are looking forward to hearing what you have to say. See you at the meeting.

TCIA and its members help Evergreen Foundation reach its first goal

TCIA has joined with other Green Industry associations to kick off the public education initiative know as the Evergreen Foundation (EF). The EF intends to create a national marketing campaign to consumers throughout the U.S. to promote the economic, environmental and lifestyle benefits of healthy landscapes and green spaces at home, work and play.

TCIA members feel strongly about educating the public about the importance of healthy landscapes and green spaces. End-user associations and industry suppliers see the value of what the foundation is doing to grow and expand the market.

The EF re-organized in June with a national meeting in Minnesota. It reached its fundraising goal of $200,000 in seed money before Labor Day to get the organization off the ground. That goal was met in about 60 days.

The EF, an alliance of Green Industry associations and companies providing products and services to the public, has exceeded its targeted goal of $200,000 in seed money.

Careful use of pesticides and fertilizers, prudent use of water, managing noise and air pollution are among the issues the EF plans to tackle in its campaign. There are coordinated activist efforts in such areas as Canada to New York, Minnesota, and western states to curtail or even eliminate pesticides and fertilizers, severely restrict the use of water and lawns and other efforts detrimental to the Green Industry and consumers, the foundation believes. The marketing campaign will be aimed at highlighting the positive economic, environmental and lifestyle benefits resulting from creating and maintaining healthy landscapes and green spaces.

The companies and associations that have provided initial funding for this campaign are: the Associated Landscape Contractors of America (ALCA), Bayer Environmental Science, John Deere Worldwide Commercial & Consumer Equipment Division, Dow AgroSciences, GIE Media, Inc., Griffin LLC, Lawn Doctor, LESCO, Syngenta, The Davey Tree Expert Company, The Professional Lawn Care Association of America (PLCAA), The Scotts Co., The Turf & Ornamental Communicators Association (TOCA), The Toro Co., Tree Care Industry Association (TCIA), Trusty & Associates, Turfgrass Producers International (TPI), and Weed Man USA.

A number of other companies and associations are also committed to being part of this alliance, but have yet to determine their level of financial or in-kind services commitment.

"We have a tremendous amount of work ahead," says Den Gardner, executive director. "This is one step in a long journey to communicate to consumers through one voice. This first-of-its-kind effort can go a long way to demonstrating the long-term economic and environmental advantages consumers have by creating and maintaining healthy landscapes and green spaces."

Over the course of the next year, the EF will initiate a fundraising campaign to finance the communications effort by working with end-users and service providers in the Green Industry. It plans to implement a consumer communications campaign in the fourth quarter of 2004 or early in 2005.

"Now that the organization is funded for a year, we need to develop an innovative funding formula and recognition levels to do the kind of national campaign that gets us the biggest bang for the dollars invested," Gardner continues. "We have a fairly clear idea of how much is needed to do a national campaign. We need the major support of end-users - those companies with their local businesses at stake - to step forward and endorse our plan."

For more information about the EF, please call 1-800-758-4835 or e-mail evergreenfound@aol.com.

An invitation to TCIA members

AdrianJuttner, owner of Adrian’s Tree Service in New Orleans, invites any and all TCI members to come to New Orleans during peak termite activity (April 15 - June 15) to learn about battling termites, meet with customers, and – if you are lucky – witness termites swarming at twilight.

For more information, call him at (504) 367-1160 or e-mail adriantree@aol.com.
Parks Count Too

In Oak Park, Ill., trees will be counted as part of a public tree inventory. The village hired Mark Duntemann, of Natural Path Forestry Consultants in Montpelier, VT. Mr Duntemann will catalog all the trees on village-owned property. The service will cost in the area of $48,500, and will include a tally of all trees under Park District care as well, which has an estimated 34,000 trees. The inventory would include details about type, variety, expected life span and health of trees. This will assist planners in developing long term projects and will be of great importance in green space preservation. The inventory count species and log damage to help officials decide which trees to plant more of. The village’s last tree inventory was in 1985. Then Oak Park had about 19,000 trees on village-owned property. In 1985 Oak Park had: 3,824 American elms, representing 20.4 percent of village-owned trees; 2,519 Norway maples, about 13.4 percent; and 2,010 lindens, which represent 10.7 percent.

Duntemann consults and writes about urban forestry policy issues, including tree-risk management. His web site is: www.naturalpathforestry.com.

Scholarships Program

SavATree recently announced the establishment of a Sensational Scholarships Program for college students of all levels majoring in arboriculture, horticulture or a related field.

Four $2500 scholarships will be awarded to students with at least a B average who present the most impressive combination of academic, extracurricular and hands-on credentials. Two college seniors will be chosen this December, followed by two underclassmen in spring of 2004.

According to company president Daniel van Starrenburg, “We recognize the importance of education in the future advancement of the green industry. SavATree’s success is largely due to the level of service and expertise our well-educated plant health care professionals are able to provide. Naturally, we are enthusiastic in our support of students pursuing careers in these sciences.”

Complete packets of information including eligibility requirements and applications are available by writing SavATree Corporate Office at 550 Bedford Road, Bedford Hills, NY 10507; by calling (914) 241-4999 ext. 153; or by e-mail: scholarships@savatree.com.

Loads of Honors

Dr. Claus Mattheck, Head of the Biomechanics Department at the Karlsruhe Research Institute, was recently awarded the Deutscher Umweltpreis, Germany’s highest environmental achievement award. The prize, which includes a monetary award of EUR 500,000, was presented by German President, Johannes Rau, on Oct. 26 in Osnabrück.

As a physicist, Mattheck has succeeded in deciphering the mechanical load of trees by taking their ultimate strength and stableness as an example, and has formed developments and computer programs from this which today are found not only in automobile construction but also washing machines, artificial hip prostheses and tooth implants. He embodies modern conservation that is committed to sustainability in the original sense of the word.

Mattheck has always placed great emphasis on finding a happy medium between science and society. One of his main target groups has been children and teenagers, who have been drawn closer to what, at first, would appear to be an uninteresting topic through the worldwide publication of children’s books and cartoons.

Arsenic and Old Mulch

Recent studies and reports have highlighted a problem with some products used in children’s playgrounds. Mulches made from recycled pressure treated wood can contain arsenic, which may contaminate playgrounds or leak into the soil and groundwater. One Florida company, Forestry Resources, features an arsenic-free product line derived from melaleuca. Chromated Copper Arsenate (CCA), a chemical treatment for wood, contains arsenic. As this wood ages and is replaced, it may be recycled, and in some instances chipped for use as landscaping mulch. A study by the University of Florida and the University of Miami revealed 18 of Florida’s top producing mulch companies are using this recycled wood to make their products. According to the Florida Center for Solid and Hazardous Waste, the amount of arsenic-treated wood to be discarded is equal to 216,000 miles of two by four’s, or the equivalent of 590 Lake Okeechobee’s.
Please tell these advertisers where you saw their ad.
Their patronage is greatly appreciated.

<table>
<thead>
<tr>
<th>Reader Service No.</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ACRT, Inc.</td>
<td>19</td>
</tr>
<tr>
<td>2. Aerial Equipment Inc.</td>
<td>43</td>
</tr>
<tr>
<td>3. Aerial Lift, Inc.</td>
<td>Back Cover</td>
</tr>
<tr>
<td>4. Air-Spaed/Concept Engineering</td>
<td>80</td>
</tr>
<tr>
<td>5. Almstead Tree Company, Inc.</td>
<td>118</td>
</tr>
<tr>
<td>6. Altec Industries, Inc.</td>
<td>Inside Back Cover</td>
</tr>
<tr>
<td>7. American Arborist Supplies</td>
<td>29</td>
</tr>
<tr>
<td>8. Arborjet</td>
<td>97</td>
</tr>
<tr>
<td>9. Arborscape Pro</td>
<td>79</td>
</tr>
<tr>
<td>10. ArborSoftWorx</td>
<td>104</td>
</tr>
<tr>
<td>11. ArborSystems, LLC</td>
<td>99</td>
</tr>
<tr>
<td>12. ArborTech</td>
<td>58</td>
</tr>
<tr>
<td>13. Arborwear LLC</td>
<td>88</td>
</tr>
<tr>
<td>14. Asplundh Tree Expert Co.</td>
<td>Inside Front Cover</td>
</tr>
<tr>
<td>15. Bailey’s</td>
<td>26</td>
</tr>
<tr>
<td>16. Bandit Industries, Inc.</td>
<td>17</td>
</tr>
<tr>
<td>17. Bartlett Arborist Supply &amp; Manufacturing Co.</td>
<td>82</td>
</tr>
<tr>
<td>18. The F.A. Bartlett Tree Expert Co.</td>
<td>116</td>
</tr>
<tr>
<td>19. Bishop Company</td>
<td>10</td>
</tr>
<tr>
<td>20. Blue Ridge Arborist Supply</td>
<td>56</td>
</tr>
<tr>
<td>21. Buckingham Manufacturing Co., Inc.</td>
<td>115</td>
</tr>
<tr>
<td>22. J.P. Carlton Company</td>
<td>37</td>
</tr>
<tr>
<td>23. CEI</td>
<td>115</td>
</tr>
<tr>
<td>24. Chuck Smith Log Mauler</td>
<td>93</td>
</tr>
<tr>
<td>25. Cutter’s Choice</td>
<td>118</td>
</tr>
<tr>
<td>26. The Davey Tree Expert Company</td>
<td>119</td>
</tr>
<tr>
<td>27. DICA Marketing Co.</td>
<td>103</td>
</tr>
<tr>
<td>28. Durand-Wayland, Inc.</td>
<td>40</td>
</tr>
<tr>
<td>29. Dynamic Manufacturing Corp.</td>
<td>27</td>
</tr>
<tr>
<td>30. Fanno Saw Works</td>
<td>110</td>
</tr>
<tr>
<td>31. Fecon, Inc.</td>
<td>61</td>
</tr>
<tr>
<td>32. Forestry Equipment of Virginia</td>
<td>82</td>
</tr>
<tr>
<td>33. Forestry Suppliers, Inc.</td>
<td>74</td>
</tr>
<tr>
<td>34. Future Forestry Products, Inc.</td>
<td>49</td>
</tr>
<tr>
<td>35. G&amp;A Equipment, Inc.</td>
<td>113</td>
</tr>
<tr>
<td>36. Giffre Brothers Cranes</td>
<td>81</td>
</tr>
<tr>
<td>37. Good Tree Care Company</td>
<td>108</td>
</tr>
<tr>
<td>38. The Hartford</td>
<td>23</td>
</tr>
<tr>
<td>39. Hol-Mac Corporation</td>
<td>126</td>
</tr>
<tr>
<td>40. Husqvarna Forest &amp; Garden Co.</td>
<td>75</td>
</tr>
<tr>
<td>41. IML - Instrument Mechanic Labor, Inc.</td>
<td>56</td>
</tr>
<tr>
<td>42. Implemax Equipment Co., Inc.</td>
<td>87</td>
</tr>
<tr>
<td>43. Independent Protection Company</td>
<td>50</td>
</tr>
<tr>
<td>44. International Society of Arboriculture</td>
<td>51</td>
</tr>
<tr>
<td>45. Jameson Corporation</td>
<td>68</td>
</tr>
<tr>
<td>46. Jarraff Industries, Inc.</td>
<td>85</td>
</tr>
<tr>
<td>47. Jarraff Industries, Inc.</td>
<td>101</td>
</tr>
<tr>
<td>48. Lemco Tools</td>
<td>53</td>
</tr>
<tr>
<td>49. Leonard Manufacturing</td>
<td>45</td>
</tr>
<tr>
<td>50. Lewis Utility Truck Sales, Inc.</td>
<td>117</td>
</tr>
</tbody>
</table>

---

* Please circle this number on the Reader Service Card for more information.
After almost 30 years of wielding a chainsaw as a professional arborist and recreational woodcutter, I had an unfortunate accident that sent me to the hospital emergency room.

I am now one of those statistics that we all read about from time to time. I am one of the lucky ones. My prayers were answered in a way. The five lacerations across my right knee totaled 7 ½ inches and required 25 stitches to close. The kneecap was not touched, nor was any of the tendons or other critical tissues of the knee.

After counting my blessings many times over, I have had ample time to reflect on this incident. Was it a preventable accident? What could or should I have done differently?

I am writing because I am sure that there are a number of arborists that will be able to relate to this story and learn from my misfortune.

It happened the morning of Sept. 10, 2003. We had a work order to remove a small clump of dead elms adjacent to a municipal parking lot. I had contacted the Parking Division to have the meters posted so that we could get in and out before the business day began. I dropped one of the sections that was 10 inches in diameter into the parking lot and began cutting the brush for chipping—something I must have done a million times over the years.

I wasn't complacent. I remember making an undercut on a 4-inch diameter limb, anticipating that as I cut the limb, the rest of the tree would settle downward. I was prepared, or so I thought. I always anticipate movement in reaction to my cuts, especially if other forces are present. In a situation like this, I slow the cut to allow time for the limb to slowly break and settle to the ground. As I did this, I stepped backwards and the saw came into contact with my leg. (When I dance, I am sometimes accused of leading with the wrong foot. Maybe here too, I led with the wrong foot.)

My theory is this: Because I was cutting with the top of the bar making an undercut, the limb began settling downward. As I stepped back, the bar must have contacted another branch, forcing the saw back toward me faster than I could react, making contact with my leg.

Could this accident have been prevented? Maybe, maybe not. This job is full of inherent dangers and equipment that demands our utmost respect.

This accident may have been entirely preventable. If I had just put on those old, uncomfortable safety chaps from behind the seat, all I would have injured was my pride.

As my knee begins to heal, you can bet that I will be ordering a pair of the more comfortable fitting, newly designed protective chaps or pants for myself and each member of my crew.

A recent change in wording of the 2000 edition of the Z133.3 standard, says that an arborist shall (no longer should) wear leg protection when operating a chain saw on the ground.

Steve Pregler is city forester for the City of Dubuque, Iowa
HELPING CREWS WORK
SAFER & SMARTER

In the real world, one requirement that never changes is finding ways to help your crews work more safely. That's why Altec tree care equipment is built rugged, reliable and designed with integral safety features. Our complete line of aerial devices and wood chippers is highlighted by our newest machine - the Altec LRV60-E70. It will help your crews work smarter and more efficiently. This unit combines 75 feet of working height and smooth maneuverability with the lowest cost of equipment ownership in the industry and unmatched financing options. For tree care units that help you work safer and smarter, call the company that builds them - Altec.

See us at TCI EXPO 2003!
THE HEIGHT OF SUCCESS IS AERIAL LIFT INC.
of Milford, Connecticut
WE WILL NOT LET YOU DOWN
Aerial Lift Models available from 38' to 77'

Visit our Web site to link to company and product information, including our “Online Showroom”!
E-Mail: aerialinfo@aol.com
Company Website: http://www.aeriallift.com

Visit our Web site to link to company and product information, including our “Online Showroom”!
E-Mail: aerialinfo@aol.com
Company Website: http://www.aeriallift.com

SIDE REACH 52'

135° Articulated Lower Boom • 215° Articulated Upper Boom
Continuous Rotation

From trimming to removals, you gain the extra height by working over the rear of the truck, enabling you to set up in smaller and tighter area.

62' WORKING HEIGHT WITH 52' SIDEREACH

All parts on an Aerial Lift are available for overnight delivery.

AUTHORIZED WOODCHUCK CHIPPER DEALER

REAR MOUNTS

One Year 100% Warranty

AERIAL LIFT, INC.
P.O. Box 66 • 571 Plains Road • Milford, Connecticut 06460-0066
PHONE USA: 1-800-446-5438, In CT: 1-800-245-5438 • Phone: (203) 878-0694 • FAX: (203) 878-2549
E-Mail: aerialinfo@aol.com Company Website: http://www.aeriallift.com

Please circle 3 on Reader Service Card