Check it out!

TCI's Spring Fashion Issue!

How Do Your Shrubs Grow?
A Guide to Shrub Trimming

Maintaining Your Bucket Truck
From uniquely designed feed systems, cutting mechanisms and unparalleled discharge capabilities, Vermeer disc and drum chippers are built tough to get the job done. See the new BC1000xl chipper with increased chipping diameter capabilities at your dealership today!

From invention to innovation, Vermeer stump cutters lead the pack. As the inventor of the stump cutter, Vermeer has introduced innovations like the patented AutoSweep® system, direct drive cutter systems, remote controls and durable Pro Series teeth. Take a look at the newly released SC50tx rubber track, self-propelled unit — fits through 36" (91 cm) openings!

There's no greater peace of mind than partnering with a leader. In addition to its worldwide dealer network, Vermeer has strategic alliances with industry giants, including Sherrill Incorporated and ArborMaster Training, Inc. Vermeer offers everything you need for success on the job site, and backs it up by being in the field for you.

Your Total Solutions Provider

Call 1-888-VERMEER or visit www.vermeer.com for more information.

Ask About Special Financing Programs And Warranties Up To Three Years!
Microinjection: the Rx for Wilt Diseases in Trees

Extreme environmental stresses predispose trees to foliar and vascular wilt diseases such as:

- Oak Wilt
- Dutch Elm Disease
- Sycamore and Dogwood Anthracnose

Oak wilt disease has been discovered in 21 eastern US states with the heaviest damage in the mid-west states surrounding the Great Lakes. In red oaks, which are more susceptible than white oaks, wilt is almost always lethal and death can occur in as little as one month. Another aggressive fungus carried by the elm bark beetle causes Dutch Elm Disease, one of the most destructive vascular wilt diseases.

By the time the symptoms of fungal infection are noticed, treatment is usually ineffective and the tree cannot be saved. The preferred approach is identifying at risk trees and focusing on prevention and nutrition.

With the Arborjet microinjection system it is quick, easy and cost effective to treat the trees before they become infected.

Based on soil and foliar analysis, Arborjet’s research scientists have formulated organic and natural based nutritional supplements to augment the tree’s vitality.

Arborjet offers therapeutic formulations that will limit the progress of wilt disease. Using the Arborjet system, a greater number of trees can be treated in a shorter period of time since there is no waiting period for product absorption and no microinjection capsule left behind. And, you can triple your profits in 1/3 the time!

The Arborjet’s fast and effective new injection system offers real headway in the battle against wilt disease!

All Horticultural Specialists Can Benefit from Arborjet
The state of the art Arborjet device is a lightweight, handheld portable tool.

Equally effective for large deciduous or evergreen trees, ornamental trees, palm trees, shrubs, and vines. Its applications are extremely versatile—from controlling native insect pests and exotic insect invasives to augmenting plant health vitality and regulating plant growth.

Introducing a new and environmentally responsible tree and plant injection system.

Minimize tree injury while using environmentally safe products to preserve our natural and urban forests. The Arborjet method assures quick and effective delivery of compounds directly into the tree using a micro-injection system 2.5x smaller than other methods.

- Eliminates drilling
- No capsule left behind
- Fast – no waiting for product absorption
- 3 times the profit in 1/3 the time

Please circle 7 on Reader Service Card

Arborjet offers therapeutic formulations that will limit the progress of wilt disease.

Using the Arborjet system, a greater number of trees can be treated in a shorter period of time since there is no waiting period for product absorption and no microinjection capsule left behind. And, you can triple your profits in 1/3 the time!

The Arborjet’s fast and effective new injection system offers real headway in the battle against wilt disease!

Call 1-866-ARB0RT or 1-866-272-6758 www.arborjet.com

ADVERTISMENT
Just Don’t Do It

Not the way I usually want to communicate with people; starting off with a negative statement. However, it’s one of the responsibilities NAA has as a trade association – to help people improve their businesses the right way.

It’s a new season. It’s a different economy. Times are changing. Every study I pick up says that the workforce is getting older. Immigration laws are tightening up. Postage is going up. Regulations are increasing. It’s not getting any easier out there.

Tempting to think about ways around the system, isn’t it?

“Who is going to know if a few of us sit down and talk about how we’re pricing our tree care this spring? Those anti-trust laws were written for the really big corporations. I’m just a small business trying to stay alive and feed my family.

“What if I do pay some cash under the table to my employees, or I don’t put everyone on my workers’ compensation insurance? They’re just fat cats, and the premiums are out the roof now. They just keep going up.”

Bottom line … it matters. It matters how you get there. Regardless of whether you’re a fan or not, here are some powerful words from Oprah Winfrey”

“Real integrity is doing the right thing, knowing that nobody’s going to know whether you did or not.”

A business built on a lack of integrity does taint itself all the way around. It sends messages to your employees that it really doesn’t matter if they participate in your safety program in the morning or just fudge the paperwork. It permeates everything, because you’re the owner and you set the tone. If you start chipping away at doing business honestly, it will chip away at your business in the long run. Good people won’t stay with you, because something just doesn’t feel right.

Just don’t do it.

Cynthia Mills, CAE
Publisher

Copyright 2002 by the National Arborist Association. All rights reserved. Reproduction in whole or in part without written permission is prohibited. The National Arborist Association is dedicated to the advancement of commercial tree care businesses. Reference to commercial products or brand names in editorial does not constitute an endorsement by Tree Care Industry magazine or the National Arborist Association. Tree Care Industry (ISSN 1099-0520) is published monthly by the National Arborist Association, 3 Perimeter Road, Unit 1, Manchester, NH 03103. Subscriptions $30 per year (Canadian/International orders $45 per year, U.S. funds; $2.50 per single copy). Periodicals postage paid at Manchester, NH. POSTMASTER: Send address changes to Tree Care Industry, PO Box 15007, North Hollywood, CA 91615-5907.
Access the best in equipment, application expertise and support.

It's the Telelect distributor organization, an uncommon network of equipment professionals sourcing simple, available and cost effective Telelect Tree Trimmers. Telelect Network provides an unparalleled level of application expertise and product support to help ensure your equipment investment is productive and profitable.

It's a winning combination — the financial strength of a major corporation and customer focused and responsive local representation. Tap into this valuable resource. Contact your Telelect Network Representative now.

www.telelect.com

TEREX TELELECT

600 Oakwood Road • Watertown, SD 57201 • (605) 882-4000 • FAX (605) 882-1842

Please circle 66 on Reader Service Card
April
continued on page 6

Features

8 Fashion: Putting the Fun Back in Functional
By Michael Roche

22 Pruning Shrubs for Health and Beauty
By Ruth Foster

60 Maintaining Safe Bucket Trucks
By Michael Roche

Departments

2 Outlook
By Cynthia Mills, CAE
Professional ethics aren’t a choice.

16 Branch Office
By Phil Nilsson
Know the key figures that will determine the success of your business.

18 Cutting Edge
New products and news in the tree care industry

28 Washington in Review
By Peter Gerstenberger
The top 10 OSHA standards most frequently cited for tree service businesses.

30 Business of Tree Care
By Roger Feit
Selling a variety of services on the same visit will increase your bottom line.

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 National Arborist Association, we vow to sustain the same uncompromising standards of excellence as our members in the field, who adhere to the highest professional practices worldwide.
THE WORLD’S MOST COMPLETE LINE OF HIGH PERFORMANCE STUMP CUTTERS

MADE WITH PRIDE IN THE U.S.A.

RG9
RG20
RG20HD
RG1625 Super Jr.
RG1642M
RG1672M
RG50
RG85
RG1672DXH
SUPER TOOTH
RG120DXH
T275 with FM 7260
Forestry Mower/Mulcher

Call 1-800-392-2686

4255 Lincoln Way East | Wooster, Ohio 44691-8601
www.raycomfg.com | E-mail: rayco@raycomfg.com

RAYCO
"The Stump Cutter People"

Please circle 56 on Reader Service Card
continued from page 4

**Departments**

34 Industry Almanac
Important regional and national meetings and activities.

36 ANSI Standards
By Sharon Lilly and Geoff Kempter
Putting the ANSI pruning standards to work in your business is good business.

44 Wildlife Management
By Andrew J. Cowan
The Countryside and Rights of Way Act helps protect bats and wildlife habitat.

50 Pest Management
By David Munson
Leaf-eating insects pose serious problems for tree care professionals. Don’t let the plants in your care become “salad on a stick.”

54 Forest History
By Steve Sandfort
The legacy of America’s forests is one of abuse, use and rejuvenation.

66 Readers Forum
By Marshall Adams
Words of wisdom from the old school have a special meaning today.

68 Classified Advertising
Help wanted, services, businesses, new and used products for sale

78 Wood Processing
By Rick Howland
Before you buy that grinder, figure out how the chips (and profits) will fall.

22 Pruning Shrubs: Timing, Scope, Purpose

60 Caring for Buckets Keeps Employees Safe

84 Operational Safety
By Tim Ard
A simple tool and some quick calculations will help you take safe felling to new heights.

86 Tree News Digest
News, stories and information on trees from around the world

88 From the Field
By Kevin Westphal
Thoughts on the perfect tree and the fine art of pruning.
Mycorrhizal fungi are part of a balanced, nutritious breakfast...

Use MycorTree™ products by themselves or in conjunction with your spring fertilizing program to increase the plant's ability to uptake water and essential mineral elements by establishing a more extensive root system. MycorTree™ products are loaded with mycorrhizal fungi as well as a virtual cocktail of bio stimulants.

MycorTree™ Injectable™

1 box (eight 4oz packets) - makes up to 400 gallons  15139  was $148......  NOW $126!
1 case (4 boxes) - makes up to 1600 gallons  24038  was $542......  NOW $461!

Please circle 60 on Reader Service Card

1-800-525-8873  www.wtsherrill.com
or visit a participating Vermeer dealer


VERMEER and VERMEER LOGO are registered trademarks of Vermeer Manufacturing Company in the US and/or other countries. All Rights Reserved.
Today’s working clothes aren’t just for your father anymore. They’ve become hip. Not only are they functional, comfortable and durable, they just plain look good. It’s with this idea of cool work clothes that we present the first Spring Fashion Issue of Tree Care Industry magazine. Let’s have some fun...

Arborwear

Started in 1997 by Paul Taylor, ArborWear has quickly gained a reputation of wanting to be on the forefront of cool and durable work clothes. Whether you meet the owners at TCI EXPO, browse their catalogue, or check out their Web site, the image you keep getting is these guys want every arborist to wear their clothes and they want them to have fun doing it.

The story behind how ArborWear came to be is fairly well-known. Five years ago, Taylor realized there was a lack of flexible sturdy work clothes.

“My idea was to combine the durability of heavy-duty canvas pants with the technical features and fit of a rock climbing pant,” he says. “I spent a year and a half learning the ropes of the textile industry and developing our product line. I would take our prototype garments into the field with me each day, and give them a thorough thrashing!

Karen is a chip off the old block with her vibrant red utility suspenders (new this season from Carhartt), rugged Wild Ass work jeans and “Log Hard” T-shirt, both classic Bailey’s items.
“I climbed in them, fed the chipper in them, and quickly discovered what worked and what didn’t. By the fall of 1998, we had produced our first batch of pants and shirts, which we sold at trade shows. There was an immediate interest in what we were doing.”

In 2000, Taylor enlisted Bill Weber in his endeavor, and ever since, they have been on a mission to help arborists wear tough, smart-looking clothes.

Their clothes however, aren’t just cool to look at – they are functional as well. The shirts button halfway down to avoid getting caught on a branch when you are climbing, and their extra length keeps them tucked in and out of the way. The pants have double fronts for extra wear and extra space in the crotch area so you can step wide between limbs without blowing out a seam. Arborwear pants are thoughtfully tapered at the leg where you attach climbing spurs to prevent bunching.

Arborwear shorts are made of the same strong material as the pants so you can rake that lawn in comfort at the end of the day. The belts – and even the belt buckles – are sturdy but thin. They won’t get hung up on your saddle or dig into your stomach when you’re up a tree.

New this spring is a heavy-duty canvas jacket with a polar fleece liner and a lighter weight twill shirt. The twill shirts are available in short and long sleeves.

Arborwear also makes short-sleeve T-shirts with the company logo imprinted on them or long sleeve T-shirts that declare, “Built to Climb.”

“Most arborists – me included – wouldn’t think of skimping on their chain saw, chipper, rope, or saddle. Why ... skimp on clothing?” emphasizes Taylor. “Why should they skimp on clothing?”

Opposite page: At left, Kelly sports a snazzy cranberry Arborwear hat and red fleece-lined shield squall jacket from Carhartt. This page: Above, Alasdair takes a look back in his olive Arborwear shirt and Bailey’s Wild Ass jeans. At right, Kelly takes off her forest hat and relaxes in her long-sleeved “Built to Climb” T-shirt, sharp green Arborwear belt and midnight blue canvas utility pants from Carhartt.

Karen stretches after a long day’s work. She has been able to keep things “light” with rugged lightweight Arborwear pants, while she miraculously keeps things “white” with the washed flannel-lined jacket from Carhartt.

Bailey’s

Started in 1975 by Bill Bailey and his wife Judith, Bailey’s is the world’s largest mail-order logging supply company. The company began after Bill had an accident logging and hurt his back. He needed to find another occupation. He and his wife saw a need in the industry for quality logging products, sold at reasonable prices. By people who knew the logging business. Like many small businesses, they started small, working out of their house and garage. Twenty-seven years later, they have two large warehouses located in California and Tennessee.

Since there are obvious crossovers between the logging and tree care industries, Bailey’s is extremely popular among arborists.
Their catalog carries everything from sawmills to ropes to pants. They can clothe you from head to toe— from hats to boots—but for the purpose of this article we’ve left out protective equipment to focus on pants, shirts and jackets.

Bailey’s Wild Ass pants are popular and feature extra-strong denim material with a full cut. Their Web page claims, “You can still find old-time quality and classic style in an all-cotton work pant.” The pants also come in a double-front panel for extra wear.

Bailey’s duck pants are made of 14-ounce denim and have “double- and triple-stitched seams, double-front knees, and rivets at stress points for increased strength and durability.” When you buy these pants and take them out of their box, you’ll notice they are stiff, but one washing and you can wear them out to dinner.

“For some people they can be dress pants,” offers Bill Bailey, president of Bailey’s. “They put on a clean pair with no holes in them and that’s all they need for a special occasion.”

It’s obvious these pants have been field-tested—they are so sturdy you feel like you could work in them every day for seven years and barely have a scuff mark on them.

“Our pants are guaranteed to perk you up,” says Bailey. “Some people going through life need a lift. Our pants can help.”

The duck jacket provides the same durability and strength as the pants. The stylish looking hickory work shirt is made of heavy twill and comes with a zipper running halfway down the front. The shirt is extra long to keep it tucked in under tough working conditions.

Bailey’s also knows that there should be some fun at work, and for that they carry T-shirts. One declares, “Log Hard,” with bold red lettering, while another shirt has a tree with a climber that says, “Just Climb It.”

“You can also have Henry the donkey (the “wild ass”) on your collared shirt pocket so he’s close to your heart, and another one on your butt so you’re covered north and south,” quips Bailey.

Above: You can’t wear just any clothes when chain saws and other potentially dangerous equipment come into play. Tim is sure to keep safety his top priority in his spruce green poplin industrial shirt from Dickies and chestnut brown lightweight pants from Arborwear. Luckily for Tim, Arborwear recently started making pants in just his size—a long 36-inch inseam.

Above: There’s nothing like a rope and a smile to go with this snazzy T-shirt. Left: Bailey’s duck work coat is thick, durable, and will provide years of wear.
Carhartt

Carhartt has been making clothes since 1889 when Hamilton Carhartt started making overalls for railroad workers. Located in Dearborn, Mich., the company now owns 13 unionized factories and employs 2,500 workers.

The traditional duck jackets and utility pants are known by working men and women in all trades, having gained a reputation for function, durability, and good looks.

"Consumers are looking for products that are worth their dollar, something they know will last and is the real thing," notes Paula Steele, marketing communications supervisor, at Carhartt. "People we talk to want clothes that fit, are comfortable, and wear well," she continues. "They find that in Carhartt."

One of their testimonials comes from a man who flipped his lawn mower down an embankment. The mower landed blades down, still running, and on top of him. He could feel the blades getting into his neck, but the thick Carhartt coat he was wearing stopped the blades and saved his life.

Perhaps one of the greatest tributes to the rising popularity in good-looking work clothes came from a recent New York Times article. In it, women from Manhattan were lamenting how they couldn’t find quality men in their own borough, so traveled to Brooklyn in search of a "Carhartt Guy." They described this person as hard-working, capable of making a decent salary, and interested in coming home to his family. That says a lot about any today’s working apparel.

Clothing needs to be functional first but it can also be good-looking to wear, and there is no reason why it can’t make you attractive to the opposite sex.

"We are constantly out there talking and listening to our customers," Steele explains. "We are constantly improving. If it can be made better, we will make it better. It’s not just workwear; it’s a tool."

NAA staff arborist Tim Walsh attributes his successful throwbag toss to his all-time favorite Arborwear pants available in a size he has found in few places: 34 waist by 36 length. A long-sleeved Woodsman hickory shirt from Bailey’s keeps him toasty during early spring jobs.

Above: Cool spring temperatures don’t keep Alasdair from doing his job when he has a thick, warm and flexible Arborwear jacket to protect him from the elements. Top right: Karen is ready to catch a few rays while she does some lawn work in her hunter green polo shirt and rinsed stone cargo shorts, both from Dickies. An Arborwear hat will help keep those sun rays from blinding her as she toils away.

Tough cargo utility pants from Carhartt protect Alasdair as he gets ready to do some serious pruning.
Dickies

Dickies line of work clothes started in 1922 when the Williamson family bought out E.E. Dickie from a partnership in the overalls business and renamed the company the Williamson-Dickie Manufacturing Company. It is now the largest maker of work clothes in the world, with a giant selection of everything from the toughest work clothes to a children’s line of clothing.

Dickies has spent decades building a well-deserved reputation for good looking, quality clothes for a reasonable price. Wear Dickies cargo pants and work shirt while consulting with customers, and they will know you are dealing with a professional! Later that day wear the same clothes running a chain saw (with appropriate PPE, of course!), and know you are in clothes tough enough to handle the task.

Dickies has seven kinds of work pants, two of which come with a double knee. Their double-knee work pant has a loose fit, a permanent crease and an extra pocket for a tool or cell phone. They also carry a line of flannel-lined work pants, great for extra warmth outdoors without overheating you in the office.

There are nine different Dickies work shirts, many of which match their long pants. The chambray shirt is made of 50 percent cotton and 50 percent polyester and is permanent press, giving it a slightly dressier look. There are 16 colors of T-shirts to choose from and all are made from 100 percent pre-shrunk cotton.

Their performance jacket has a warm fleece lining, front pockets with zippers, and is water-resistant. The washed flannel jacket has a corduroy collar and is available in hip or waist length. When buying a coat from any company, keep in mind that full length is best if you are working outside, but hip length is more comfortable when you are driving your truck.

When you can’t say it better yourself, Arborwear’s “Built to Climb” long-sleeved T-shirt says it best - especially with a nice hat to cap it off!

WoodsmanPRO™

Chain Saw Chain

Here is our most popular pro-arborist chain. 30LP is an aggressive cutting low-profile chain that matches perfectly with an ArborPRO™ bar. Do not choose this chain unless you are a professional arborist or utility worker with experience running a chain saw. Chain is .375 pitch, .050 gauge, full comp. Popular loop prices are below.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>SALE PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>WPL 14 30LP50</td>
<td>14&quot; chain loop for mini Stihl (50 drive links)</td>
<td>ea. $7.49</td>
</tr>
<tr>
<td>WPL 14 30LP52</td>
<td>14&quot; chain loop for mini Echo, Poulan, Husky (52 drive links)</td>
<td>ea. $7.49</td>
</tr>
<tr>
<td>WPL 16 30LP55</td>
<td>16&quot; chain loop for mini Stihl (55 drive links)</td>
<td>ea. $8.49</td>
</tr>
<tr>
<td>WPL 16 30LP56</td>
<td>16&quot; chain loop for mini Echo, Poulan, Husky (56 drive links)</td>
<td>ea. $8.49</td>
</tr>
</tbody>
</table>

ArborPRO®

Sprocket nosed Bars

If you are tired of the low quality laminated bars that come with today’s smaller professional saws, here is your answer. ArborPRO® bars are designed with today’s professional users in mind. Made of special micro-alloy steel, these bars are wider and thicker than stock bars. They also come with a stout 4 rivet tip to give you increased life in the nose area. Try one on your tree saw and see why professional arborists refuse to run anything else. Bars fit Stihl, Husky, Poulan and Echo saws.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>SALE PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>APM 12</td>
<td>12&quot; ArborPRO™ Bar</td>
<td>ea. $11.95</td>
</tr>
<tr>
<td>APM 14</td>
<td>14&quot; ArborPRO™ Bar</td>
<td>ea. $12.95</td>
</tr>
<tr>
<td>APM 16</td>
<td>16&quot; ArborPRO™ Bar</td>
<td>ea. $13.95</td>
</tr>
</tbody>
</table>

Call Now! for our FREE 116 Page Full-Color 2002 Master Catalog! Mention Source Code T8K4

Bailey's

www.baileys-online.com

Offer good through 5/31/02. © 2002

1-800-322-4539

Please circle 11 on Reader Service Card

TREE CARE INDUSTRY - APRIL 2002
150 SPECIALIZED TRUCKS AT WWW.OPDYKES.COM

2000 STERLING L7500: CAT 3126, 210 hp, 6 spd, air brakes, with 14 ton MANITEX crane, 71 ft hook height, 11,000 original miles. Like New. $59,500.

1999 INT 4700: diesel, 5 spd + 2 spd rear, 33 GVW, with 17 ton USTC crane. 118 ft hook height, 12,000 miles. NICE! $64,500.

98 FORD F8000: 5.9L, 195 hp, Allison auto, 18 ft flatbed, with rear mounted 4 ton IMT crane. 32 ft side reach. $37,500.

2000 STERLING L7500: 3126 CAT, 210 hp, 6 spd, air brakes, 33 GVW, 17 ton MANITEX crane, 118 ft hook ht. NICE! $69,500.

1998 FORD F800: 230 hp diesel, 6 spd, air brakes, 15 ton PIONEER crane. 112 ft hook height, 9,000 miles. NICE! $69,500.

89 FORD F800: 7.8L diesel, Allison auto, power steering, 33,200 lb GVW, with 8 ton NATIONAL 8025 crane, hyd winch. $19,500.

97 INT 4700: DT466E, 210 hp, 7 spd, 32,900 lb GVW, with 4 ton NATIONAL NS50 crane, 1,700 lb at 27ft, remote controls, 23ft steel flatbed, $39,500.

95 GMC TOPKICK: 3116 CAT, 250 hp, 8 spd, tandem, 4,800 GVWR, 147K miles. 20ft steel flatbed, 65% ton IMT 8025 crane, remote controls. $36,500.

88 FORD F8000: 3208 CAT, 210 hp, Allison 4 spd auto, 33,000 lb GVW with 3 ton DUNBAR 727T knuckleboom, 3 hyd extensions, remote control, lift gate. $14,900.

92 ISUZU FVR: 8 cylinder diesel, 200 hp, 6 spd, 32,900 GVW, 188 steel flatbed, 61 ton IMT crane, remote controls, 36'7" side reach. $34,500.

95 FORD F8000: Cummins 5.9L, 5 spd, with 36ft ALTEC AO300 bucket, joystick controls. $18,900.

(4) 92 - 93 FORD & MACK diesels with 50ft ALTEC AN650 buckets. $34,500 each.

88 GMC 7000: 8.2L diesel, 5 spd, 33 GVW, with 5 ton IMT crane, and dump body. $11,900.

88 FORD LNT9000: Cummins LTA10, Fuller 8 spd + lo, tandem axle, 9 ton COPMA crane, 46'9" max side reach. $39,500.

87 FORD LTS9000: L10 Cummins, 8 spd + lo, 18/44 rears, BARKO 80 log loader. $29,500.

84 FORD LN8000: 3208 CAT, Allison auto, with 10 ton RO crane, 60 ft hook height. $19,500.

92 FORD F8000 CREW CAB: Cummins 8.3L, 5 spd + 2 spd rear, 7 ton NATIONAL 337A crane. 47ft hook ht, 14ft wood flatbed with stakesides. $25,500.

88 AUTOCAR ACM64: Cummins LTA10, Fuller 8 spd + lo, tandem axle, 7 ton IMT knuckleboom, 47'7" max side reach, pin-on forks, remote controls. $29,500.

99 INT 2375: Cummins LTA10, Fuller 8 spd + lo, tandem axle, 61 ton HIAB 160 crane, 33'2" max side reach, 42" forks, 20ft wood flatbed. $28,500.

150 SPECIALIZED TRUCKS IN STOCK

50 Bucket trucks, 15 Boom trucks, 15 Knuckleboom trucks, 5 Sheetrock trucks, 10 Unmounted Knucklebooms, 15 Digger Derricks, 25 Mechanics trucks with cranes, 30+ Fuel trucks and Lube trucks...

Opdyke's Truck & Equipment Sales
3123 Bethlehem Pike • Hatfield, Pennsylvania 19440 • FAX 215-721-4350 • www.opdykes.com

Please circle 49 on Reader Service Card
These latest trends in arborist clothing are just the tip of the iceberg when it comes to fun, functional and rugged outdoor workwear. We want to know what you have discovered works best when climbing, chipping or just generally sweating your workday away. Send recommendations on your favorite arborist clothing to: Ziminsky@natlarb.com or call Ariana at 1-800-733-2622, Ext. 123.

Specialty Attachments
Engineered for Extraordinary Performance
Expand Your Bottom Line

ImpleMax Equipment Co., Inc. is a manufacturer of specialized attachments for extraordinary applications. From Montana’s rugged Rocky Mountains, we design and build skid steer, tractor and compact loader work tools that improve productivity and increase bottom line profits.

Built with exceptional quality materials and workmanship to deliver top performance. Vibratory plows to install erosion control silt fence up to 100 feet per minute. Grapples and rakes for site preparation/cleanup, landclearing, and construction/demolition.

Our focus is customer satisfaction. At ImpleMax we are satisfied only when our customers are bringing more to the bottom line.

1-800-587-6656 • Fax 1-406-587-2808 • www.implemax.com
P.O. Box 549 • Bozeman, MT 59771-0549, USA
The 335XPT arborist saw by Husqvarna. Powerful, balanced, and more reliable than ever. It boasts an unbeatable power to weight ratio, snag free shape, and the industry exclusive ArborGrip™, our textured handle with thumb and throttle finger supports for greater control and to get you to those tight, high places with ease. Nobody 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. To find the nearest Husqvarna Power Retailer call 1-800-HUSKY-62 or visit our website at www.husqvarna.com. For information about ArborMaster Training, call 1-860-429-5028.

Arbor Grip™
Balanced textured top handle
Thumb Grip
Throttle finger support
Built-in rope ring

Air Injection
Crown Commitment
15-day satisfaction guarantee

Husqvarna
Tough Name. Tough Equipment.™

Use of chain saws in trees should only be done by professionals with specific training. Price and availability vary by dealer. ©2002 Husqvarna

Please circle 28 on Reader Service Card
Business people tend to view their company operating results as something they do at year’s end. Financial statements, tax returns, an annual sit down to analyze how the business did taken from a historical perspective. This is all well and good, but the problem with it of course it won’t tell you what’s going on in the business over the short term ... and in time to turn them around.

What’s needed to fill the gap is short-term reporting. Short-term reporting or “key figures” are indicators of how a business is doing for a month, week or even a day. If you don’t follow these key figures in the spring when things get busy, it will be too late to do much about it when you finally add things up at yearend.

Key figures tell us if over the short term the company is on track to fulfilling long-term goals without going through the expense or formality of preparing financial statements.

Key figures ... the bare minimums

The numbers we’re after to measure short-term results need to be easy to “get at,” apply and understand – without doing endless research or investing a lot of time. If you know one or two key figures as bare minimums, you can often fill in the blanks to the others. How often you want to know this information is up to you, but when I was in business I used to run tallies every day.

What was I looking for? What did I want to know? Sales ... labor costs ... direct costs, overhead, and projected profit. At the end of each day, it took me about 15 minutes to figure out the results of that day. After getting the results for the day, I then transferred the information into a logbook. This was a book that would eventually contain the outcome of each production day for an entire year.

Certain assumptions about the key figures had to be made to avoid the time and expense of actually looking at accounting records. Nevertheless if you have two figures – sales and labor hours – that’s all you need to get started filling in the blanks. This is generally true because certain expense categories “follow” along in ratios or percentages (as a rule) when compared to sales and labor costs.

The things you should know

1. Daily production or billable sales created.
2. Direct payroll costs for the day.
3. Direct overhead costs for the day on daily labor.
4. All other overhead costs for the day, assigned to that one day.
5. Profit for the day.

This may seem like a lot of trouble to go through to get the key figures, but it isn’t that time consuming because all you need is the sales figure and the payroll hours for the day. The rest of the numbers will fall into line by ratio.

We want to know how high the sales were for the day and how much it cost to do those sales. Log all these numbers, run a year-to-date in your logbook, and you’ll have a cumulative “picture” of where you are.

Finding the numbers to use

The daily payroll part is easy. How many hours did your
people work, what is the average hourly pay, what was the total payroll for that day? Enter this into your logbook.

Sales for the day is what was produced in billable work. If jobs are not billed because they weren’t completed or are still in process, estimate the percentage of completion. For fixed contracts, spike out known sales values for portions of the work completed such as spraying, pruning, mulching and so on.

Direct overhead costs are assumed to follow payroll costs and hours. Get this “hourly figure” by analyzing your financial statement to draw conclusions and come up with an hourly cost on average. Direct overhead costs are costs that happen because you did some work and “engaged” other expenses.

When an employee comes to work, certain expense categories follow him around during that day — fuel, depreciation on equipment, supplies used, insurance on the vehicle, repairs to equipment. Those costs can be visualized as “on the road” costs or “at the job site” costs. All other overhead costs such as rent, utilities, advertising, general overhead and administrative costs can be visualized as “back at the shop” costs.

General overhead expenses are those that are not identified or related to payroll hours. They happen and cost you money whether you have business activity or not. Split these out separately and come up with an estimate of the total production hours you expect to have for the year. Yes, as you go along during the year you may have an increase or a decrease to production hours as new work comes in, but it’s the best number you have today so work with that number. As production hours go up more than projected, general overhead costs per hour go down, and vice versa.

The end result

How high a level of sales did I have today? What did those sales cost? What was my profit for the day? How much have I made this season so far? How does that compare to where I thought I’d be at this point? Isn’t that what you want to know?

Phil Nilsson is a business consultant, speaker, and author. He owned and operated a landscape design-build-maintain firm for 15 years.

---

We have what you want . . .
when you want it . . .
at the lowest possible price

- chain saws
- pole pruners
- saddles
- hand saws
- carabiners
- decay detection
- ropes
- chemicals

Check our catalog or website for all the equipment and supplies an arborist needs.

Our service is the best in the business
- 92% Same day shipping
- Spare parts for everything sold
- Low, competitive pricing
- Friendly, courteous service from our knowledgeable staff

Call 800-441-8381  Fax 888-441-8382
www.arborist.com
High Voltage Live Line Alarm

Baker Equipment recently introduced the High Voltage Live Line Voltage Alarm. Designed to be worn on the user’s dominant arm, this watch-sized device has an actuating distance of approximately 59 inches. With a sound volume of 65 decibels, this device automatically sounds an alarm to warn of the potential for an electric shock accident when an access equipment operator gets close to high voltage energized parts. The High Voltage Live Line Alarm runs on a lithium battery with a service life of two years. For more information, contact Baker Equipment at PO Box 25609, Richmond, VA 23260-5609; call 1-800-446-2610 or fax (804) 342-6883.

ArborSystems
Tree Injection Kit

The ArborSystems tree injection start-up kit provides everything needed for tree care pros to try out this way to treat trees. With this system, you can treat a tree in less than three minutes and generate from $25 to $65 of revenue per tree. Each start-up kit includes the tree injector, wedge punch, four bottles of chemicals, and training video in a single case. A variety of chemicals is available to treat various tree conditions. A typical start-up kit retails for under $1,000 and can generate up to $3,500 in income. The process of treating trees is quick and environmentally friendly. Since the chemicals are injected directly into the active layer of the tree, there is no waiting for absorption, no risk of drift getting on plants, cars, or people, and, in most cases, no need for posting. ArborSystems offers a free CD-ROM which provides complete information on how to offer profitable tree treatment services. The CD-ROM includes information on disease and insect control, the pricing and profitability of treating trees, and a step-by-step video demonstrating how to use the ArborSystems tree injection system. For more information, call 1-800-698-4641 or visit www.arborsystems.com.
Cone-Head Chipper

Dynamic Manufacturing has introduced its new line of Cone-Head Chippers, starting with the Model 500. Actual chipping is done on a compound angle, and always at the center of the drum where torque is maximized and efficient use of horsepower is at its peak. The Model 500 has a 28-inch-wide-by-14-inch-high chipper throat opening. The in-feed throat is 5 feet wide by 3 feet high and flares to 7-foot-4 at its widest point. The Model 500 Cone-Head weighs in at 8,450 pounds. It is powered with a 125 hp Caterpillar and can handle up to 14-inch diameter limby, gnarly material. For more information, contact Dynamic Mfg. Corp., 5059 W. Weidman Road, P.O. Box 39, Weidman, MI 48893; call (989) 644-8109; or visit www.pik-n-pak.com.

Please circle 93 on Reader Service Card

Bug Barrier Tree Band

Envirometrics Systems, Inc., has introduced Bug Barrier Tree Band, a non-chemical barrier for crawling and climbing insects. This product is a sticky material that physically traps insects, eliminating the need for chemical pesticides to control these pests. A dense, flexible fiber barrier is wrapped around the trunk to fill bark crevices and cut off insects' escape route. The fiber also lets the bark "breathe" and prevents the adhesive from touching the bark. A film barrier with a sticky inside is installed over the fiber, stopping bugs in their tracks. Part of the film barrier extends below the fiber barrier to prevent bugs from taking a detour. When it is full of insect carcasses, the band is removed. For more information, contact Paul Martin, Envirometrics Systems Inc., 3 Kinnear Crescent, London, Ontario, Canada N6K 1V7; call 1-888-276-4104; or visit www.envirometrics.ca.

Please circle 94 on Reader Service Card

X-Tra-Lift

The X-Tra-Lift is a loading system with a 1,300 pound lifting capacity that fits inside the already existing pick-up box. The box is equipped with heavy-duty casters to roll it to where you need it once placed on the ground. It loads and unloads parallel to the ground. For more information, contact Stellar Industries, 280 West 3rd St., Garner, IA 50438; call 1-800-321-3741; fax: (641) 923-2812; or visit www.stellar-industries.com.

Please circle 95 on Reader Service Card
Cynthia Mills named to 2002 Class of Fellows

Cynthia Mills, CAE, was one of 14 leaders nationwide named to the American Society of Association Executives’ (ASAE) 2002 Class of Fellows. The Fellows designation is one of ASAE’s highest honors, conferred upon industry executives who have compiled a history of significant contributions during their careers. The 2002 Fellows join 156 other men and women who have received the designation since the program’s inception in 1986.

ASAE relies on the advice of the Fellows as they seek to stay abreast of trends in the profession and anticipate future challenges. “It really is an influential and knowledgeable group of executives, and I’m pleased to welcome the 2002 class,” said ASAE President and CEO Michael S. Olson, CAE.

“I am honored to be included with such an influential and distinguished group of executives,” said Mills. “Being a career association executive brings one into contact with volunteer leaders and association professionals who make critical differences in the lives of people around the world. As a Fellow, I look forward to serving with other association executives to positively impact leadership development in all volunteer organizations.”

The American Society of Association Executives is a membership organization made up of roughly 25,000 association executives and suppliers.

Merges and Changes at Time Manufacturing

Time Manufacturing Co. has merged the sales and marketing of the Versalift and Condor product lines. All Time Manufacturing salesmen now represent both product lines. This merger applies only to the company salesmen and does not change the focus of the distributor network, as there will continue to be distributors who handle only Condor or Versalift, although it is possible to represent both.

The goal, according to Time Manufacturing Co. President Charles Wiley, is to “let the customer know that we are here to meet any need he has - from a tele-scoping 29-foot van unit, to a 210-foot unit to maintain transmission towers... He doesn’t have to make two phone calls. He doesn’t have to deal with two companies.”

In addition, the parts and service departments for both Versalift and Condor have also merged into one customer service department, headed by Dorian “Cowboy” Clawson.

Some immediate changes distributors and customers will see include an online parts ordering system for distributors, and toll-free numbers being added for phone calls and faxes. In addition, inventory of available parts has been increased more than 25 percent.

Erickson New President of Corona Clipper in U.S.

Corporacion Patricio Echeverria/Bellota has named Steve Erickson as president of the U.S. subsidiary Corona Clipper, Inc., which manufactures and distributes pruning and long-handled tools. Erickson was vice president of finance and joined Corona in 1992. He succeeds Jim McGovern, who left the company to join a family business.

Tree Educator's Summit update

The Student Society of Arboriculture has teamed up with Dr. Alex Shigo and the Portsmouth Series, hosted by Northeast Shade Tree, to present the first Tree Educator's Summit.

This two-day event is scheduled for July 11 and 12, and will take place in and around Portsmouth, N.H. There will be an outdoor portion of the summit at a local “Tree Morgue” (a log dumping site for a tree service) for dissections, as well as an indoor portion with microscopes.

This is not another lecture; this is an opportunity from some of the world’s best tree educators to spend time learning from each other and touching trees. Discussions will be based on what attendees discover at the seminar.

This will be a leave-your-ego-and-agenda-at-the-door opportunity to share with and learn from the best tree educators in the world - you and your peers.

Dr. Shigo will be donating his fee to the Student Society of Arboriculture. The cost for this event is $575.

Space is limited, so sign up soon. Contact Tim Walsh, Director, Student Society of Arboriculture, P.O. Box 4821, Manchester, NH 03108, or via e-mail at SSADirector@att.net.

You may also contact Northeast Shade Tree at (603) 436-4804.

Cummins, Fleetguard Emission team up

Cummins Inc. recently unveiled a new venture within its filtration business unit to create and sell solutions to treat the byproducts from engine combustion. Fleetguard Emission Solutions unit has been formed to provide solutions for customers to meet the tightening emissions regulations around the world.

The technology offered through the Fleetguard Emission Solutions business will enable reciprocating engines to cost-effectively meet or exceed future U.S., EPA, and international emissions requirements. This business will research, develop, and commercialize systems and products for use in mobile and stationary applications.

This business will focus on the retrofitting of the existing engine population with emissions control devices and the development of emissions system solutions for Cummins and other original equipment manufacturers for future emission requirements.

Virginia Tech Expands Urban Forestry Program

Virginia Tech’s College of Natural Resources is expanding its urban forestry program. Harold Burkhart, head of the forestry department, said, “There are a limited number of urban forestry programs in the U.S., and demand for graduates is high.”

As part of the expansion, Brian Kane will join the program full time in June as assistant professor to teach additional urban forestry classes. Kane complete his doctorate and master’s degree in urban forestry at the University of Massachusetts,
MORBARK CELEBRATES 45TH ANNIVERSARY

Morbark is celebrating its 45th anniversary in 2002. What started in a small blacksmith shop nearly half a century ago has become a 1.5 million square foot facility that manufactures forestry, recycling and sawmill equipment.

Norval Morey, a logger, sawmill owner and entrepreneur, worked with three of his employees in 1957 to patent and introduce the first portable pulpwood debarker. As part of the anniversary celebration, this original debarker was restored to original condition and will be on display at the ConExpo-Con/Agg Trade show. For more information about Morbark’s anniversary celebration, call 1-800-831-0042 or visit www.morbark.com.

And also holds a bachelor’s degree in political science from Holy Cross College in Worcester, Mass. Most of Kane’s research has consisted of hazard tree identification, urban forestry, and arboriculture. He has also been published in TCI.

MENDLESKY MANAGER OF SPECIAL PROJECTS AT FORD

Bob Mendlesky has recently been named special project manager at Ford Power Products. In this position, Mendlesky will be responsible for coordinating the development of new business opportunities via product development projects.

Ford Power Products is a wholly owned subsidiary of the Ford Motor Co. FPP supplies Ford engines, transmissions and other related powertrain equipment to original equipment manufacturers in the industrial, marine and on-road markets.

OBERLANDER NATIONAL SALES MANAGER AT GROWTH PRODUCTS LTD.

Growth Products Ltd. recently announced Randy Oberlander has been promoted to the newly created position of National Sales Manager.

Prior to joining Growth Products, Oberlander was Central Pennsylvania Turf & Ornamental Sales Representative for United Horticultural Supply. The University of Georgia Certified Turfgrass Professional has also held various positions at Andgrow Fertilizer and Pro-Lawn Products.

Growth Products Ltd. manufactures crystal-clear liquid fertilizer, chelated micronutrients, natural organics, microbial inoculants, and a biological fungicide. Incorporated in 1984, Growth Products Ltd. is focused on the development of innovative, environmentally sound products for the green industry.

Free Book Offers Many Ideas for Waste Wood

The USDA Forest Service made available a new publication entitled, “Utilizing Municipal Trees: Ideas from Across the Country.” The 90-page color booklet provides stories from entrepreneurs, tree care companies, city foresters, and sawmill operators who see opportunities for making fine furniture, unique woodcrafts and other lumber products from otherwise wasted urban trees. Author Steven Bratkovich has extensive experience in marketing and wood utilization, and has spent two years researching this book.

To obtain a free copy of this publication, contact the USDA Forest Service, Northeastern Area State and Private Forestry, 1992 Folwell Ave., St. Paul, MN 55108, call (651) 649-5262 or visit www.na.fs.fed.us/spfo/pubs/misc/umt.

FOR THE ARBORIST

Featuring the newest technology in arborist tools and climbing equipment.

FOR THE LANDSCAPER

Check out Bishop Company’s new catalog of professional tools and equipment for the landscaper.

FOR THE POWER EQUIPMENT DEALER

Become a Bishop Company dealer and stop sending your customers away empty handed.

CALL (800) 421-4833 and request your free copy today!

Bishop Company
P.O. Box 870, Whittier, CA 90608
1-800-421-4833
or sales@bishopco.com
24 Hr. Fax 562-638-6238

Please circle 14 on Reader Service Card
Pruning Shrubs for Health and Beauty

By Ruth S. Foster

Shrubs are very self-sufficient, but if neglected, they can be a pain to restore and renovate. A light yearly pruning or shaping will keep most looking good for many years. Eventually they may get too large and outgrow their space, especially if they were chosen carelessly. Or they may get sparse and ratty looking. Fortunately, most deciduous shrubs can be cut back severely without harm. Evergreens must be pruned more conservatively, although they, too, will sprout again from old wood, albeit slowly.

Correct pruning is a skill—a fine art, actually. Different plants require different care and at different seasons. There are many, many rules—all of which have exceptions, of course, making things even more complicated. But you can bring order out of the chaos with a few basic truths.

Basic Truth No. 1:
New shoots will sprout where you cut.

At each cut. Sounds obvious, but careless pruners neglect to think about how and where the new shoots will grow.

Basic Truth No. 2:
Know why you are pruning.

The main reasons are:
1. To control size;
2. To improve the shape or thin out dead, crossing, overgrown shoots by selective thinning;
3. To increase flower buds by pinching the tips of new growth, especially azaleas and rhododendrons;
4. To thicken the foliage. This is done by shearing or pinching off the tips, particularly on hedges and evergreens.
5. To completely renovate by cutting back to within about 6 inches of the ground. English gardeners love to do this, which is how they maintain such old gardens.

Basic Truth No. 3:
Prune at the right time.

Here’s where it gets confusing, since each season produces different growth and each species has its own little peculiarities.

General pruning calendar

Very early spring: Very early spring, before or just as the buds swell, is generally the best time to prune deciduous shrubs that are grown for foliage (such as euonymus, barberry, privet). Also, one can prune summer flowering shrubs that bloom on “first-year wood” (roses, hydrangea, rose-of-Sharon, butterfly bush, pontentilla). First-year wood consists of branches that both grow and produce flowers in the same year.

Equally important is when NOT to prune. Most deciduous
shrubs and trees resent being cut when they are just leafing out. At that time, they need their growth hormones and the carbohydrates stored in their roots for making leaves. Better to prune earlier, just as they buds swell but haven’t begun to leaf out. Or, wait until the leaves have fully expanded.

Evergreens and hedges are an exception. Generally they are sheared or hand clipped after growth has started and they begin to look untidy. Just the new tips are taken off. The purpose is to thicken them. Remembering the first truth above, at each clipped tip, two or more new shoots will grow.

Spring/early summer: Shrubs that flower in spring on “second-year wood” are pruned just after they finish blooming, for their flower buds are formed on branches grown the year before. (For sythia, lilac, bridal wreath, kerria, bush honeysuckle, wigelia, viburnum, most spireas, rhododendrons and azalea.) If pruned heavily in early spring, all the flower buds will be cut off.

Summer: Summer pruning is for thinning, shaping, and dwarfing. By removing leaves in summer, you remove some of the ability of the plant to make carbohydrates (which is actually the food of plants. Fertilizer is technically not plant food.) Then the plants grow less, which, if you are spending all that time pruning them back, is a good thing.

Fertilizer makes them grow faster, which means you have to prune even more. So only fertilize for specific reasons. Don’t just throw it around with a heavy hand and thoughtless head.

Fall: Do NOT prune so late in the season that new shoots will not have time to harden off before winter.

Late fall: In late fall, after a hard frost and true dormancy, pruning may be done on very hardy varieties, but there is a danger the tips may winter kill on cold-sensitive species.

Late winter: Late winter is a time when tough, deciduous hedges, such as privet, can be sheared for a perfect geometric shape. They generally need another shearing in late spring or summer to maintain the effect. A light snipping of stray, errant shoots as needed helps, too.

Some people also prune tough evergreens (such as yew and holly) at this time because it fits into the work schedule more efficiently. A little tip kill may occur but can be corrected later.

Of course, it’s necessary to temper the so-called rules with your judgement, which gets you back to that basic truth that when you cut, something new will grow. Then you have to prune again.

The bottom line for timing of pruning comes down to the basics. When does your labor force have the time for major pruning? When do you prefer to keep things looking neat with a regular light clipping of errant stray shoots? How can you best incorporate your understanding of the pruning process into your work schedules?

Specifics about different shrubs, little tricks and exceptions

You should not read this at bedtime unless you have insomnia because it is certain to put you to sleep. It is all useful information, though perhaps more than you really wanted to know.
To control the size of overgrown shrubs

To control the size of overgrown shrubs, one can selectively cut back the overly long shoots. Spare the chain saw approach, though, or better yet, thin out the crowded, untidy inside of the bushes, saving only young, healthy vigorous shoots that have several years of productive life ahead of them. This is the correct way to prune them.

About one-quarter to one-third of the oldest and weakest stems should be removed at ground level, which requires crawling around under the shrub. It’s a time-consuming process, requiring great skill.

Although bushes may live for a century or more, each shoot does not. How long it lives depends on the particular variety. Some develop hardwood-like tree trunks and can live for many, many years; these bushes appear more like small trees.

To turn tall, overgrown shrubs into small, interesting trees, select the trunks you wish to keep, and prune all the side branches off, keeping just the tops. They will continue to grow and bloom each year. It works especially well on rhododendron, hydrangea, paniculata and yew. The bark of yew is often quite interesting. The newly made small tree can be underplanted with ground cover, bulbs, shade flowers such as impatients, and even small shrubs.

To completely renovate

If you are seeking to renovate the shrub totally, cut back all the shoots to about 6 inches. The reason this works is that most shrubs will send up new, young shoots from the ground and have adventitious buds all along their stems. (Most forest tree trunks don’t.)

This kind of drastic cutting back is usually done in the spring, or just after spring flowers have finished. Fertilizer is then scratched into the soil around the base of the plant.

Depending on variety, it may take a few weeks to grow a lovely little green mound of new leaves (as is the case with forsythia). For evergreens (such as yew and rhododendron), it can take most of the year for new sprigs of green to appear. In three years, however, you’ll be glad you waited.

The question is whether your customers will be patient enough.

In old English castle gardens, huge old hedges are renewed by cutting one side back to the center; waiting a few years until that side fills out with new green growth; and then repeating the process on the other side. A good treatment for old, unwanted privet hedges is simply to shear them down to the ground each winter. They return as a small, informal green border that needs no more cutting until the following year. It’s a lot easier than pulling out vigorous roots and making a huge mess.

Remember though, when you do such a drastic renovation, the plant puts all its energy into new shoots and will not set flower buds again for two or three years.

To improve the shape

Improving a shrub’s shape is simply an aesthetic operation. It may involve trimming back lightly, or selectively removing dead, diseased, broken, rubbing or other errant branch growth. After this kind of pruning, the plant looks neater. This can be done whenever one has time, except in the early fall.

To thicken foliage

To thicken foliage, we shear; this is also
the only reason one should use an electric pruner on shrubs. Obviously, hedges are the prime candidate. So, too, are foundation plantings, especially on older homes. Most people who wield a power pruner with careless abandon don't realize that you cannot cut below the green foliage on evergreens. It takes a whole season for bare twigs to green up again.

Also, hedges or pruned shrubs of any shape need sunlight on the bottom leaves as well as the top leaves. Therefore, the proper shape for a healthy hedge is slightly thicker on the bottom than the top. Otherwise the bottom begins to get thin, allowing you to see through it, while the top grows like crazy.

Incidentally, there is another small trick you can use here: Make the top height as high as your tallest worker can comfortably reach while standing on the ground. This is usually about 6 feet. When you have to use a ladder to get the top, it increases the time and cost considerably.

Fine topiary is done by hand with pruning shears. It's very time consuming, but if your clients want that look, and are willing to pay for it, there is no reason why someone can't be trained in the art. Most people buy topiary already shaped because it takes four to 10 years if you try to start training a plant from scratch.

Topiary shaping is done several times a year, gently, using the above guidelines for improving shape as well as the pruning calendar. Topiary plants are fragile because they lose so much foliage so often. A balanced fertilizer in early spring can help topiary plants.

### To increase flower buds

This sophisticated technique is useful for azaleas and rhododendrons as well as some other species. The trick is to watch the new shoots that begin after flowering finishes. Each growing tip produces three to five new shoots, which thickens the shrub. On azaleas it is quite twiggy.

When the new shoots, which are often covered with down or fuzz, reach about three sets of leaves, carefully, nip out the growing tip with your fingers. Two or three new shoots will then sprout from the end, and will set flowering buds in their season. On some species it is every year, on others it takes two years.

One of the interesting differences between rhododendrons and azaleas is that rhodys flower only on the terminal end of a shoot. Therefore pruning should to be done just above a whorl of leaves.

Azaleas bloom on lateral shoots as well as terminal ones. This means that azaleas can be pruned back most anywhere and shoots will arise from the bark. If pruned too severely, the shoots grow vigorously and become too tall. That's why azaleas are more often tip pruned. Some people shear azaleas like hedges. Then they become like hedges and bloom sparsely. The Japanese prune their azaleas like this, though with hand clippers because they...
want them to remain the same size and shape. Their azaleas do not bloom as exuberantly as do mine, which have been only lightly trimmed for 30 years and are in full southeastern sun.

If a shrub is sickly or dying

Pruning and/or fertilizer may or may not help a sickly or dying shrub. They may give a burst of green for a while, though. When the shrub dies, plant something from a different family in case there is a disease or fungus still residing in the soil. This is often the situation with classic rose sickness caused by a fungus.

How to tell what's alive and what's not

When pruning before the buds swell, the main question is, "Is it alive?" Let's count the ways we can tell. First, look at the end of the stem or branch. A live branch will have small twigs and swelling, firm buds. Live stems are flexible and bend. Also, if you scratch off the bark, the cambium will often be green. Dead branches snap off when you bend them and they may have peeling bark.

Sickly shrubs and newly planted ones leaf out very late, much later than normal. Always wait until June to see what's going to sprout. Some — such as the beautiful, esoteric Franklinia, which blooms with camellia like flowers in September — are just very late normally. Many folks ruin the shape of a plant because they just didn't wait long enough.

Lilacs

Lilacs are special because they flower on second-year or third-year shoots, and then continue to flower until that shoot dies from insects or old age, which can be 10 or 20 years. Often they are grown as trees, especially Japanese lilacs.

The trick is to renew lilacs each year by saving two or three new shoots from the ground and removing all the rest of them. As each stem ages, it gets thicker and more tree-like.

Eventually, lilac borers or something else gets into the lilac and it's time to remove it at ground level. Of course, the saved shoots are blooming by that time. That is why old-fashioned lilac plants last forever. (Lilacs also appreciate a side dressing of lime every few years.)

Hydrangeas

Hydrangeas are special, too, and are tricky to prune. When in comes to pruning hydrangeas, the less the better. Generally on macrophylla or French varieties, a single pruning in spring to remove the oldest non-productive canes at ground level will do the trick. Healthy new shoots are usually the thickness of one's thumb and may have a greenish color. The oldest ones are usually pale tan and are often peeling.

The flowering buds are made the year before on these shrub varieties, so the stems should only be trimmed back lightly after flowering has finished. They will not flower if the temperature gets too cold (about 0 degrees Fahrenheit), but will still have healthy leaves.

To renovate really scraggly hydrangeas, cut shoots back to about 2 feet and fertilize.

The white, paniculata varieties often are grown as small trees, and have huge flowerheads at the end of each twig on gracefully drooping limbs. If you inherit one of these, don't touch it. Just prune enough to keep it from breaking. When the ends are pruned in spring, there will be more but smaller blossoms.

The paniculata varieties are renovated by saving several branches at about 2 feet. Paniculata varieties, especially the "Peegee" hydrangea, are very adaptable and can be grown in bush, hedge or tree form. I prefer the tree form.

Correct pruning is a fine art that too many arborists and landscapers neglect to master. Learn the basic rules and adapt them for your area and clientele.

Ruth S. Foster, a garden columnist for 25 years with the Boston Globe, is a Massachusetts certified arborist.
Nov. 7-9, 2002
Midwest Express Center
Milwaukee, Wisconsin

The Greatest Tree Care Show On Earth

Phone: 1-800-733-2622
(outside U.S.) 1-603-314-5380

National Arborist Association
Dedicated to the Advancement of Commercial Tree Care Businesses

Please circle 64 on Reader Service Card
Listed below in descending order are the standards that were most frequently cited by Federal OSHA for tree service businesses during the last fiscal year. In all, Federal OSHA conducted 42 inspections of tree care establishments, issued 126 citations and proposed over $132,000 in penalties in that period. These statistics do not include data from the 22 States that administer their own approved OSHA State plan.

Here with is a brief, plain-English explanation of the likeliest reasons for the ten most cited areas of OSHA regulation.

**Standard Description**

**1910.67**

**Vehicle-Mounted Elevating/Rotating Work Platforms**

Citations under this standard are varied. The most common is the company that failed to have its aerial lifts inspected on an annual or semi-annual basis, or that failed to properly maintain a lift. Also common is the operator who failed to wear appropriate fall protection.

**Standard Description**

**1910.266**

**Pulwood Logging**

It is likely that in some of these cases, the Logging Standard was inappropriately applied to a tree care operation and the company should have contested its citation. Giving OSHA the benefit of the doubt about the true nature of the operation, common violations are not wearing chain saw cut-resistant boots or leg protection; or workers other than the chain saw operator or those involved with the operation within two tree lengths during a tree felling operation.

**Standard Description**

**1910.269**

**Electric Power Generation/Transmission/Distribution**

This standard applies to line clearance tree trimming operations. The most common violation is working within the specified minimum separation distance for the voltage present, but there are varied citations under this rule.

**Standard Description**

**1910.132**

**Personal Protective Equipment, General Requirements**

The common violation is for the employer who fails to assess workplace hazards, prescribe what PPE to use, or issue or enforce the use of appropriate PPE. To quote the standard, “The employer shall verify that the required workplace hazard assessment has been performed through a written certification...”

**Standard Description**

**1910.135**

**Occupational Head Protection**

The common violation, not surprisingly, stems from employees not wearing their hardhats.

**Standard Description**

**5A-1**

**General Duty Clause**

The OSHA compliance officer invokes the General Duty Clause when he observes what he feels is an unsafe condition or act, but cannot find a “good fit” in any existing OSHA standard. Under this clause, OSHA cites the employer for failing to provide a workplace free of recognized hazards likely to cause harm and may go on to make specific reference to an industry’s own standards (ANSI Z133.1 in our case).

**Standard Description**

**1910.133**

**Eye & Face Protection**

Like 1910.135, above, these stem from employees not wearing their safety glasses.

**Standard Description**

**1910.1200**

**Hazard Communication**

The employer has allegedly failed to identify hazardous substances in the workplace and train employees in what PPE to use or what actions to take in order to reduce the hazard. A common substance like gasoline triggers this requirement.

**Standard Description**

**1910.268**

**Telecommunications**

These are similar to violations of 1910.269 for line clearance operations, but in this case, near telephone or CATV wires.

**Standard Description**

**1910.333**

**Electrical, Selection & Use of Work Practices**

This regulation warns all those who have no business being there about the precautions to take around electricity. These citations likely stemmed from crews doing something they shouldn’t have attempted near power lines without first making sure that the wires were either de-energized or covered.

If you implement a comprehensive safety program with management commitment, employee involvement, constant evaluation and regular refinement, then OSHA compliance virtually takes care of itself.
STUMP CUTTERS

2500-4
• 25 Horsepower • Self Propelled
• Full Hydraulic Control • 35" Width

3500
• 35 Horsepower • Compact Tow Behind • Large Cutting Dimensions

3500-4
• 35 Horsepower • 35" Width
• Self Propelled

4400-4
• 44 Horsepower Diesel • Remote Control Available • Most Powerful Portable

7500
• 75 HP Diesel • 1 1/2" Thick 31" Diameter Cutterwheel • Suspension Available • Remote Control Available

Hurricane
• 125 Horsepower Diesel • 6' Tongue Extension • Suspension Standard • Remote Control

J.P. Carlton builds the highest quality stump cutters available. For more information, or to arrange a demonstration call: (800) 243-9335.

121 John Dodd Road • Spartanburg, South Carolina 29303
800-243-9335 • 864-572-0235 • FAX 864-572-0240
Are you so happy to receive confirmation of an estimate that you overlook a ready opportunity to offer additional work? Most salespeople fail to perceive that such a situation is ripe to up-sell, present additional services (some of which are self-perpetuating yearly maintenance) and/or introduce the services of a colleague for which you receive a fee. Also remember, the more work done to the client’s expectation (or better), the greater the client’s loyalty and the number of referrals.

I have known salespeople who receive a confirmation with one foot out the door; they exit as fast as possible. This tactic assures your clients of the reason for your visit: to take their money.

Slow down, stop a moment, smell the roses. Savor your victory, but be ready for Phase 2: Educating the customer and introducing more work. First, we need to retrace our steps in order to understand how best to proceed.

This starts with having a clear understanding of the massive effort involved in obtaining an appointment a serious buyer and delivering your sales presentation.

A proper sales presentation includes:
establishing rapport, probing with questions, offering choices, educating your prospect, offering options, writing clearly what you have discussed, and, finally, again reviewing every item to make sure you and your client are on the same page. When you actually get the work confirmed, it’s a meaningful accomplishment.

This is a big deal for the client also. He or she takes time to warm up to you, and a while longer to begin to trust you. If he says “yes” to your proposal, he is making a huge emotional leap of faith on behalf of your company, you, and your work. At this point (right after his confirmation of your estimate), he is prime for an up-sell or bump (add-on). At McDonald’s, the cashier will ask, “Do you want fries with that burger?” Or, “What would you like to drink?” Those bumps add millions of dollars to McDonald’s bottom line. You can add tens of thousands of dollars to your profits if you do your sales job right and educate your clients about his other landscape needs. These needs may have nothing to do with why you were originally brought to their property.

Build up to your up-sell

Assume you are giving a pruning estimate to a potential new client: Joe Typical and his wife Emily. You walk Joe and Emily’s property, giving them feedback on what you see. Yes, it is primarily pruning information, but as you look closer, you notice that the euonymus hedge has scale and mention that it needs an oil spray; the Japanese maple, forsythia hedge and shrubs and oaks, etc.

Make sure you don’t share your PHC recommendations with Joe and Emily Typical until they have said yes to the pruning. Also, keep it under a different estimate sheet to avoid confusion.

Timing

Timing for these types of situations is critical. Don’t put the cart before the horse. The primary reason that you were brought to the Typicals’ residence was to address their pruning needs, so present that estimate first. When you do present the PHC suggestions, be prepared for Joe to ask, “Do I really need this work?” If appropriate, be prepared to explain to Joe that your PHC recommendations are as important – if not more important – to the property than the pruning. (Generally they are).

Explain why this work is vital, and how it may be more appropriate to cut back on the pruning this year (if appropriate). In all probability, Joe won’t want to do that. Nine times out of 10, he will keep all of the pruning and will also contract most of the additional PHC work because you did a more thorough job looking over his landscape along the way and informing him of what you see.

For the most success, be sure to follow these steps in the order that I described.

Keep it concise

Want another powerful tip? Use a well-conceived estimate form listing all your services. With it, your clients can scan the different services with you that they may want now or in the future (while you explain them more in-depth). You can literally contract twice as much because of it. You will look professional, organized and knowledgeable. Plus, when you write up what their property needs, they won’t feel you sold them the kitchen sink because they can see the numerous services that you did not recommend. They realize they are getting a customized program (and they are).

The best part of having this organized estimate form is that you’ll have an easy way to introduce, explain and contract your
Make lemonade out of lemons

I once had a pruning estimate for a longtime favorite customer of mine. He usually contracted for $3,000 worth of pruning and $2,500 in PHC annually. I had been having an off day and was glad that I had an appointment with Mr. Jones, for I knew I would enjoy conversing with him, walking his property and would leave with a nice job.

Mr. Jones met me at the front door and immediately started to complain bitterly about his daughters. Turns out that for tax purposes, he had gifted this $1,300,000 house (one of his four houses) to his daughters and they were unwilling to pay for any of the maintenance needs on that property. Mr. Jones lived there only during the summer. He passionately expressed that he wasn’t going to spend a dime doing any pruning – a dagger to my heart. “If my daughters aren’t willing to pitch in, I’ll be darned if I will spend another penny on this place,” he said.

He continued to carry on for 10 minutes. When he finally took a breath, I said, “Well I’m here, so we might as well make the best of the time and check and to see if there are any hazards that need addressing. As we walked around, I pointed about $400 of critical work (cutting back a heavy oak limb over the house and installing a cable to a split crotch) that he agreed to immediately.

As we entered the back yard, I noticed that the flowers looked pale. I went over and kicked some dirt up to take a closer look at the soil. It was hard and had an almost orange color. I told him that the reason his flowers were doing so poorly was that the soil was bad. I asked him if he knew the merits of applying compost to the beds. He got very excited and said as a kid his family used to make their own compost and grew incredible vegetables in it. He said, “You have to speak to my wife; she needs to hear this also.” So inside his house we went. We swapped compost stories for an hour.

In the end, I walked out of there with a $2,900 pruning job, a $3,000 job composting all of his beds, and a follow-on annual $3,000 alternating composting job between his lawn or plant beds. From that point on, he resumed his regular $3,000 a year maintenance pruning.

So what is the lesson of this story? There are a few. Lesson one: Do not give up on a service call if you have a real pre-qualified or existing client in front of you. I looked for hazards and other opportunities to improve his property. The second lesson is that by the client agreeing to a small job, he became open to further suggestions, making it easier to introduce other work. Then, third, I up-sold the tree pruning by saying, “Since we are going to be here anyway, do you want us to give the trees our usual full maintenance pruning?” The client said you might as well. And fourth: I offered more annual self-renewing work to his existing plant health (annual $3,000 composting).

Sometimes your add-on sales effort will only result in an extra $150 or $300 worth of annual feeding at an appointment. Even that small amount can total an extra $50,000 or more of self-renewing work annually.

By staying conscious of these steps, in three years I built the plant health care side of my business from $80,000 to $550,000 annually. Again, this was work that served the client to a high level, endearing him to us even more.

Remember, you’re doing your customers a disservice when – because of your fear of overloading them – you ignore bringing up services that will improve their property. What if the Japanese maple that they planted when Emily was born dies because you were too shy to advise them to feed it? If you’re the professional, look around and tell them all that you see. Some people you work for have much more money than you’ll ever see, so don’t project your financial situation on them. Present the information and let them decide. If they really do have a financial handicap, work out reasonable options for them, or give it away if it’s right. Every year I adopt some older person who can’t afford me, but would be tickled if I did some work for them for free. It just feels nice to do.

self-renewing services. The printed word is key; people trust what they read in print. Don’t make the mistake of writing on a legal pad what the customer needs and presenting it to them that way. You will only be shooting yourself in the foot.

Plan ahead

These additional services are not only high-margin work, but they can also be set up to renew automatically. Your company can build a self-perpetuating PHC program. Each year you can aggregate a larger base of perpetual maintenance work. Do you want to start each year with $10,000 of preset work or would you rather have $500,000 of high profit work ready to do? This will allow you to concentrate on delivering the best service, rather than on being consumed by new sales. It’s all in the planning.

Make the best use of your estimating time. Always be ready during or at the conclusion of your sales appointment to explain the benefits of annual deep-root feeding, root growth enhancement treatments, spray programs, mulching, or bed fertilizing; spring, summer, fall or winter maintenance pruning, etc. Offer the appropriate add-on services as an annual contract that self renews – especially the services that serve them to a higher level.

Deliver high-quality results

The most important aspect of these add-on PHC items is that they are typically the highest quality services and they deliver results. It is imperative to provide the best services available. This process is not intended to manipulate your clients but to continuously research and implement better ways of serving them. Most important, you must believe in your services and be prepared to stand behind the results of your new offerings. If you make their landscapes healthier through real, scientifically based plant health care and you educate them about it, your customers will stay with
you forever and your brand will be respected and trusted.

When the going is good...

When you have recently completed work on a client's property (meeting or exceeding their expectations), he or she is primed to say yes to your other highly profitable and self-renewing work. You just have to ask - so ask!! When the job is done, go back and go over the work to make sure that the client is happy and in the process you may be able to improve their property further by selling additional services.

After you confirm some work, congratulate them for making a wise decision. Discuss how wonderful your crew is and the pride they take in their work; describe how beautiful their place is going to look and how they can sleep easier with the hazardous tree limbs over the house taken care of. Tell them that on your Friday morning crew meetings, you slap backs and enthusiastically relate feedback from letters and conversations of happy clients. Your goal and your employees' goal is to create a happy client.

Brush away buyer's remorse

The first thing most people do after they make a major buying decision is to doubt that decision. So after they say yes, sell the heck out of your service. This builds their confidence, adds trust and relationship, and is a great time to ask for referrals - so ask. Post-sales assurance helps your people feel good about their decision. They'll be impressed with you and be more apt to send their friends your way, especially when you ask.

On occasion, while hanging around after a sale, the client may say something like this, “You know what, let's do the whole project instead of splitting it up,” or “My mother has a place around the block and she has a big project she needs advice on.” Stop and smell the roses; you may receive a nice surprise.

Conclusion

There are many good ideas out there. Look around and see what other companies are doing for their clients in our trade and related trades. Leverage best practices and implement them. Learn the best ways to do all your services. Quality counts - and customer service counts as much.

Are you willing to make some changes in the way you do business to make larger profits? Live your dreams. Take time to work on your business each week. Call me if you need help getting started.

Roger Feit of Treewise can be reached at (631) 324-4239, fax (631) 324-8061, or e-mail Treewise@optonline.net.

Please circle 26 on Reader Service Card

Please circle 55 on Reader Service Card

LOWEST PRICES ON THE MARKET
G & A EQUIPMENT, INC. 1-800-856-8261 KNOXVILLE, TN Visit Us At: www.GandAEquipment.com

1995 Brush Bandit Chipper, John Deere Diesel, 14" Capacity, Tandem Axle, 2K hours, Stock #897 $13,900

53' W/H Hi-Ranger on 1985 International, DT-466, Auto, Stock #909 $17,500

1986 International Chip Truck, 14' Chip Box, Tool Boxes, DT-466, 5 Spd W/2 Spd Rear, 99k Miles, Stock #920 $12,900

6' W/H Versalift on 1996 Ford, Cummings Diesel, 6 Spd, 49k Miles, Stock #931 $46,500

57' W/H Hi-Ranger on 1987 International, DT-466, 5 Spd W/2 Spd Rear, Stock #930 $19,500

51' W/H Material Handler on 1991 F-700, Gas, 5/2, Over Center, New Paint, $13,900

60' W/H Allee LR-3 on 1992 GMC Top Kick, Gas, Pony Motor, 57k Miles, Stock #933 $33,500

1992 Ford F-600 Chip Truck, 11' Bed W/Personnel Carrier, Gas, 5 Spd, 61k Miles, Stock #666 $12,900

75' W/H Hi-Ranger on 1990 Ford F-800, Gas, 5 Spd., 8k Original Miles, New Paint, Beautiful Stock #905 $49,500

Please circle 26 on Reader Service Card
**Events & Seminars**

*Don't miss these upcoming events*

**April 7-9, 2002**
10th Anniversary Conference
United Kingdom and Ireland Chapter of ISA
Myerscough College,
Lancashire, UK
Contact: Chris Cooper-Abbs or Lucy Cable
01995 642222, Ext. 2583 or 2214; e-mail isaconference2002@myerscough.ac.uk
or visit www.isa-uki.org

**April 12, 2002**
ISA - Texas Chapter Seminar
EHAP for Arborists
Waco, TX
Contact: Mike Richardson, (972) 442-1524

**April 13, 2002**
ISA - Texas Chapter Seminar
Texas Tree Climbing Championship
Waco, TX
Contact: Mike Richardson, (972) 442-1524

**May 6-17, 2002**
Committee for the Advancement of Arboriculture
Arboriculture I
Basic Tree Climbing School/Course
Thompson Park,
Lincroft, NJ
Contact: (732) 431-7903

**May 7, 2002**
Integrated Pest Management for the Landscape Professional
Oklahoma State University,
Stillwater Campus
Contact: Mike Schnelle, (405) 744-7361
or mas@okstate.edu

**May 8, 2002**
Committee for the Advancement of Arboriculture
First Aid, CPR and Recertification
Monmouth County Fire Academy
Howell, NJ
Contact: (732) 431-7903

**May 10, 2002**
Committee for Advancement of Arboriculture
Chain Saw Safety
Thompson Park
Lincroft, NJ
Contact: (732) 431-7903

**May 14, 2002**
Committee for Advancement of Arboriculture
Electrical Hazard Awareness Program
Thompson Park
Lincroft, NJ
Contact: (732) 431-7903

**May 14, 2002**
The National Arbor Day Foundation
Trees, People, and the Law Seminar
Clarion Hotel (Airport/Opryland Area)
733 Briley Parkway
Nashville, TN
Contact: conferences@arborday.org
or (402) 474-5655

**May 30-June 2, 2002**
Plantscape
11th Christmas Decorating Seminar
Pittsburgh, PA
Contact: Debby Claypoole, (412) 281-6352
or www.plantscape.com

**June 13-14, 2002**
Tree Biology - Magnified
Dr. Alex Shigo
Portsmouth Elks Banquet Hall
Portsmouth, NH
Contact: The Portsmouth Seminars,
1-800-841-2498

**June 16-17, 2002**
Bird & Wildlife Watching and Backyard Habitat
Industry Expo
Dane County,
Madison, WI
Contact: Target Communications,
1-800-324-3337 or www.backyard-birds.com

**June 20-22, 2002**
Ohio Chapter ISA
Summer Tree Conference and Trade Show
Columbus Marriott North
Columbus, Ohio
Contact: Ohio Chapter ISA (216) 381-1740

**July 25-26, 2002**
Washington State Nursery
and Landscape Association
2002 Emerald Expo
Stadium Exhibition Center
Seattle, WA
Contact: Vickie Wilson, 1-800-672-7711,
e-mail: vicwsl@nwrain.com
or visit www.emeraldexpo.com

**July 28-31, 2002**
78th Annual Conference
International Society of Arboriculture
Seattle, WA
Contact: ISA Housing Bureau, (330) 425-9330 or isa2002@conferon.com

**July 30-31, 2002**
Turf and Landscape Field Days
Virginia Tech & Virginia Turfgrass Council
Virginia Tech Campus
Blacksburg VA
Contact: David Chalmers, (540) 231-9738,
chalmers@vt.edu or David McKissack, (540) 231-5897,
turf1@vt.edu

**September 25-26, 2002**
Multi-State Ornamental Plant
Materials Conference
Holiday Inn,
Stillwater, Oklahoma
Contact: Mike Schnelle (405) 744-7361
or mas@okstate.edu

**October 18-20, 2002**
7th Annual Meeting & Exposition
New Jersey Shade Tree Federation
Grand Hotel,
Cape May, N.J.
Contact: Bill Porter, (732) 246-3210

**November 7-9, 2002**
National Arborist Association
TCI EXPO 2002
Midwest Express Center
Milwaukee, WI
Contact: Carol Crossland, 1-800-733-2622,
Ext. 106, crossland@natlarb.com

**February 4-9, 2003**
Winter Management Conference 2003
National Arborist Association
Westin Rio Mar Beach
Rio Grande, Puerto Rico
Contact: Carol Crossland, 1-800-733-2622,
Ext. 106, crossland@natlarb.com

Send your news and events to:
Ziminsky@natlarb.com
Delivered to your home or office computer.

Featured Course:

“Plant Appraisal”

This on-line course is worth 6 CEUs

Presented by:
American Society of Consulting Arborists

in association with:
International Society of Arboriculture
National Arborist Association

To try the demo, visit ArborLearn.org
Putting the Revised A300 Standards to Work for You

By Sharon Lilly and Geoff Kempler

We in the tree care business are governed by or subject to certain industry standards that we have developed ourselves through the American National Standards Institute. In order to understand the A300 standards concerning tree care and how we should be using them, we first need to know the basics of what ANSI is.

The American National Standards Institute is a private, non-profit organization. It is not a governmental body. ANSI facilitates the development of voluntary consensus standards, and these standards must be revised periodically as information and technology changes. The Z133 and A300 are our own industry standards that we have developed under the auspices of the ANSI organization.

Z133 and A300 are not the same. Z133 is a safety standard; it has been around longer than A300 and it covers safety for everybody in our industry. A300 gives standards for how to care for trees and has existed since 1995. It doesn’t deal with safety issues. A300 Part 1 - Pruning is only about 10 pages and contains basic information.

This article will focus on the A300 Standard, and, more specifically, A300 Pruning.

What is A300, and why do we need it?

A300 standards are standards for the care of trees, but they are not “how to’s.” The standards set guidelines for pruning, fertilization, and tree support systems, and an upcoming standard deals with lightning protection. Other topics that are either being considered or are on the drawing board are construction protection, transplanting, root management and more. Ultimately, the A300 standard will be an all-encompassing document that covers nearly every aspect of tree care. Here are the current topics covered by the A300 series of standards (in their proper form for citation):

- ANSI A300 (Part 1)-2001 Pruning
- ANSI A300 (Part 2)-1998 Fertilization
- ANSI A300 (Part 3)-2000 Tree Support Systems

We need standards for standardized practice everywhere. Whether dealing with front yards or back yards, private or utility work, we, as professionals, are painfully aware of some poor practices. A national standard for this sort of work gives us something we can use to compare good work to not-so-good work in an objective way. We also need guides in our businesses for writing specifications. Although A300 is not a specification by itself, it is a guideline.

ANSI standards apply to everyone in our business, but they exclude agriculture and forestry, both of which have their own standards. Those involved in creating our industry standards include groups such as the National Arborist Association, International Society of Arboriculture, major...
corporations, and governmental agencies. Others are asked for their expertise as needed. For example, the National Fire Protection Association was consulted for the upcoming standard on lightning protection.

How can all these diverse interests work together and come up with a document that everybody can live with? We work by consensus, a lot of patience, listening and understanding. We also base the work we do on sound research.

The Guts of A300

Pruning

In a nutshell, edits to the revised A300 include:

- improved organization;
- more clear and consistent language;
- more synchronization with the Z133;
- improved definitions;
- simplified, re-sorted and redefined pruning types.

With regard to the content of the revised A300, there are several aspects that are worth discussing:

"Arborist" has a new meaning

The new A300 has redefined the word "arborist" so that it properly defines arborists as professionals. The new definition also concurs with the definition of "arborist" in the Z133. It reads: "An individual engaged in the profession of arboriculture who, through experience, education and related training, possesses the competence to provide for or supervise the management of trees and other woody plants." Just using and promoting this term can go a long way to increasing our professionalism.

The amount and extent of pruning needs to be specified.

What are specifications anyway? If you’re a municipal arborist, you may have several pages of specifications for pruning on your city trees when you hire out a contractor. If you are a commercial tree care contractor, you should be writing specifications in your agreements with your customers. These specifications should state the objectives for pruning; what type of pruning you will be doing; and the extent of that pruning. The new standards are organized to help you write these specifications.

Pruning objectives shall be established prior to beginning a pruning operation.

Although most arborists would like to think that they always prune for the health of the tree, this is not always the case. Most of the time, we prune trees for "people reasons" that might include reducing risk, improving views, or allowing more sunlight to pass through. There also might be safety reasons at stake - for example, raising trees so that a stop sign can be seen or to allow pedestrians to walk underneath. At times, arborists must compromise between what is best for the tree, and the needs dictated by the site or tree owners.

Not more than 25 percent of the foliage should be removed within an annual growing season.

This recommendation has been stressed many times, but this is an area where an arborist must exercise some discretion. If you are pruning a mature white oak and you take out 25 percent of the foliage, you might severely stress or even kill the tree. A young tree will tolerate removal of 25 percent a lot better than a mature tree will, but 25 percent should be the maximum you should remove in a growing season, unless there are extenuating circumstances.

Not more than 25 percent of the foliage should be removed from a branch that is cut back to a lateral.

The old rule of thumb that many of us learned is that you should cut back to a lateral that is at least one-third the size of the parent stem. In the current standards, the approach is different. The rule now is: Don’t remove more than 25 percent of the foliage. If you are cutting way back, you might be better off removing the limb altogether. If you cut too far back, the branch will not be able to sustain itself and will decline and die back anyway.

Topping and lion’s tailing shall be considered unacceptable pruning practices for trees.

In our profession, we have done a pretty decent job in teaching the perils of topping. Most reputable arborists are no longer topping trees. Unfortunately, once we got the

A pruning cut that removes a branch at its point of origin shall be made close to the trunk or parent limb, without cutting into the branch bark ridge or collar, or leaving a stub. A pruning cut that reduces the length of a branch or parent stem should bisect the angle between its branch bark ridge and an imaginary line perpendicular to the branch or stem. (A300 Pruning 5.3.2. and 5.3.3)
message out that topping is bad, some arborists started over-thinning. Excessive thinning can be nearly as bad as topping. Lion's tailing is one example of that. Lion's tailing removes an excessive number of interior branches, reducing taper, depleting resources, and making branches more prone to failure.

New way to deal with different types of pruning

A300 addressed various types of pruning and specialty pruning. The old 1995 standards gave definitions for certain types of pruning cuts, such as a heading cut and a thinning cut, neither of which exists in the 2001 version. The old definition of the thinning cut included cuts that remove branches back to their points of origin, or cuts that remove leaders back to laterals. The new standard gives an explanation as to how cuts should be made and provides diagrams of proper cuts.

Briefly, here is how each type is addressed:

- **Clean pruning:** Consists of selective pruning to remove one or more of the following parts: dead, broken and diseased branches. This is probably the majority of the routine pruning you do. With every type of pruning, you need to specify the location and the size range of parts – for example, removal of dead limbs. Even if you are removing just one dead limb out of a tree, you need to specify that in a contract. If you are "deadwooding" a tree, you need to be specific as to whether you are taking out everything that is 2 inches or greater, or everything that is dead – even items smaller than your little finger. Include this information in your specifications.

- **Thinning:** Thinning shall consist of selective pruning to reduce the density of live branches. You may need to reduce crown density to increase light penetration to turf below, for example. If the tree had its way, it would keep all of those live branches! The branches present the leaves to the sun, and the leaves are critical to sugar production. Removing leaves reduces photosynthetic capacity. So thinning can be one of the cases where we must balance the needs of the tree and the needs of the people. The A300 does set some standards for thinning, though. When we thin, we must make sure that it results in an even distribution of branches on individual limbs and throughout the crown. This will reduce the tendency to Lion’s tail. Adhering to A300 standards, we do not remove more than 25 percent of the tree’s foliage.

- **Raising trees.** Raising consists of selective pruning to provide vertical clearance for motor vehicles, pedestrians or somebody trying to mow his or her lawn. Once again, you have to specify the clearance and the size range of parts.

- **Reducing.** Reducing shall consist of selective pruning to decrease height and/or spread. Often, we reduce crowns for line clearance. We do not reduce crowns arbitrarily out in open areas. There has to be a clearly defined reason or objective for doing this, and it is important to adhere to proper methods.

- **Specialty pruning – Pollarding:** There probably aren’t many arborists who have actually done pollarding, but many ask, “How is pollarding different from topping?” The answer is: The first time you prune a tree for the pollarding process, you are, essentially, topping it. You are making inter-nodal cuts. The tree puts on callus and woundwood, which forms a “knob.” Every subsequent pruning – which needs to be done annually, in most cases – you prune on the outside of those knobs. The knobs will then protect the tree from decay progressing down into the stems. Cutting through or below the knobs is like make more internodal cuts, and there is no protection from the spread of decay. Pollarding is very labor intensive.

- **Pruning young trees.** The new A300 standard breaks young-tree pruning into two categories: At planting, and once established. At planting, trees are better off when they are not pruned at all. They will establish faster because they need the leaves for photosynthesis, and they also need the auxin produced in the shoot tips to establish new roots. Once new transplants are established, pruning should focus on establishing a strong scaffold branch structure and, in most cases, a central leader.

---

**Buccaneer's Patriot**

- **16 Strand**
- **High Visibility**
- **7000 lb. Tensile Strength**

**Buccaneer Rope Company**

Simply The Best!!

22319 Alabama Highway 79
Scottsboro, Alabama 35768
1-800-358-7673
(256) 587-6232
Fax: (256) 587-9223

Please circle 16 on Reader Service Card

38 TREE CARE INDUSTRY - APRIL 2002
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."

1 800 GO STIHL  www.stihlusa.com

Please circle 62 on Reader Service Card
Climbing spurs shall not be used

Climbing spurs shall not be used when climbing and pruning trees – with a few exceptions, new to the updated A300 standard. The exceptions include:

♦ When limbs are inaccessible because they are more than a throwline distance apart;
♦ When there is thick bark;
♦ When you are working in a remote or rural right of way.

Other considerations

The standard states that the percentage and distribution of foliage to be removed shall be adjusted according to the tree’s species, age, health and site. In other words, don’t prune a spruce the same way you prune a sugar maple. In your objectives, you must take into account growth cycles, structure of a species, and the type of pruning needs considered.

“Should” vs. “Shall”

One potential problem with A300 is interpretation. A300 is full of “should’s” and “shall’s.” These two short words are very significant throughout all ANSI standards. “Shall” is a mandatory requirement in so far as an ANSI standard is concerned, and “should” denotes a strong recommendation. For example, the Z133 standard – which deals with safety – is full of required “shall’s” that leave little room for interpretation and make it clear what safety rules need to be followed, for example, “Head protection shall be worn.”

If you have many “should’s,” then, theoretically, nothing is required. You can “should” yourself right out of a good job and right out of compliance if you’re not careful.

There are more “should’s” in A300 than in Z133, because we are dealing with living resources in which there is a great deal of variability. There may be circumstances, for example, when wound dressings might be appropriate, even though most of the time you would not use one. That is a “should” rather than a “shall” situation. The species, site, and other circumstances

Consider the species and maturity when writing pruning specifications. Mature trees such as this one are less tolerant of removing a significant portion of live foliage than a young tree would be.

“Consider the species and maturity when writing pruning specifications. Mature trees such as this one are less tolerant of removing a significant portion of live foliage than a young tree would be.”

“Should” vs. “Shall”

One potential problem with A300 is interpretation. A300 is full of “should’s” and “shall’s.” These two short words are very significant throughout all ANSI standards. “Shall” is a mandatory requirement in so far as an ANSI standard is concerned, and “should” denotes a strong recommendation. For example, the Z133 standard – which deals with safety – is full of required “shall’s” that leave little room for interpretation and make it clear what safety rules need to be followed, for example, “Head protection shall be worn.”

If you have many “should’s,” then, theoretically, nothing is required. You can “should” yourself right out of a good job and right out of compliance if you’re not careful.

There are more “should’s” in A300 than in Z133, because we are dealing with living resources in which there is a great deal of variability. There may be circumstances, for example, when wound dressings might be appropriate, even though most of the time you would not use one. That is a “should” rather than a “shall” situation. The species, site, and other circumstances

Consider the species and maturity when writing pruning specifications. Mature trees such as this one are less tolerant of removing a significant portion of live foliage than a young tree would be.

“Should” vs. “Shall”

One potential problem with A300 is interpretation. A300 is full of “should’s” and “shall’s.” These two short words are very significant throughout all ANSI standards. “Shall” is a mandatory requirement in so far as an ANSI standard is concerned, and “should” denotes a strong recommendation. For example, the Z133 standard – which deals with safety – is full of required “shall’s” that leave little room for interpretation and make it clear what safety rules need to be followed, for example, “Head protection shall be worn.”

If you have many “should’s,” then, theoretically, nothing is required. You can “should” yourself right out of a good job and right out of compliance if you’re not careful.

There are more “should’s” in A300 than in Z133, because we are dealing with living resources in which there is a great deal of variability. There may be circumstances, for example, when wound dressings might be appropriate, even though most of the time you would not use one. That is a “should” rather than a “shall” situation. The species, site, and other circumstances

Consider the species and maturity when writing pruning specifications. Mature trees such as this one are less tolerant of removing a significant portion of live foliage than a young tree would be.

“Should” vs. “Shall”

One potential problem with A300 is interpretation. A300 is full of “should’s” and “shall’s.” These two short words are very significant throughout all ANSI standards. “Shall” is a mandatory requirement in so far as an ANSI standard is concerned, and “should” denotes a strong recommendation. For example, the Z133 standard – which deals with safety – is full of required “shall’s” that leave little room for interpretation and make it clear what safety rules need to be followed, for example, “Head protection shall be worn.”

If you have many “should’s,” then, theoretically, nothing is required. You can “should” yourself right out of a good job and right out of compliance if you’re not careful.

There are more “should’s” in A300 than in Z133, because we are dealing with living resources in which there is a great deal of variability. There may be circumstances, for example, when wound dressings might be appropriate, even though most of the time you would not use one. That is a “should” rather than a “shall” situation. The species, site, and other circumstances

Consider the species and maturity when writing pruning specifications. Mature trees such as this one are less tolerant of removing a significant portion of live foliage than a young tree would be.

“Should” vs. “Shall”

One potential problem with A300 is interpretation. A300 is full of “should’s” and “shall’s.” These two short words are very significant throughout all ANSI standards. “Shall” is a mandatory requirement in so far as an ANSI standard is concerned, and “should” denotes a strong recommendation. For example, the Z133 standard – which deals with safety – is full of required “shall’s” that leave little room for interpretation and make it clear what safety rules need to be followed, for example, “Head protection shall be worn.”

If you have many “should’s,” then, theoretically, nothing is required. You can “should” yourself right out of a good job and right out of compliance if you’re not careful.

There are more “should’s” in A300 than in Z133, because we are dealing with living resources in which there is a great deal of variability. There may be circumstances, for example, when wound dressings might be appropriate, even though most of the time you would not use one. That is a “should” rather than a “shall” situation. The species, site, and other circumstances

Consider the species and maturity when writing pruning specifications. Mature trees such as this one are less tolerant of removing a significant portion of live foliage than a young tree would be.

“Should” vs. “Shall”

One potential problem with A300 is interpretation. A300 is full of “should’s” and “shall’s.” These two short words are very significant throughout all ANSI standards. “Shall” is a mandatory requirement in so far as an ANSI standard is concerned, and “should” denotes a strong recommendation. For example, the Z133 standard – which deals with safety – is full of required “shall’s” that leave little room for interpretation and make it clear what safety rules need to be followed, for example, “Head protection shall be worn.”

If you have many “should’s,” then, theoretically, nothing is required. You can “should” yourself right out of a good job and right out of compliance if you’re not careful.

There are more “should’s” in A300 than in Z133, because we are dealing with living resources in which there is a great deal of variability. There may be circumstances, for example, when wound dressings might be appropriate, even though most of the time you would not use one. That is a “should” rather than a “shall” situation. The species, site, and other circumstances

Consider the species and maturity when writing pruning specifications. Mature trees such as this one are less tolerant of removing a significant portion of live foliage than a young tree would be.

“Should” vs. “Shall”

One potential problem with A300 is interpretation. A300 is full of “should’s” and “shall’s.” These two short words are very significant throughout all ANSI standards. “Shall” is a mandatory requirement in so far as an ANSI standard is concerned, and “should” denotes a strong recommendation. For example, the Z133 standard – which deals with safety – is full of required “shall’s” that leave little room for interpretation and make it clear what safety rules need to be followed, for example, “Head protection shall be worn.”

If you have many “should’s,” then, theoretically, nothing is required. You can “should” yourself right out of a good job and right out of compliance if you’re not careful.

There are more “should’s” in A300 than in Z133, because we are dealing with living resources in which there is a great deal of variability. There may be circumstances, for example, when wound dressings might be appropriate, even though most of the time you would not use one. That is a “should” rather than a “shall” situation. The species, site, and other circumstances

Consider the species and maturity when writing pruning specifications. Mature trees such as this one are less tolerant of removing a significant portion of live foliage than a young tree would be.
Successful companies have effective safety programs.

Does yours?

Your company's safety program is vital to its profitability, professionalism and success. Whether your company has an existing safety program or is trying to develop and implement one, the National Arborist Association (NAA) Model Company Safety Program can help you establish the most comprehensive and effective safety program possible.

A program developed with the aid of the NAA Model Company Safety Program will:

- Prevent injuries, vehicle accidents and property damage
- Lower insurance costs
- Satisfy contractor/commercial client bidder requirements
- Boost productivity
- Ensure OSHA compliance
- Produce better motivated employees
- Improve ability to finish jobs on time and within budget
- Enhance your company's reputation

The NAA Model Company Safety Program represents the best practices of some of the foremost companies in the industry. It contains instructions to guide you through implementation, as well as sample company policy language and useful forms for program implementation in print and on CD.

Call to order today! The long-term success and well-being of your company and its employees just may depend upon it.

In partnership with

ORDER TODAY!

National Arborist Association
Dedicated to the Advancement of Commercial Tree Care Businesses

Phone: 1-800-733-2622
1-603-314-5380

Fax: 1-603-314-5386
E-mail: naa@natlarb.com
Web: www.natlarb.com

Please circle 44 on Reader Service Card
are taken into account when you consider wound dressing.

There are also elements of A300 where the word “shall” is included. For example, “Pruning objectives ‘shall’ be established prior to beginning any pruning operation.” You must establish the goal of your work and how it will be achieved before you begin. When you think about it, if you don’t know why you’re there, then you probably shouldn’t be there.

Applying A300 to the Real World

Professionals from various sectors convened, put their heads together, and came up with these standards. Now all of you need to put them to use. How? What are some of the problems you might run into when you try to apply the standard, and how can we resolve these problems?

Getting others to see what you see

One of the first issues you may have to deal with is public acceptance. The public wants you to top trees. They want wound dressings and treatments that may not be up to date. They want flush cuts. They don’t want those knobs left on the side of the tree. They don’t like directionally pruning because they don’t like the way the tree looks when it has been directionally pruned.

We have to educate the public, use the standard, and use our professional expertise. We need to use our ability to communicate the best management practices and give reasons why.

Another area you may need to address is employee acceptance. You can tell somebody how to do something but you also need to explain why. It is important that the people working for you understand why they need to do things certain ways. If you give them the big picture in your training program and you use the standard to its full potential, then they will be communicating to the people that they are working with and to your customers. They will be able to explain why they are leaving the little knobs on the sides of the trees, and they will know they are called branch collars.

Understand “why,” not just “how”

Then there is the theory-vs.-the-real-world issue again. It is really easy for us to say that you “should” and that you “shall,” but when you get out into the field and see what you are up against, things can get a little complicated. For example, in the A300 utilities section, it states you should remove whole branches growing toward conductors. In reality, however, you come across a large white oak with a large limb growing toward the conductor. What do you do? Remove all the branches growing toward the conductor and kill the tree? No. You use common sense. You apply your knowledge, you apply common sense, and you factor in the should’s and shall’s of A300—and you come up with the best possible solution.

Above all, be successful

Finally, how successful can we be in implementing the standard? First of all, if you aren’t yet using it, you need to begin applying it whenever relevant. As more and more arborists use A300, the standard will gain credibility. When that happens, we can raise industry standards, and continually improve tree care practices everywhere.

Sharon Lilly is director of educational goods and services at the International Society of Arboriculture. Geoff Kempter is a manager of technical services for the Asplundh Tree Expert Company. This article was excerpted and adapted from a presentation at TCI EXPO 2001 in Columbus, Ohio.
It’s time to get serious!

The Art and Science of Practical Rigging
Hosted by Ken Palmer and Rip Tompkins of ArborMaster® Training, Inc.

- Introduction to Techniques and Methods
- Equipment and Ropes
- Rigging Knots
- Basic Limb Removal
- Advanced Limb Removal
- Compound Rigging Techniques
- Understanding Forces in Rigging
- Top Removal and Rigging Heavy Wood

$249.95 member
$299.95 non-member

INCLUDES:
8 VIDEOS
1 BOOK

The ISA Certification CEU tests included in The Art and Science of Practical Rigging book are worth 8 CEU credits.

Produced by the International Society of Arboriculture
For additional information about ISA books, programs, or training materials:

www.isa-arbor.com
1-888-ISA-TREE
AN-801-ASPR
How often do you think twice before taking down a tree with a hollow stem or cavities? How often do you complete a climbing inspection first and make sure there is nothing living in any of the number of splits or cavities around the branches? How many of us actually realize that we could be committing an offence that could result in a large fine or even a custodial sentence?

In England and Wales, wildlife is protected by the Countryside Rights of Way Act, which could quite easily result in a court case for any arborist working in trees. Since many environmental regulations that begin in Europe eventually make their way to the United States and elsewhere, tree care professionals around the world should take note. Even if no regulations are imminent, this article provides important information on bats and their habitat.

The Wildlife and Countryside Act 1981, Part 1 Wildlife - Section 9
Protection of certain wild animals:

This section states that it is an offence under the act if for any person to intentionally kill, injure or take any wild animal included in Schedule 5. Most of these animals have nothing to do with trees, however one group of mammals does: Bats.

It is an offence to intentionally damage or destroy any structure or place that a bat uses for shelter or protection. It is also an offence to intentionally disturb a bat while it is occupying such a structure or place and/or obstruct the access or entrance to such a place. Furthermore, it should be noted that if there is evidence that a place has been used by a bat, it is protected regardless of whether it is currently occupied or not.

The use of the word “intentionally” has for a long time made it difficult to prosecute offenders, because to prove a breach of the law, the “intention” to commit an offense would have to be shown. This has proved almost impossible. The hapless tree-feller could say it was never his or her intention and it was just an unfortunate accident that a mishap had occurred during an otherwise lawful act. However, the new Countryside and Rights of Way Act 2000 (CRoW) – which is now in force in England and Wales – has amended these sections of the Wildlife and Countryside Act to include the words “or recklessly.”

“So what!”, I hear you say. Well it may just be one word, but “recklessness” is a well-known term in law, and its application within this context will allow for more successful prosecution. It means that we, as professional arborists, are responsible for making sure that we do not destroy an active roost site or even an empty roost (a hole/cavity) in a tree. It is now our responsibility to pre-inspect all trees for cavities to ensure they are not being used by bats.

It cannot be understated that the act represents perhaps the single most important piece of legislation for conservation and wildlife protection since 1981. Overall, the new laws demonstrate a real drive forward in wildlife legislation from passive listing, information, and cautioning where necessary to constructive conservation, decisive action, and enforcement.

The revisions made within the CRoW Act strengthen further the protection provided by the Habitats Regulations 1994 that were estab-
lished to enforce the Habitats and Species Directive 1992, within UK law. The directive provides a list of European Protected Species, which includes all bats. Regulation 39 makes it an offense to damage or destroy the breeding place or resting site of a bat, and can be enforced without the need to prove intent.

It is very important to stress that these acts and regulations are a positive thing. They represent a greater awareness of the need to protect wildlife, a recognition of the value of a diversity of habitats, and the need to preserve them. After all, a tree forms an essential part of an often complex ecosystem that provides a variety of habitats for a range of different wildlife species. The legal protection is there to try to limit the needless loss and destruction that often occurs through thoughtless or reckless activities by individuals or organizations that have not taken the time to evaluate the repercussions of their actions.

**Bat and tree basics**

Bats are surprisingly small and can squeeze into holes that may be no bigger than a matchbox, so it is not just old veteran trees that provide them with roosts. When was the last time you took down a mature broadleaf tree that did not have a cavity somewhere in the trunk or branches? It is often the presence of structural problems, storm damage, cavities formed around old pruning wounds, hollow trunks, etc, that have led to the decision to fell an old tree. However, how often do we think about the benefits of these structural defects – decay and deadwood – as being invaluable to the habitat of other creatures living in and around the tree.

There are at least 16 species of bats native to the British Isles. All are insectivorous and depend to some extent on habitats in which trees are a significant element. Some bats use trees for roost sites and feeding perches, sometimes large hollow trunks are used for hibernation sites, while the vast numbers of insects that associate with trees provide a valuable food resource. Sometimes large trees and hedgerows provide bats with landmarks on which they base their nightly feeding flights. These routes are often habitual and may even be passed from generation to generation.

Bats are in decline both globally and nationally, mainly because their physical attributes, reproductive strategies and lifestyles make them particularly vulnerable to changes in their local environment. Bats are very dependent on available roost sites and feeding habitat, which are constantly under pressure by increased development as our population increases, and the use of insecticides on our food crops.

In 1994, 14 European countries signed the Agreement on the Conservation of Bats in Europe. The inclusion of bats within the Habitats Regulations and the new CRoW Act highlight our national commitment to their conservation, and their need for protection. In 1998, the Arboricultural Association published a Guidance Note: Trees and Bats, which provides some very useful information that every responsible arborist should be aware of.

The planning procedure set out in England and Wales (Planning Policy Guidance Note 9: Nature Conservation 1994 and Planning Guidance (Wales) Planning Policy 1996 - Planning Guidance (Wales) Technical Advice Note Nature Conservation and Planning 1996, respectively) covers areas where planning permission is required, such as proposed development or trees covered by Tree Protective Orders or Conservation Areas. These policy documents mean that an Arboricultural Officer should consider whether proposed work to protected trees may damage or disturb a bat roost.

Where planning permission is required for a new development, an assessment should be made of the likely disturbance to the local habitats that may be used by European Protected Species. Since March 2000, any development
that could affect such a habitat requires a license to derogate from the provisions of the Habitats Directive. Applications for these licenses are considered by the Secretary of State for the Department of Environment, Transport and the Regions (DERT).

If bats are found while undertaking work as part of the development (at any stage, and even if planning permission has been granted) – for example, if bats are found while felling trees to provide space for a housing development – work must be stopped and English Nature contacted for further advice. A license may be required from DERT before work may continue.

If there is roosting potential within a tree, then it should be made a requirement, as part of the consent, to complete a bat survey before any tree work is undertaken. Any survey work to monitor bat activity or possible roost sites should be completed under the supervision of a licensed bat worker. Where bats are present in a tree, or if the tree is a known roost, then consultation with the Statutory Nature Conservation Organisation (SNCO) must be undertaken prior to commencement of the proposed work.

An assessment of the potential a tree has to support bats should form a routine part of all tree survey work done before providing a work schedule or pruning specification. If certain features are identified, a closer inspection should be considered; it is important to remember that even unoccupied roosts are protected by law.

Bats may roost in any of the following:

- woodpecker holes
- rot holes (cavities)
- cracks or splits in branches or limbs
- hollow sections
- beneath loose bark
- within ivy
- in dense epicormic growth
- in bat or bird boxes

Bat roosts serve different purposes at different times of year, as a range of conditions are required for hibernation, mating and breeding. Other roosts fulfill such needs as overnight stops during summer feeding, and as gathering sites in spring. Roosts may contain few bats, or they may host several species and many individuals. A single bat may use as many as 30 different sites throughout just the summer months.

Signs of roosting bats may be indicated by:

- staining around a hole, this is caused by the natural oils in the bats’ fur;
- stains beneath a hole, this may be caused by bat urine;
- scratch marks around a hole, caused by bats’ claws;
- bat droppings beneath a hole (these resemble rodent droppings but crumble to dust when rubbed between finger and thumb);
- audible squeaking from within the hole, especially on hot days or at dusk;
- insects (especially flies) around a hole.

It should be considered that due to seasonal changes in roost sites, roosts in trees may be unoccupied for a large part of the year. A bat may use a roost for one night, a week, or several months, so inspection of a possible roost before felling a tree may need several visits. Inspecting trees for the presence of active roosts can be very difficult – even for an experienced bat worker – so always seek further help and advice if there is any doubt.

It is important to remember that bats can use some very small holes that may not be visible from the ground and that there may be no obvious signs of their occupation. It is useful to talk to local residents or the site manager to ask if bats have been seen in the area. If evidence of a roost is found or there is reliable testimony, then it will be necessary to contact the SNCO before any
synergy (sīn′ər jē), n., Combined action whose total effect is greater than the sum of the individual actions.

JOIN NAA . . .

. . . become stronger and more powerful by association.

www.nadarb.com

National Arborist Association
Dedicated to the Advancement of Commercial Tree Care Businesses

U.S. Office
3 Perimeter Road, Unit 1
Manchester, NH 03103
Phone 800-733-2622
(outside U.S.) 603-314-5380

European Office
110 Below Westgate
80 High Street, WINCHESTER
Hampshire, S023 9AT, UK
Phone +44 (0) 1794 512367

Please circle 45 on Reader Service Card
treework can be done. If no work is required, then the potential roost site should be reported to the local bat group so they can monitor its use.

When initially inspecting a tree, one must assess its potential benefits to the habitat of bats, and any recommended work should take account of these points. When surveying tree(s), consider the following:

- Where trees are designated for felling or clearance, look for possible roost sites and seek additional advice where necessary.
- Try to retain any tree used by bats; tree pruning work can prolong the useful life of a bat tree.
- Consider the minimum work required to make the tree safe.

If there is a safety issue, consider whether the target area can be moved.
- Consider felling as a last resort.
- Specify the potential to damage or disturb bats and their habitat in any contract.
- Consider the potential for improved habitat management.

Your client may not be aware of the often unseen positive attributes of the dead wood, cavities, or unusual shape of their tree, which may be, to them, just unsightly. By showing them what to look for, you may be able to give them a greater appreciation of the value an old tree may have, and save them some money in the process. This informative and caring attitude will improve your company image and create a talking point between your clients and their friends – your future clients.

When considering work to trees with potential for roosting bats, it is best to try and complete it between September to late October. This assumes that the young bats are weaned and independent, and is before hibernation. Mid-March to the end of April is also a suitable time, just after hibernation and before young are born. However, these times are very climate related and can vary from year to year. It is also important not to forget to take due account of nesting birds, which are also protected by law, and should not be disturbed between March and August.

Andrew Cowan is the owner of Tree Craft Ltd. in Westerham, United Kingdom. This article was first published in the July 2001 issue of Essential Arb. The magazine is aimed at professional arboricultural companies in the United Kingdom.
Safely treat trees in a fraction of the time!

ArborSystems can increase your productivity and profitability.

With the ArborSystems Injection System you inject chemicals directly into the cambial zone. With no drilling, no implants, and no waiting for translocation, you can complete a typical treatment in less than three minutes.

Plus, with no spraying or chemical mixing, ArborSystems is safer for workers, residents, and the environment. ArborSystems’ complete line of insecticides, fungicides, and micronutrients come in application-ready bottles and are priced to help you maximize profits.

New improved WedgeChek™ with Tight-Hold Barbs maximizes chemical retention.

For complete details, visit our website or call to receive a FREE CD-ROM.

Please circle 9 on Reader Service Card

Toll free: 1-800-698-4641
www.arborsystemsllc.com
As arborists, it can be easy to become so involved in the business of planting, pruning, fertilizing, and otherwise maintaining the health of the trees in our care that we forget to step back and appreciate their inherent beauty. When we take the time to admire the trees that we work with, we see a group of amazingly complex and stately organisms that provide us with innumerable benefits. But for every admiring arborist, there are thousands of critters that look at a tree and just see dinner.

Possibly the most common type of tree damage that the arborist is asked to control is that caused by leaf-feeding insects. From the undulating bulk of the cecropia moth to the practically microscopic lilac leafminer, there are certainly plenty of pests that list the leaves of trees and shrubs on their favorite food menu. Developing a plan for detecting, assessing and controlling the damage caused by leaf-feeding pests is essential to anyone who practices the art of tree care.

There are literally thousands of species of insects that feed on the leaves of trees, and unless the insect causing the damage is already known to you, simple identification can become a daunting task. Leaf-munching bugs hail from all corners of the insect world, and the list seems to grow every year as new pests are continually introduced to new locales. Investing in one or two good identification guides is a must for any arborist, but it helps to have a framework for categorizing the likely suspects into more manageable groups. The ability to distinguish between a sawfly larva and a moth caterpillar, for instance, can save a lot of time spent poring over identification books and helps limit the likelihood of misidentification.

While there are some leaf-eating pests—such as beetles—that feed on tree leaves as adults, in most cases it is the larvae that are responsible for the actual damage to the leaf. Identifying the larval stage of an insect can often be even more problematic than identifying the adult, so it is a good idea to keep a quality magnifying lens handy for quick field inspections. Carrying a small container of some kind is also helpful, since it may be necessary to collect a sample of the pest in question.

While not every species fits neatly into a specific group, there are some general rules for distinguishing between the major guilds of leaf-eating larvae. Two of the more difficult groups to differentiate are the sawfly larvae and the true caterpillars. The immature stage of moths and butterflies, true caterpillars are one of the largest and most destructive groups of leaf-eaters, with the gypsy moth caterpillar alone defoliating an estimated 500,000 acres annually. Sawflies are actually not flies at all, but rather a large and diverse group of wasps whose larvae can appear very similar to caterpillars.

True caterpillars come in all shapes, sizes and colors, but they do share a few common traits that the arborist can use to separate them from other types of larvae. In addition to the six true legs located on the thorax near its head, a typical caterpillar has a maximum of five additional pairs of stubby prolegs on its abdomen, each one ending in a crochet, or hook, that helps the insect hang onto leaves and branches. In addition, a true caterpillar generally has a small cluster of ocelli, or single-lens eyes, on either side of its head.

Unlike the caterpillars, leaf-eating sawfly larvae usually have six or more pairs of prolegs that lack crochets, and have relatively larger, single ocelli on either side of its head. Many sawfly species also tend to curl their abdomen while resting or feeding—a behavior not typically found in the caterpillars.

Beetle larvae appear in a wide variety of forms, but the leaf-feeding varieties are usually considerably smaller than most caterpillar and sawfly species and have a squatty, grub-like appearance. A few species of flies feed on tree leaves in their larval stages as well, usually as miners inside the leaf. They can easily be distinguished from the other leaf-eating insects by their obvious lack of
appendages and their overall maggot-like appearance.

Using these general guidelines, an arborist can quickly narrow his or her search criteria during identification. Using a hand lens, it may then be necessary to look at a variety of other features of the sample larva, such as mouth parts or other structures, to ensure that the species is accurately identified. Taking the time to properly identify the pest organism can save both money and aggravation, since different types of larva often require very different control strategies.

The nature of the damage done to the leaves can also help to identify the responsible pest. Leafminers, for instance, which spend their lives feeding within the tissue of the leaf, are divided into groups according to their feeding pattern. Other leaf feeders consume leaves in specific ways, such as chewing holes, eating margins, or skeletonizing leaf tissue. These behaviors can be immensely helpful in making a positive identification of the pest.

Once the pest has been properly identified, the next step is to evaluate the damage. Because trees are so resilient, a healthy individual can often tolerate quite a bit of leaf-munching without experiencing any serious health risks. Extensive or repeated defoliation can lead to reduced vigor, however, which increases the likelihood of attack by other pests or pathogens. Chronic defoliation over several seasons can even kill a tree.

Evaluating the health risks posed by the pests is the first step toward developing an effective control strategy, and there are a number of factors to consider when weighing these risks. Once the pest has been identified, researching its life cycle and behavior may offer clues regarding its potential for serious harm. Pests that have more than one generation per year or are known to occur in large numbers often cause the most damage. Leaf-eating insects that act as vectors for other diseases also pose a threat.

Examining the health risk should not be limited only to the tree or trees currently being affected. By investigating the preferred host species for the pest in question, the arborist can determine the organism’s potential for spread. Leaf-eating beetles and adult moths and sawflies can travel long distances to find a new host, and small caterpillars are capable of “ballooning” on silken threads for hundreds of feet—possibly landing on your client’s prized ornamental. A pest’s potential for spread should also be considered whenever leaves, limbs, or other debris are being removed. Proper disposal can mean the difference between long-term control and an even more widespread outbreak next season.

Always remember that stressed trees are at greater risk of experiencing serious health problems due to herbivory. By taking steps to alleviate or avoid stressors such as drought, soil compaction and construction damage, the arborist can greatly reduce the likelihood of permanent damage caused by leaf-eating insects.

It is also important to keep in mind that the needs of the client often include more than simply evaluating the health risk to the tree; aesthetics are of key importance as well. The homeowner is often just as concerned about excessive caterpillar frass on the deck as he or she is about the potential for limb dieback. For this reason, it may be necessary to consider control measures for pest populations that pose no significant threat to the health of the tree. Some important aesthetic factors to consider are leaf curling, galls, leaf miner damage and premature leaf drop. These factors rarely constitute a serious health risk, but can be a serious problem in the eyes of the client.

In addition to aesthetic considerations, many pests also have considerable “nuisance potential.” Some leaf-eating insects enter homes in search of overwintering sites, while others have hairs that can irritate the skin or cause allergic reactions. Others create unsightly silken nests or litter the ground with frass or sticky honeydew. These nuisance factors are often of significant concern to the homeowner, and should always be taken into consideration when developing a control plan.

Once the various factors have been weighed, a decision must be made regarding a control method. If the pest is not a real health risk for the tree, and aesthetic issues and nuisance potential are low, the best decision may simply be to do nothing. Choosing to apply pesticides or other control measures when
there is not a clear need is a waste of time and money and can erode your credibility as an arborist. Be sure, however, that you clearly explain your reasoning to a client whenever you choose to “let nature take its course.” This helps to avoid any misunderstandings and shows the clients that you have their best interests at heart when you elect to avoid a treatment because it is unnecessary or ineffective.

If the decision is made that some type of control measures are warranted, however, the next step is to research the life cycle and behavior of the pest. A solid understanding of the organism being dealt with helps the arborist determine the most efficient and cost-effective approach. By determining the number of generations, the development time, and the method of feeding, a comprehensive control plan can be developed that both gets rid of existing pests and helps to prevent future outbreaks. As always, timing is key to achieving effective control, and very often there is only a short window of time during a pest’s life cycle when it is highly susceptible to sprays or other control techniques.

There are as many different control techniques as there are pests, making a detailed examination of control methods beyond the scope of this article. The importance of knowing the pest to be controlled cannot be stressed enough, however, and it is always a good idea to weigh each possible control technique based on the specific pest involved and the environmental conditions of the area. If overspray is a potential problem, trunk banding or systemic insecticides may be a better choice. Likewise, if pesticide residues could pose a threat to people or animals, selective pruning or insecticidal soaps may be the answer. Whatever control method is to be used, it is important that it is used in the right amount at the right time, which can only be determined by careful examination of the treatment area and a solid understanding of the pest to be controlled.

Leaf-feeding insects may be the most common and most diverse group of pests that the arborist faces, but if you arm yourself with the right knowledge and a carefully developed control plan, you should be able to prevent the trees in your care from becoming “salad on a stick.”

David Munson is a certified arborist, freelance writer, and biology teacher. TCI
PLEASE,
WHEN TREATING FOR
LEAF CHEWING INSECTS WITH
MAUGET'S PROVEN PRODUCTS,
WEAR A HAT!

It has long been known that as a result of the FAST ACTION of Mauget Micro-injection controls, leaf feeding insects may actually start to fall as you are applying MAUGET insecticides. SO, WHEN CONTROL TIME IS IMPORTANT TO YOU, DON'T WASTE ANY.

Safe to beneficials
THE ENVIRONMENT
NO HIGH PRESSURE TISSUE DAMAGE ..
NO SPRAY'S .. NO DRIFT ..
WEATHER PROOF .. COST EFFECTIVE ..
TARGETED CLOSED SYSTEM ..

THIS SEASON
THINK DIFFERENTLY
ABOUT TREE INSECT CONTROL

www.mauget.com

Mauget
800-TREES Rx
877-TREE HLP
(800-873-5778)
(877-873-3457)
(Toll free technical support Line)
Part One

Our impressions of the "real world" often begin somewhere around age 25, when we've finished school, settled down in marriage, maybe with a kid or two, and begun work in our chosen career. We've finally slowed down and matured enough to take a serious look at the world around us. Most assume that what we see is the way things should be and have always been. It becomes our base year. Then, when we see a few trees being cleared off to build a new house or a once-beautiful farm subdivided to build several houses and a shopping center, it sounds reasonable to assume that urban sprawl is really fouling our environment, making all our trees disappear.

However, often what sounds reasonable in the light of emotion or ignorance is not at all reasonable when the light of facts shines on the topic. In hopes that you'll learn the facts about the resource we work most with—trees, let's take a look at the history of our eastern forests. It has certainly been a history of abuse, use and rejuvenation.

Tremendous natural cycles of global cooling and global warming resulted in incredibly thick sheets of ice covering much of our continent at least five times, each time dramatically altering the complex floral and faunal systems of the land. After the most recent glacier retreated on North America some 11,000 years ago, a gigantic, providing, absorbing, softening, green carpet of trees advanced northward. They covered the continent from the Atlantic Ocean past the Mississippi River to the Great Plains, where prairie grasses and wildflowers...
flourished buffalo-belly high as far as the eye could see. Further west were more forests, deserts, and then 500 additional miles of forests covering the Rocky Mountains, The Great Basin, the Cascade Mountains, to the Pacific Ocean. Forests once blanketed an estimated 1.2 billion acres (or slightly over 50 percent) of what would become the United States. East of the Mississippi River, forest cover approached 95 percent.

According to the May 4, 1914, edition of the Cincinnati Times-Star, "Old Davey McFarlan, shortly before his death, remarked that his farm was a good one when he first took it up, but that since he had cleared off all the trees, it had slid down the creek and was to be found somewhere in the neighborhood of New Orleans. For a number of years, old Davey's farm remained a horrible example of the results of deforestation. Washes and gullies were everywhere."

So it was with 80 percent of McFarlan Woods and the rest of the 1,500 now beautiful, tree-covered acres comprising Cincinnati's largest park, Mount Airy Forest. And so it was with Hamilton County's 265,152 acres that had been 100 percent forested for thousands of years. A study compiled in 1995 by the Hamilton County Soil and Water Conservation District for its 50th anniversary shows that in 1950, numerous family farms flourished on 121,500 acres; urban land spread over 120,000 acres; and forest cover had been cleared by this "progress" to only 19,550 acres, a mere 7 percent of our county.

In 1950, the Ohio DNR reported that there were no deer, turkey, fox, coyote or beaver left in Hamilton County. However, the SWCD study also shows that by 1992, family farms had shrunk to only a handful on 28,300 acres while urban areas had sprawled to 190,000 acres and forests had grown to 40,820 acres, thus shading 15 percent of the county. In other words, over the past 50 years while we were building 161,000 new homes in Hamilton County, our forest cover more than doubled — and we now again have deer, turkey, fox, coyote and beaver all over the place. Last summer, in a very busy neighborhood business district, a deer ran across Glenway Ave. at high noon and crashed through the front window of Price Hill Chili, scattering chili dogs and diners, almost wrecking the place, before breaking out the back door! So much for the emotional myth that urban sprawl always harms the environment.

Our state of Ohio shows the same trends. When pioneers first flat-boat down the beautiful Ohio River from Pennsylvania to settle towns such as Marietta, Portsmouth, and (in December 1778) Cincinnati, 95 percent of Ohio's 26,228,500 acres was covered by dense, mostly mature forests, as it had been since the last glacier retreated. A squirrel could have scampered from Lake Erie to the Ohio River without touching the ground! Not now. According to Dr. Rob-
ert B. Gordon of the Ohio Biological Survey. by 1903 this magnificent hard-wood forest was reduced to only 6 percent of Ohio’s land area. Fueled by fear, determination and elbow grease, we clear-cut the Buckeye State with axes and oxen, crosscut saws and mules, well before 1926 when Mr. Stihl invented his chain saw. However, even though urban areas have sprawled over Ohio, forestland now enhances slightly more than 33 percent of our state and promises to keep growing.

Our land east of the Mississippi River shares much the same history. When the Pilgrims traveled to the shores of what would become the United States only four centuries ago, they had no idea that they were looking at just the thin edge of an almost continuous forest 1,500 miles deep. That same squirrel could have traveled from the Atlantic Ocean to the Mississippi River entirely via treetops. That would be very difficult to do today. Our eastern forests, once covering 95 percent of the land and containing twice the amount of wood per acre than they do now, had virtually disappeared by the early 1900s. But, forests are resilient. Despite our continuous harvesting of timber, forests are now recovering and shade 53 percent of the east. One of the latest forest inventories also shows that trees now cover 745 million acres, or over 33 percent, of the entire United States, up from a low of 464 million acres or 20.5 percent in 1920. These facts are derived by statistically accurate surveys done every 10 years by the U.S. Forest Service in each state with the assistance of the state forestry programs.

Aldo Leopold wrote in his Sand County Almanac that, “Wilderness is the raw material out of which Man has hammered the artifact called civilization.” Did we ever hammer! The Pilgrims launched a battle against the primeval forest: burning and girdling, harvesting and consuming, tearing out and plowing under until our forests were virtually destroyed in several waves crashing from east to west. Far many more trees were cut, piled and burned than were used for anything. Between 1850 and 1910 American farmers cleared more land for crops and pastures than had been cleared during the previous 250 years, around 190 million acres or 13.5 square miles per day for 60 years! The constant use of John Deere’s specially designed plow waged an even more successful battle against our forests. Even though he saw only the beginning of the destruction, George Washington said, “Our lands were originally very good, but use and abuse have made them quite otherwise.”

We cut trees to build our houses, fire hearths and cook food. They were used and sold for products. The first forest product exported from this land was a miracle medicine from the new world, sassafras bark and roots, gathered in 1603 along the coast of Maine and Massachusetts then sold in Europe. Since then, all of our eastern forests have been cut over, many several times. A line from John Denver’s popular song “Take Me Home Country Roads” accurately states that in West Virginia, “Life is old there, older than the trees.” Cut-and-get-out timber barons sawed huge swathes, ever moving their mills westward into what they thought were inexhaustible forests until the Pacific Ocean stopped them and forced them to plant trees to stay in business. Farmers hacked out farms and built split-rail fences. By 1850, wood still satisfied 90 percent of our country’s energy needs (then, coal dug from wood-supported mines took over). Fuel suppliers
cut wood to fire the boilers of industry, stationary engines, steamboats and railroads. The banks and hills of the Mississippi and Ohio Rivers were mostly treeless and eroded due to the need to keep the wood yards filled.

The thousands of paddlewheel steamboats working the rivers were mostly made of wood and, prior to the Civil War, each consumed between 50 and 80 cords of wood per day. In 1840, almost 900,000 cords of wood were sold to fuel steamboats, accounting for one-fifth of the fuel-wood sold that year. When the captain wanted dryer wood than the yard could sell, he'd stop at night and send the deck hands out to steal some farmer's split-rail fence. No problem finding some since the 1850 census showed that there were 3.2 million miles of it - enough to go around the earth 120 times (the 1883 Iowa Farm Report put the figure then at 6.3 million miles!). Today, passengers cruising on the Mississippi and Ohio Rivers on the Delta Queen steamboat can be confident that virtually none of the trees they see from the decks existed much before 1930.

Shipbuilding - from the flatboats to keelboats to canal boats to paddlewheelers to ocean-going military and merchant ships - was a major industrial wood-using enterprise for many years. Our eastern forests supplied the finest oak beams, keels, and planks, while the pine forests of New England and the South provided the tallest and straightest masts. Launched in 1797, the recently restored and still commissioned U.S.S. Constitution, Old Ironsides, is this industry's finest example. Large tracts of the best white pines in New England and live oaks in the South were officially reserved for use by the British Navy, and after the Revolution of 1776, by our Navy. In our longleaf and slash pine forests that grow mostly in southern Georgia and northern Florida, naval stores workers are still chipping faces with their hacks, hanging gutters and cups, dipping gum, then distilling out turpentine and rosins in 13 grades of decreasing clarity and value.

Those forests not eliminated for farms and towns or logged for products and fuel were destroyed by wildfires 40 years either side of 1900. Because of the excellent coverage in Harper's Weekly and various newspapers, most people know something about the Great Chicago Fire that consumed 600 acres and 1,700 mostly wooden buildings of the central business district while killing 250 people. Did Mrs. O'Leary's cow actually kick over a lantern on Sunday, Oct. 8, 1871? Read all about it in almost any American history book or encyclopedia under Fires, Disasters or Chicago. Cities are not supposed to burn, thus, we still observe National Fire Prevention Week in early October each year.

However, most people do not know that on the same day, Sunday, Oct. 8, 1871, the Peshtigo Fire was started in the woods near Peshtigo, Wisc., a logging community near Green Bay. A prolonged summer drought coupled with 15 percent humidity and 35 mph winds caused the woods to explode. After it burned itself out several days later well into Michigan, the Peshtigo Fire had consumed 3.5 million acres, 25 towns, and an undetermined number of farms, while killing more than 2,000 people. Families who had sought refuge in their wells to escape the conflagration were found boiled to death. Even though Peshtigo,
not Chicago, was the worst disaster our country ever experienced, not much is written about it. It was just a forest fire. Woods burned routinely.

Not much is written about most forest fires. In 1881, 1 million acres burned in Michigan, killing 138 people. In 1894, the Hinkley Fire destroyed 160,000 acres in Minnesota, killing 418 (168 more than died in Chicago). The Columbia Fire of 1902 consumed 604,000 acres in Oregon and Washington, killing 18. And so it goes with the Adirondack Fire of 1903, the Chisholm Fire of 1908, and the Great Idaho Fire of 1910, which alone consumed 2 million acres and 85 people. The Cloquet Fire of 1918 killed 400 people and left in ashes Cloquet, Minn., a thriving town of 12,000. As late as 1947, the Maine Fires, while consuming 240,000 acres and 16 people, incinerated hospitals, schools, churches, homes, farms, and businesses.

It might be interesting to note that death tolls for most of these wildfires would have been higher had dead Indians been counted! These were just a few of our nation's many conflagrations (read "Burning An Empire" by Stewart Holbrook). Most were started by man. No wonder every conservationist found Smokey Bear mandatory when his campaign, "Remember! Only YOU Can Prevent Forest Fires" began in 1945.

Trees we did not eliminate by felling or burning were destroyed by introduced insects and diseases such as chestnut blight. American chestnut, once the most magnificent tree of our eastern forests, contributed one-quarter of the hardwood timber volume in its native range, extending from Maine to Georgia and west to the Mississippi River. Chestnut trees in North Carolina towered to 120 feet with trunk diameters commonly to 7 feet and some to 12 feet. A few early sawmills occasionally recorded purchasing logs 18 feet in diameter! For comparison, consider that the General Sherman giant sequoia in California, the largest tree in the world, has a trunk diameter of 24 feet. The sole economic existence of many communities revolved around this one species; chestnut bark was rendered for tannic acid to tan leather; the rot resistant wood was sawed into many products, such as building materials, rail fences, fuel, and railroad ties. Billions of its sweet nuts were gathered for human consumption and to fatten hogs. As the chestnut died, so did many communities along with a significant part of our natural history.

In 1904, while the world was partying in St. Louis's Forest Park at the Louisiana Purchase Exposition and enjoying ice cream cones, hotdogs, and Scott Joplin's Cascades Rag, the official World's Fair song, a fungus disease quietly arrived in this country on a shipment of imported Oriental chestnut seedlings. Chestnut blight was first observed in New York City's Bronx Zoo. During the next 40 years, the bark disease rendered American chestnuts virtually extinct. There are still fruitless stump sprouts that reach 8 inches in diameter before dying of the disease. Think of chestnut blight as a cancer in our forests when compared to the relatively minor cold called Dutch elm disease that draws far more attention and research dollars because it kills mostly city trees.

Our forefathers could clearly see that in their lifetimes of around 60 years, many lands went from 80 percent to less than 10 percent forested. They realized that this massive, rapid destruction of habitat, in addition to unrestricted hunting for food, fur and feathers, also had a devastating effect on wildlife. Some of our wildlife is just starting to come back thanks to habitat restoration and the new science of wildlife management.

Although settling and building our nation did not tear up the land as badly as did the glaciers, we still did a pretty memorable job by reducing our eastern forest cover from 95 percent to 20 percent. Most important, however, is the marvelous conservation work we've done since the late 1800s to help rectify our mistakes and how well the land and trees have responded. This will be the topic of next month's article.
PetzlAmerica has the equipment you need in your fight against gravity. Our dedication to innovation, quality and strength have made us a world leader in rescue & rope access. Call to find an arborist dealer near you.

ENGINEERED FROM EXPERIENCE

GRILLO
- adjustable flip line for work positioning
- rope can be released under body weight
- fitted with sliding protective sleeve
- available in 6, 9 and 16 foot lengths

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

NAVAHO VARIO & V2 BOD
- lightweight and comfortable
- easy to don with patented double back buckles
- forged steel work-positioning side D-rings
- V2 BOD ANSI rated

AM'D BALL LOCK
- auto locking carabiner
- 6300 lb (28kN) breaking strength
- strong and versatile

Petzl America (801) 327-3805 www.petzl.com
Please circle 46 on Reader Service Card
As part of dielectric testing, Cliff Hughes (right) at CUES, Inc., in Amherst, N.H., attaches a lead to the bucket; the other end of the lead connects to a transformer and then to a tester (above), which will output up to 100,000 kV. This portion of the dielectric test determines whether electricity will pass between the bucket and the knuckle of the boom. All dielectric testing is done in the safety of a specially equipped garage.

Proper maintenance of bucket trucks is vital for the health and safety of tree care professionals. A boom truck should drive down the road properly like any vehicle, but it must also safely lift its operator in the air and protect him dielectrically. Anything that is dielectric means that it cannot conduct electricity, or that there is negligible conductivity. Tree service workers are not supposed to work within 10 feet of power lines unless the workers have received training specifically for electrical hazards. However, in just about every treeworker’s career, sooner or later he or she is going to be near a powerline. That is why it is important for everyone to have at least a basic understanding of how electricity moves and its relationship to bucket trucks.

Simple things – such as not cleaning a boom regularly – can compromise a bucket truck’s insulating properties. Here’s why:

Electricity moves through an object in three ways: conduction (electrons moving through a material); leakage (electrons moving across the surface of a material); and arcing (electrons moving through the air between materials). Therefore, if a boom is insulated but covered in grease and dirt, electricity can move across a boom’s surface via “leakage” and make the bucket’s occupant part
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. It will help your crews work smarter and more efficiently. This unit combines 65 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.
of the circuit. A bird on a wire is a good analogy here. A bird can sit on a live wire and not be electrocuted because it is not part of the ground. In the same reasoning, if you fell out of a helicopter and grabbed a powerline on your way down, you would be fine. If you let go and dropped to the ground, again, you would not be electrocuted. However, if you were to shimmy across that power line and grab onto the pole, you would get fried because you have connected yourself from the power source to the ground.

Bucket trucks need to be constructed, maintained and operated so that they “isolate” the operator from the ground.

Maintenance

Boom trucks need daily, weekly, semi-
annual, and annual inspections. Each inspection covers different aspects relating to the long-term maintenance of the truck. The annual and semi-annual inspections are more thorough and must be performed by a qualified mechanic.

When CUES, Inc., an Amherst, N.H.-based sales and service company of arborist trucks, does its inspections, employees use a 100-point checklist. Then they go to the bucket truck’s owner’s manual to see if there are any special instructions required by the manufacturer. As part of their inspection, they hook a 100,000 kV electric source to the boom tip and dielectrically check the machine for leakage coming down the boom, through the truck and into the ground.

“We’ve been in this business a long time and you can’t take it lightly,” stresses Dave Dube, vice president of operations for CUES. “If you make a mistake the results can be terrible. You have to have the machine serviced regu-
larly. You have to read the owner’s manual and familiarize yourself with the machine. You have to do the daily and weekly inspections and if there is anything unusual, have it checked immediately. Follow the manufacturer’s guidelines and safety operations. At a bare minimum, have the machine inspected and dielectric tested annually, but preferably semi-annually."

The daily and weekly inspections performed by the operator should include looking for (at the very least) oil leaks, tire pressure, outrigger drift, fiberglass condition, properly working controls, hydraulic hoses and tools, and location of the owner’s manual (which should be in the truck). Be sure also to periodically check the pins at the flex points on the boom. Some service companies make pin inspection a special part of their annual procedures.

The purpose of all inspections is to find potential problems. Look for nicks and cuts. If the boom is found dirty, then it must be cleaned. Simple household detergents clean the boom effectively while keeping the gel coating intact. Common degreasers and solvents do not. They can harm the protective gel coating of the boom. Look also for cracks or damage to the boom, especially where it attaches to the bucket. If damage is found, report it to a qualified maintenance person.

During the monthly inspections, clean the boom. As stated above, simple household detergents are fine, as is car wash soap. You don’t have to re wax unless the surface is losing its glossy coating. The glossy surface is necessary to repel rain and mist. For hard-to-remove stains, do not use abrasive pads, as they will scratch the boom’s surface. (Remember, electrical leakage occurs across an energized surface. A scratched boom touching a power line falls into this category.) Instead, use a product such as a B-1 wipe or BWC-128 Wash concentrate from American Polywater Corp. The B-1 wipes are particularly handy because they can be kept in the truck and used when a crew has some down time.

“One of the real problems tree trimmers have is cleaning the sap that accumulates on the boom or bucket,” notes Craig Keoun, president of Plastic Composite Corp. and distributor of American Polywater products. “These wipes work extremely well for cleaning the boom.”

If the boom has lost its glossy surface, you should re wax it. American Polywater has a fiberglass wax and buff kit to increase the boom’s insulation life. Check with the manufacturer of your lift to see if there are brand-specific.

In addition, check the internal area of the boom. If it is dirty, clean it out with a pressure washer. A boom filled with dirt can transfer power by conduction. Also, be sure to drain the bucket after working in the rain. It is a hassle, and there is no magic to getting the water out (unless you use a bucket liner), but safety outweighs convenience. Use pails, rags, and sponges.

The upper boom is dielectrically protected but the boom tip, where the bucket is located, is not. The tip has controls, hoses, hydraulic fittings, and sometimes a bucket rotator that all prevent dielectric capabilities. Installing a bucket liner will help protect the operator but will not
guarantee prevention of electric shock due to all the other non-insulated parts near the operator. If you have a liner, OSHA requires that it be dielectrically tested as well. If you do not, the bucket itself does not have to be tested. This may seem odd, but OSHA feels that if you use a liner, you are making the statement to the operator that the bucket is safe, and therefore it must be tested.

The dielectric test

So what is a dielectric test and how is it done? According to Fred Von Herrmann, president of the Von Corp., a manufacturer of dielectric equipment in Birmingham, Ala., a dielectric test is done to make sure all the insulated areas of a bucket truck do not conduct electricity. A qualified mechanic first ties all the metal together in a bucket with a jumper. Next, he attaches the jumper to high voltage and tests the upper boom to the knuckle. He then does a second test on the lower boom. This way the mechanic can isolate problems. A dielectric test can be on AC or DC current, but Von Herrmann prefers the DC test, claiming it is simpler, gives more accurate readouts, and is safer for the mechanics.

Von Herrmann is chairman of the ANSI A92.2 committee establishing guidelines for bucket trucks. He notes several important pieces of often-overlooked information. He states that the most common fatality is not to the guy in the bucket but to the groundperson. That is because the person in the bucket is more aware of the power lines. If there is boom contact, he is protected in the bucket. If the truck becomes energized, the man on the ground often doesn’t notice and can be electrocuted if he touches the truck. Fortunately, this doesn’t happen too often.

Von Herrmann observes that the most frequent mistake he sees is bucket truck operators breaking a hydraulic hose and then replacing it with the wrong type. All hoses below the bucket are required to be insulated (usually orange, not black, with markings that it is insulated). When a hose breaks and is incorrectly replaced with a metal braided hose instead of a fiberglass braided one, the boom might be able to conduct electricity, endangering those working in and around it. ANSI requires that replacement hoses be insulated and that the boom is dielectrically tested before it is used again.

Another very experienced company is MAT-3, a manufacturer of bucket trucks in Ixonia, Wis. Tom Biddle, one of the sales representatives at MAT-3, stresses the importance of a common-sense approach to bucket truck maintenance. He notes that the fiberglass upper boom protects the worker in the bucket, and the lower boom is made of metal for strength but has a fiberglass insert that protects the person on the ground from electrocution if the lower boom touches a line.

Then again, Biddle stresses, most tree care workers realize the fiberglass insert is never a sure thing. “As far as a lot of us old-timers in the industry are concerned, the lower boom gives a false sense of security to the groundpersons. If the boom is in the air, you just don’t touch the truck.” Something as simple as chain saw dust across the insert could make an electrical connection, which would then energize the truck. For this reason, if the boom is in the air and you are in the truck cab and need to get out, jump off the truck – don’t step off. If you avoid touching the ground and the truck at the same time, you will fail to complete the circuit, and can keep from getting electrocuted.

Like the people at CUES, the people at MAT-3 feel the most important aspect to boom truck maintenance is following the manufacturer’s guidelines and common sense. If you are in the market for a used bucket truck, you must be sure the boom itself can pass inspection before you buy it. Both of these companies related stories of tree workers who brought in newly purchased used bucket trucks to be inspected. The trucks were fine, but the boom did not pass inspection, and when the owners found out that a $40,000 used truck needed a new $30,000 boom, they were crushed.

“I’ve seen some real rattle traps out there that are a violation of common sense,” warns Biddle. To that end, MAT-3 does a complete inspection of all bucket trucks and makes recommendations to the owners; if the owner will not follow suggestions, MAT-3 won’t fix the truck. Then, says Biddle, “We like to tell their wives to make sure their husbands have lots of life insurance. That way, at least they are rich widows.”

When it comes to bucket truck maintenance, safe operation means continual inspection and vigilance. Perform the required inspections, read the ANSI standards, learn the OSHA regulations, and know what the owner’s manual says. It’s a good common sense approach that will lead to many years of safe operation.

Michael Roche is a certified arborist and owner of Stowe Tree & Landscape in Stowe, Vt.
<table>
<thead>
<tr>
<th>Model</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1990 INTERNATIONAL 4900 BUCKET</strong></td>
<td>DT466 TURBO DIESEL, ALLISON AUTOMATIC TRANSMISSION, 55 FT. OVER CENTER BUCKET, 12 FT. CHIP BODY, UNDER 65,000 ORIGINAL MILES, GOVERNMENT OWNED AND MAINTAINED</td>
</tr>
<tr>
<td><strong>1995 TOPKICK FORESTRY TRUCKS</strong></td>
<td>3116 CAT TURBO DIESEL, AUTOMATIC TRANSMISSION, 25,950 GVW, NO CDL REQUIRED, AC, PS, HYDRAULIC BRAKES, WILL INSTALL NEW DUMP HOIST, FORESTRY BODY AND PAINT YOUR COLOR</td>
</tr>
<tr>
<td><strong>$26,900</strong></td>
<td></td>
</tr>
<tr>
<td><strong>1990 INTERNATIONAL CHIP TRUCKS</strong></td>
<td>DT466 TURBO DIESEL, AUTO OR MANUAL, UNDER OR OVER CDL, BODY CUSTOM BUILT TO YOUR SPECS</td>
</tr>
<tr>
<td><strong>$28,900</strong></td>
<td></td>
</tr>
<tr>
<td><strong>1995 FL60 CHIP TRUCK</strong></td>
<td>CUMMINS TURBO DIESEL, 6 SPEED TRANSMISSION, 25,500 GVW, NO CDL REQUIRED! NEW BODY PAINTED YOUR COLOR</td>
</tr>
<tr>
<td><strong>$27,900</strong></td>
<td></td>
</tr>
<tr>
<td><strong>1998 INTL 4900 BUCKET TRUCK</strong></td>
<td>DT466 TURBO DIESEL, 6L 1 TRANS, 33,000 GVW, 99 AERIAL LIFT OF CT, 65&quot; REAR MOUNT BUCKET, UNDER 7,500 ORIGINAL MILES.</td>
</tr>
<tr>
<td><strong>$28,900</strong></td>
<td></td>
</tr>
<tr>
<td><strong>1997 GMC T6500 LO PRO'S</strong></td>
<td>3116 CAT TURBO DIESEL ENGINE, AUTOMATIC TRANSMISSION, 23,900 GVW, NO CDL REQUIRED!, WITH NEW 14 FT. ROYAL FORESTRY BODIES &amp; HOIST</td>
</tr>
<tr>
<td><strong>1995 TOPKICK LO PRO DUMP STAKES</strong></td>
<td>3116 CAT TURBO DIESEL, AUTOMATIC, 22,000 GVW, NO CDL, NEW DUMP STAKE &amp; 16 TON HOIST</td>
</tr>
<tr>
<td><strong>$28,900</strong></td>
<td></td>
</tr>
<tr>
<td><strong>1998 FORD F700 CHIP TRUCKS</strong></td>
<td>7.0 V8, AUTOMATIC TRANSMISSION, 25,950 GVW, NO CDL REQUIRED, LOW MILES, WILL INSTALL FORESTRY BODY AND PAINT YOUR COLOR</td>
</tr>
</tbody>
</table>
Words of Wisdom from the “Old School” Have a Special Meaning Today

By Marshall Adams

“I have probably not taught my son well in the ‘new school,’ but he is just 21, there is time. He has climbed for seven years in our family-owned business, and we have never started a day without prayer, asking for wisdom and safety for the men and the property where we work. I wish I had sought wisdom when I was a young man, but I didn’t – and that’s ok. I have shared many stories through the smoke of a campfire somewhere in elk season, of numerous injuries during my time as a young timber faller.”

I would like to thank Todd Kramer for his “From the Field” article in the February 2002 issue of TCI.

I am from the “old school.” My career in climbing began in 1969, and I am still doing it. I am 52 this year. I will say that one of the greatest advantages to “the harness full of gear” and “the fancy stuff” Todd mentioned is safety. There are fewer accidents today than when the legendary spar-pole climbers began, and I will give that credit to men like Todd.

Men who started the “old way,” yet had wisdom to appreciate the safety and ease of climbing that comes with a new line of tools.

We are in an industry where the best learning comes from great teachers. There are books on the subject, and I should write one myself, or possibly Todd Kramer and I should co-author one, but in this industry the best learning comes from good men “on the job.” That man in my life was Mart Adams, and this article is not in time to say thank you, but surely I must have said that along the way. I hope I did. Is there someone you should go to and say, “Thank you for taking the time to teach me.” Be sure you do that while you can.

Mart Adams was my uncle. He was about 5-foot-7, carried 240 pounds of solid muscle, never wore his teeth, and drank too much. With that said, I will add that he was the finest climber from the “old school” I have ever known. He taught me that a hard day’s work could be more rewarding than almost any other thing, and he taught me to respect the trees that I work in. Mart had a stroke in a tree when he was 62, and I wasn’t with him that day. He hung in the tree for four hours before someone noticed and called for help. Within six months he was climbing again, not the same man he used to be, and within another year I was standing at a small cemetery speaking about a man, known by few, who was foundational – yes, legendary – in what is now a fourth-generation family business. I wish I would have shared my faith with him, but I never did, and that’s another story.

I have refrained from handing his most common phrases to my son, but there is one I have built this business around: “They are all just trees. The higher you go, the easier they are to work on.” The skills I learned from Mart are priceless and will be handed down through generations. His gear is priceless, yet only in memory of the man who wore it. His leather belt is a full quarter inch thick and 8 inches wide. It has a double D-ring on each side, is roughly cut, with two large brass buckles, and two snaps at each side. There are well worn heavy leather loops riveted to the back side, one specifically for his topping ax, and one he would hang the saw from. On this belt, Mart carried the second chain saw ever seen in the Southwest Washington logging community. It was built by a man named Everett Craig, copied from “a real one” that Everett had seen, and it weighed 130 pounds. The bar was “at least” 4 feet long, according to my uncle, Fred Adams, and of course the saw was gear driven and the bar swiveled to keep the engine upright. Mart was actually Fred’s uncle.

Fred tells of a man named Earl Holmes who reached out to steady the end of that bar one day, and lost two fingers. “He was only used to the cross-cut saws.” As Fred and I discussed this article, he said
to me, “Mart took the stinger off the end off that saw, and carried it up several trees.” I cannot resist asking this question, “Can you imagine carrying a 130 pound saw up a loose barked Doug-fir, and then holding it upright to start it?” Mart told me personally of times “when there was no one to run the donkey, I carried the saw on my belt.” Most of his trees were topped between 100 feet and 120 feet.

Mart’s spurs are cherished in my collection. They are deeply worn from calk boots, and the 240 pound man who wore those boots. From the story above you know there was 370 pounds, counting man and saw, standing in the spurs. Add to that weight the pass-line he took up, and the block with “steel” strap. When the top left that tree, there was a brief moment of adrenaline as the “spar” swung wildly and the climber looked down to see “if she would hold together.” Mart had climbed trees with big conks all the way up when there was no other tree available to rig. We are talking about a group of men who shared an unknown bond with the first fighter pilots: “They never knew for sure if they were coming back.”

Mart was called from Vancouver, Wash., to the western coast for his talent and sheer determination in rigging spar trees. To quote him once again, “There is no tree I won’t climb. I’ve kicked the cars of lots of ‘em on the way up.” How many of us have stood face to face with a loose-barked Douglas fir in the bigger-than-6-foot class, with pini conks showing bigger than saucers, and said, “There is no tree I won’t climb”? If you have been there, you are a good man, and probably from the old school. I am 52 this year, and if I may say it, the Lord has blessed me. I am still climbing the “Big Firs.”

Not to rig as spar trees, but where men in other professions have not acted wisely and built beneath canopies of the great firs. The book Diseases Of Forest And Shade Trees Of The United States, handbook number 386, page 407, describes the Douglas fir like this: “The coast form can grow to heights of 300 feet, diameters of 17 feet, and ages up to 1,000 years, running second in size to the Sequoias.”

I have created wildlife snags for 16 years in the state of Washington, and almost without exception they are Douglas fir. When my son made his first snag, I went up with him and stood there, with my rope under his rope, looking into his eyes as the heavy crown pushed us back, and then back further. He was 15 years old. It’s hard for two men to stand directly behind the tree, so we swayed, on the sides of that tree, and I saw the look in his eyes that you will understand if you are subscribing to Tree Care Industry. He passed the test that day. (You will not find articles or agencies recommending that you start your son at that age, and neither am I recommending that. It is simply how it has been in our family for four generations.)

I have probably not taught my son well in the “new school,” but he is just 21, there is time. He has climbed for seven years in our family-owned business, and we have never started a day without prayer, asking for wisdom and safety for the men and the property where we work. I wish I had sought wisdom when I was a young man, but I didn’t — and that’s ok. I have shared many stories through the smoke of a campfire somewhere in elk season, of numerous injuries during my time as a young timber faller.

My message to a young climber, however, is safety first, and know that we represent more than ourselves, or just one day. We are a team. We are often judged by others who love trees, and my hat is off to them, but all too often dendrology has not been part of their studies. I encourage you to pursue the study of trees. If you are a groundsmen, with the least seniority where you work, study trees; pick up the language. In Washington state alone, 35,000 acres are converted annually from wild lands bearing climax vegetation to housing. We stand in the gap. We can teach people how to live with trees.

Marshall and Flora Adams are the owners of Habitat Development Corp. in Woodland, Wash.
HELP WANTED

North Valley Tree Service
Northern California's Premier Tree Co. is seeking experienced (certified) foremen, sales, and all other tree care positions. We offer great pay, benefits, and a retirement plan. Will help with moving costs. (530) 893-9649 or fax (530) 893-9650.

Tree Care Professionals Wanted
Our growing company located in Fairfield County, CT, needs experienced climbers, bucket operators, and spray technicians. Safety, customer communication, and service are our highest priority. Full-time, year-round employment with advancement opportunities. Excellent wage and benefit package. Fax or mail resume to Bruce S. Pauley Tree Care, Inc., PO Box 878, New Canaan, CT 06840. Fax: (203) 966-6796 or call for interview at (203) 966-0869.

Sales Arborist
Fast-growing Central/Northern New Jersey company looking for self-motivated and experienced representative for high-end residential and corporate sales position. Competitive compensation and benefit package with growth opportunity. Fax resume to (908) 668-7575 or call Pat (908) 413-1002.

Ira Wickes/Arborists.
Rockland County-based firm since 1929 seeks qualified individuals with experience. Arborists/Sales Reps, Office Staff, Crew Leaders, Climbers, Spray Techs (IPM, PHC, Lawn). Great benefit 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.

The Good Rigging Control System
is the only ratcheting lowering device featuring true one man operation.

- The 2 speed, self-tailing winch allows a single groundman to lift, lower and lock off tremendous loads quickly, safely and without knots.
- Patented mounting system makes jobsite setup quick and easy.
- Advanced fail-safe system ensures tangle free operation.

- Raise limbs and logs safely and efficiently with only the lowering line.
- System functions as a rope brake, comealong, block and tackle, endless capstan winch.
- System includes an interchangeable all aluminum rope brake.
- Optional truck mount allows use of the winch and rope brake where other lowering devices can't go.

30 day money back guarantee.
Free Video Available.

Good Tree Care Company
Telephone: 262.538.1703
Fax: 262.538.0255
E-mail: good@onebox.com

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 Berriros, Manager Employment & Benefits
cberrios@bartlett.com

UNITED STATES | CANADA | IRELAND | UNITED KINGDOM

Please circle 27 on Reader Service Card
Why consider RTEC Treecare?

- Prestigious work: National Zoo, Pentagon, White House, Residential Estates.
- Immediate growth positions for experienced, dedicated professionals.
- Training & Safety Programs, ISA & NAA Certification.
- Excellent Pay & Benefits.
- Award-Winning Company (Tree Maintenance and Preservation).

We are always hiring good people. Our friendly and professional environment allows dedicated professionals to shine. Our customers expect complete professionalism, we deliver, everybody wins! Give us a call; send your resume and references, complete confidence assured.

- Sales, Arborist, Horticulture, Forestry, Plant Sciences.
- General, Branch Manager.
- Foreman, Climber(s), Ground.
- PHC Technician.
- Tree Preservation Specialist.

Call Andy Ross at (703) 573-3029; Fax: (703) 573-7475, E-mail: andyross@TreesTrees.com, RTEC ("Our Tech") Treecare.

Exciting Career Opportunities for Service Industry Managers

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

- Division Managers
- Branch Managers

We have immediate openings in:

- MO, PA, GA, IL, MA

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 packages, including 401(k) and company paid medical coverage. For career opportunity and confidential consideration, send or fax resume, including geographic preference and willingness to relocate, to: DeAngelo Brothers, Inc., Attention: Paul D. DeAngelo, 100 North Conahan Drive, Hazleton, PA 18201. Phone: 1-800-360-9333. Fax: (570) 459-2690.

Climber/foreman needed in mountains of Vermont. Must be skilled in all facets of tree care. Full-time seasonal position. Beautiful, resort community with little traffic and no crime. We make a little less money but our quality of life is huge. Work 40 hours then go hiking, biking, golfing, etc. Stowe Tree and Landscape Service, (802) 888-3403. sueandmike@pwshift.com

Career Opportunities California, Bay Area

Growing Residential and Commercial Tree Company is looking for career-minded individuals for Manager and Manager Trainee positions throughout the Bay area. Excellent benefits and training programs re-location help possible.

Compensation is dependent on experience and results. Must have clean dmv.

Fax resumes to Jeff at 415-892-6935
E-mail: jeff.Englehart@cagwin.com
Call (415) 892-7710

...continued on page 70

Are You Inspiring?

Sales Training Director

SavATree has a great position open for a green industry professional (minimum 10 yrs.) with proven sales success and arboricultural management experience. This key team member would develop our next generation of arborists through in-field training throughout our 14 branch locations. Competitive compensation & benefits. Inspiring candidates can email or fax their resume and compensation history to:

lobrien@savatree.com
Fax 914-242-3934
(please reference code 102T)

SavATree has a great position open for a green industry professional (minimum 10 yrs.) with proven sales success and arboricultural management experience. This key team member would develop our next generation of arborists through in-field training throughout our 14 branch locations. Competitive compensation & benefits. Inspiring candidates can email or fax their resume and compensation history to:

lobrien@savatree.com
Fax 914-242-3934
(please reference code 102T)
Manager For Transmission Work

Tamarack Forestry Service is looking for the right person to head up their Transmission Work Operation in New York and New England. Must have experience in all phases of transmission right-of-way work, and some computer skills. Salary based on experience. Health ins. and Retirement offered. Fax, mail or e-mail your resume to Tamarack Forestry Service, PO Box 769, Canton, NY 13617. Fax (315) 386-8331 or e-mail at mrandi@twcny.rr.com.

Alaska — If you're an EXPERIENCED climber or spray tech. Interested in working in Anchorage, Alaska. Contact us – We'd love to hear from you. Fax resume to (907) 345-9639 or call (907) 345-9699.

Are you in an Oakwilt Problem State?

Do you want to add $200,000 plus to your yearly sales? We are currently looking for dealers in these states to use a proven organic product for Oakwilt and Oakwilt prevention! Ask us about our high success rate with Oakwilt prevention! We provide training and protected territories. Don't wait. Call today: 1-877-625-9458.

Managing Arborist - Central N.J.

Classifieds ... Job Bank ... Resumes ... Internships

Post ... Search ....

www.natlarb.com falls right into your tree care company's needs

National Line Clearance since 1919

Nelson Tree Service, Inc.
For more information about your vegetation management or line clearance needs
Contact our Sales Office:
800 943-0065
Nelson Tree Service, Inc.
13477 Prospect Road, Suite 210
Strongsville, Ohio 44149
Phone: 440 846-6077 • Fax: 440 846-6082
www.nelsontree.com
Petersen Tree Service, located in the Northwoods of Wisconsin, is looking for team players that love the outdoors. We are accepting applications for experienced and motivated people to join our team of professionals. Plusses include college degree, arborist certification, CDL, applicants license. Benefits include, excellent pay, health ins., retirement plan, and a positive work environment. Contact Kent at (715) 356-7311, Fax: (715) 356-4216, e-mail: ptsinc@newnorth.net

Tree Crew/Spray Technician
Experienced tree climbers and spray technicians needed. We have cake! Call Dan at Autumn Tree Care Experts, (847) 729-1963 or fax resumes at (847) 729-1966.

Are you looking for a company where commitment is rewarded and development is a standard?

The Care of Trees is growing in the Philadelphia region. Opportunities are available for IPM apprentices, climber apprentices, climbers, crew leaders and foremen. The Care of Trees is nationally known for exceptional employees and clients. We are offering a competitive wage and benefits package. Please call Doug Bull or Chris Miller at (610) 239-8017 or fax resumes to (610) 239-7576. E-mail your resume directly to: mmilliard@thecareoftrees.com.

...continued on page 72

Classified ad rates for 2002

$65 per 250 characters ($55 NAA members). Payable in advance. Ad deadline is the 20th of the month, two months prior to publication.

Place your ad on the NAA’s online Job Bank for just $10 more. Add a logo or color picture and your add will be seen by thousands more!

For details, go to www.natlarb.com, e-mail: Stone@natlarb.com or call 1-800-733-2622.
At Weyerhaeuser, our most valued resources aren't just the trees and timberlands we oversee. Our employees are the real reason we've been in business for over 100 years. Their skill and ingenuity have made Weyerhaeuser one of the largest manufacturers and distributors of wood products in the world. Discover your career path at Weyerhaeuser.

TREE BREEDING COORDINATOR/ ORCHARD RESEARCHER

Our Southern Tree Improvement Research group has a growing program of genetic field trials and breeding for genetic improvement of loblolly pine in the southeastern U.S. We are seeking a field-oriented individual with a master's degree in forestry or a related field, and some pertinent experience, to carry out breeding designs in Lyons, Georgia. You will be responsible for the installation, maintenance and measurement of progeny tests and other research field trials; administering contracts; documenting research reports, activities, and processes; and designing, carrying out, analyzing, and reporting on seed orchard.

A successful candidate will have great PC and software skills (MS Word, Excel, and graphic packages); a high level of comfort with field activities and study installation; a desire to learn; and excellent communication, interpersonal and teaching skills. You must have a commitment to safety; a willingness to travel; and the ability to produce high-quality, accurate work. Experience in genetic improvement activities, knowledge of statistical analysis, experience in SAS, and a familiarity with heavy equipment preferred.

For more information on this and other Weyerhaeuser positions, please visit us on the Web at Weyerhaeuser.com/careers. To apply, please copy resume into an e-mail body and send to: clem.lambeth@weyerhaeuser.com. Resumes must be received by Wednesday May 15, Weyerhaeuser is an Equal Opportunity Employer.

Arborist Wanted

So. Vt. tree company seeks arborist with experience in, and love for, climbing. CDL license/ISA cert. a plus. Health ins., retirement, & other benefits avail. If you want a career in the tree industry, call Turner & Renaud at (802) 257-0567.
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 $18.00 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.
PO Box 4513, Hilo, HI 96720
Phone: (808) 959-5868
Fax: (808) 959-0597

EQUIPMENT FOR SALE


Hardware and software by an arborist for the arborist. For more information about the industry's best-selling package, call or write Arbor Computer Systems, 117 Weston Road, Westport, CT 06880. Phone: (203) 226-4335; Web site: www.Arborcomputer.com; E-mail: Phannan@Arborcomputer.com

1997 Morbark chipper 200 hp; fully updated. Excellent condition. $24,000. Call: (847) 634-9838.

For Sale:

1988 Ford F-700 PHC truck 370, gas engine 64,350 miles, manual, 2-speed rear axle, 1,000 gal. tank w/ Bean R-35 pump, 4-cyl. Wisconsin motor, 2 Hannay hose reels, $15,500 o/B.O. contact Randy at (847) 878-6713 or (847) 729-6135.

Bandit Industries, Inc. has over 100 pieces of used equipment from many different manufacturers. Our new rebuild facility and trained staff ensure that each piece of equipment is in good working condition.

Hand-Fed Chippers - of all sizes
Stump Grinders
Waste Reduction Machines
368-Beast Recyclers - horizontal grinder
Whole Tree Chippers - towable and self-propelled

Check out our complete list of used equipment at www.banditchippers.com or call 1-800-952-0178 for more information.

... continued on page 74

World's Lightest Weight
Self Propelled Highway Speed
Towable Aerial Lift

Performance Speaks
For Itself

POLECAT

For More Information and The Polecat Dealer Nearest You.

800-876-5322
1988 Intl 9300 Log/Chip Truck Turbo Diesel tandem axle 18-foot-by-5-inch steel dump box. Ready to work. $10,000 OBO
Call (313) 218-2099

Call (313) 218-2099.

FOR SALE
(1) 1997 Eager Beaver
(1) 1995 Brush Bandit
(3) 1992 GMC Topkick Split Dumps
(2) 1996 Ford F800 - 190 HP - 60 Ft. Aerial Lift of Conn.
(1) 1998 International 4700 - 190 HP-DT4668 60 Ft. Aerial Lift of Conn.
(1) Jarratt (1996) 75 Ft. wheeled unit w/ winch & dozer
(1) 1996 Tractor Ford with dozer blade and brown folding deck tree cutter.
Call: (814) 676-3430

Call Conserv-a-tree at (516) 271-2998.

For Sale
1999 Morbark chipper - 200 hp. diesel Model 2400, low hours, $27,500.
1995 Kodiak - 12 foot chip box, Southco Green, 52,000 miles, $26,500.
1999 Navistar International 4700 bucket truck, 30,000 miles, under CDL with chip box w/LR-50 Asplundh Boom, $53,500.
Ask for John - (508) 428-5030

Bucket truck
1982 Ford 52' working height skyworker boom with forestry package. $6,000. 1882 C70 split dumb. $1,500. Detroit area. (734) 729-8815

Magnolia Tree Company
Contact: Tommy Wren (601) 373-6771

1997 & 1999 Jarraffs Track Units
Units are in good condition

25 Chippers Wood Chuck Drum and Hi Rollers

18 Bucket Trucks
1988-1998 Year Models
Ford - Freightliner Diesels
Aerial of Ct. - Altec Booms

1985 - 2000 Models

Please circle 39 on Reader Service Card
TREE CARE INDUSTRY - APRIL 2002
1993 F-350 with Versa lift Tel 28 P; 30' WH; 7.3 L diesel/Pony motor; auto. trans. crewcab; cab guard, well cared for, $13,500.

1991 Asplundh LR50; 55' WH; on 1991 IH 4900; diesel 5+2 speed; air brakes; chip box/dump; cross box; cab guard, $32,500.

1994 Bandit Model 1400; 230 HP Caterpillar; auto feed; hydraulic lift; HD radiator; lg. cap, hydraulic & fuel tanks; excellent condition, $21,750.

Call: (956) 778-3777.


1995 Kodiak – 12' chip box Southco Green 52,000 miles, $26,500.

Ask for John: (508) 428-5053

1987 Ford F-700 PHC truck
Rebuilt 429 gas engine, Automatic 1,000 gal. tank w/ Bean 135 pump, Kohler 25 hp motor, 2 Hannay reels, $20,500 O/B.O. contact Randy at (847) 878-6713 or (847) 729-6135.

80" Big John Tree Transplanter
7 yrs. old. Mounted on Ford FT8000 $35,000.
Call (404) 317-7703.

Alexander Equipment
The only used equipment source offering a full satisfaction guarantee! We have a huge selection of used chippers and stump grinders ... fully serviced and ready to work! See our complete inventory list on the Web at www.alexequip.com or call Matt or Steve at (630) 663-1400.

Alexander Equipment Co.
4728 Yender Ave.
Lisle, IL 60532.
We can deliver anywhere!

2001 Hi-Ranger 75 ft. Bucket Truck, 10' elevator, rear mt. on a 2001 Peterbilt 10 wheeler, 300 hp CAT auto shift trans., air cond., custom cab, alum. wheels, tanks, tools boxes, etc. Excellent cond., $125,000.

Morbark Chipper Model 30/36, with John Deere 400 hp., joystick control, 500 hrs. excellent cond., $135,000.

Call Keene Tree Service
(603) 352-8330

Tree Sprayer - 300 gallon poly tank, 13 horsepower Honda engine, 20 gpm diaphragm pump, electric hose reel, aluminum frame, brand new, never used. Take over payments $5,800 or $228 per month. Milford, CT. Call (203) 878-3638.

... continued on page 76
GET RESULTS FASTER USING AIR-SPADE®

Excavate plant roots in minutes, without root damage. The air excavation tool preferred by hundreds of professionals worldwide for:

- Root Collar Excavation
- Root Pruning
- Aeration and Vertical Mulching
- Radial Trenching
- New Construction
- Locating Utilities
- Reducing soil compaction
- Treating Plant Diseases

Find out about the benefits that air excavation can have on plant health and your business. AIR-SPADE® has been proven the world’s best air excavation tool, and “one of the few tools that pays for itself in one job”.

Concept Engineering Group, Inc. (CEG)
888-55-SAFEX (888-557-2339)
www.air-spade.com; E-mail: ceg@air-spade.com

Please circle 19 on Reader Service Card

BUSINESSES FOR SALE

Tree Business in Franklin N.C. for sale
17 yrs. in WNC. Excellent location and great growth opportunity! Contact treedr@dnet.net. Serious inquiries only. $165,000. Owner financing.

Business For Sale

Tree Service for sale. In fast growing California Ski Resort. Great opportunity for the right owner operator. Must be experienced in large tree take downs. Excellent reputation in community. Call for details. Serious inquiries only please. (760) 934-6142.

Established tree care business for 36 years on Maryland’s Eastern Shore. Long-term contracts and good workforce in place. Year-round work with good growth opportunity. Possible owner financing. Box PL, TCI, 3 Perimeter Road, Unit 1, Manchester, NH 03103.

Respected tree service in the fastest growing area of S. West Florida for sale. Loyal customer base and good commercial accounts. 50K equip, 100K gross. For more info contact: FLtreebusiness@aol.com.

Sunny Southern Oregon
Est. Tree Service, Owner/Operator, ISA Cert., Excellent reputation with repeat & referral business. Fully equipped F600 chipper truck (1995 8.2 Detroit Diesel) & drum chipper, PHC-Spraying & injection setup; Grossed $93K Net $40K, Selling price $43K. ProArbor@hotmail.com or (541) 552-1231

Mickey’s Truck & Equipment Sales, Inc.
RR 2 - Box 509 - Sugarloaf, PA 18249

Now offering
Bucket Truck
Service and Repairs !!

Financing Available
890 Down / No Payment for 90 Days
Flexible Delivery Terms !!

94 Chevy Kodiak
Altec LR3I
Utility Style Bucket Trk.

91 to 95 GMC & Ford
Forestry Trks,
60 ft. W.H. Gas & Diesel
low miles

91 to 95 GMC & Ford,
Gas & Diesel
16 ft. Chip Dump Trks,
and Man-Cabs

Ford & GMC Gas or Diesel
Aerial Lift of Conn.
Forestry Bucket Trucks

GMC & Ford
Gas or Diesel
Crane Trucks

Wood Chippers and
Stump Grinders
Many styles to choose from

Visit Our Web.....www.mickeysbuckettrucks.com.....to view special offers.

Call Toll Free 1-888-340-1756

Please circle 41 on Reader Service Card

TREES CARE INDUSTRY - APRIL 2002
PRODUCTS & SERVICES

When you think buckets... think PCC
Replacement Fiberglass Booms, Buckets and Accessories and Polyethylene Bucket Liners for most brands of bucket trucks – repairs too. Accessories include bucket saw scabbards designed for longest life, boom pole saw holders, bucket floor mats for stress relief and slip prevention, bucket covers, fall protection equipment, back strain reliefs, etc. PCC Fort Wayne, IN (800) 747-9339 – www.buckettruckparts.com.

ArborWare
The Business Solution for Arborist, Landscape & Lawn Care Professionals
Includes complete Customer Management: Estimates, Proposals, Work Orders, Invoices, Statements, and Accounts Receivables. Also includes: Customer Property Inventory, PHC and Pest/Disease control, chemical application and DOA reporting, maintenance and generation of Renewal Contracts, scheduling/routing of Crews and Sales Reps, Vehicle Maintenance and DOT reporting, Job Costing, Marketing and Management Reporting, comprehensive User Manual, and more ... Call (800) 49-ARBOR (27267) for more information.

Safety & Training Materials
Improve your employees' knowledge and professionalism with the NAA's newly revised Home Study program. The program provides you with a cutting-edge education that is almost impossible to find outside the college classroom. The Home Study program is full of diagrams, drawings and photos that clearly illustrate what is being taught.

Give your crews comprehensive training in chipper use and maintenance, plus a lot more. Basic Training for Ground Operations in Tree Care breaks new ground in crew training. Video titles are: An Orientation to the Arboriculture Profession; Vehicle Safety; Job Planning and Preparation; Working Safely and Efficiently; and Brush Chipper Operation and Maintenance. Contact the NAA at 1-800-733-2622 or order online at www.natlarb.com.

TCI Magazine & NAA Website Classified Rate Card

<table>
<thead>
<tr>
<th></th>
<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>$55</td>
<td>$65</td>
<td>$75</td>
<td>$75</td>
</tr>
<tr>
<td>Non-Members</td>
<td>$65</td>
<td>$65</td>
<td>$75</td>
<td>$75</td>
<td>$85</td>
</tr>
</tbody>
</table>

AD SIZES
Pricing is based on 250 characters per pricing unit.

DISCOUNTS
Ads running for a consecutive 6-month period will receive a $5 discount per month.

Turn Your Timber into Cash!

Quiet, easy-start Honda OHV engines – the best in the business
Auto cycle valve completes full splitting cycle for maximum productivity
4- and 6-way wedges cut your splitting and lifting time in half

Split up to 3 cords an hour!

Built-in strength and safety with heavy-duty 8" H-beams
Backsaver log-lift handles up to 500 lbs.

Timberwolf log splitters are engineered for the fast cycle time and heavy tonnage it takes to get the job done. Our bigger, baffled hydraulic tanks run cooler for longer engine life and greater wood production. And every Timberwolf splitter is built to order in the U.S.A. from components we manufacture. If you’re serious about wood, it’s time you got serious about a Timberwolf.

"...we blew through that mountain of wood, were able to cash out the machine and pocket some vacation money."

– Dennis Redican, Tabor Tree & Land Co., Martha's Vineyard, MA

Call today for FREE information and the name of your local dealer
800-340-4386
www.timberwolfcorp.com

W O O D P R O C E S S I N G E Q U I P M E N T

Please circle 67 on Reader Service Card

TREE CARE INDUSTRY - APRIL 2002
Before You Buy That Grinder, Figure How the Chips and the Profits Will Fall

By Rick Howland

The large grinders aren’t for everyone. Despite their high six-figure costs, however, they can more than pay for themselves and lead to altogether new profit centers.

Grinders come in two flavors: horizontal and tub. Though current popularity tends toward the horizontal variety—especially in populated areas—each has its place, each its benefits.

Many manufacturers and arborists agree that the high cost of purchase tends to limit the grinders to larger organizations with two criteria in place: businesses large enough to make the capital expenditure, and businesses that generate or can find enough “throughput” material to keep the unit busy. Even then, managers must plan for myriad ways in which the units can be used to pay their way.

The Bandit Industries horizontal 3680 Beast Recycler has no length restrictions on materials being fed in.

Morbark Model 5600 Track Wood Hog is popular in land-clearing operations.

The Vermeer TG400 has a Cat turbocharged engine that delivers 400 hp to tear through wood waste.
The primary mission of the large grinder is to reduce large volumes of vegetation (from whole trees to brush) to chip-size material that can then be landfilled, trucked to another site, or distributed on-site much more efficiently. Materials can also include sawmill and paper mill waste ends, pallets, railroad ties, fiberboard — virtually any large volume wood object.

A relatively new and rapidly growing activity is the processing of trees, brush and stumps into mulch that can then be sold to wholesalers, builder/developers, landscaping and home centers, or direct to consumers. Fortuitously, the difficulty in finding dump sites for ground material coincides with the rapid demand for landscaping materials. The ability to “custom blend” wood types or to color them with dyes can add up to another $10 per yard over the $10 to $15 charged for mulch at wholesale.

Secondary profit opportunities also have popped up. The three most common are:

- **contract grinding;**
- **“processing” material into decorative landscaping mulch, animal bedding or wood-fired boiler fuel;**
- **contract disposal.**

First, in contract grinding, the unit arrives at a site needing material reduction. This could be a landfill, construction or property development site, often where trees have been bulldozed. (Reports of entire houses and barns being run through a grinder are quite common, and owners are experimenting with applications that include high-volume paper and document grinding, not only for space savings but also security reasons.)

Second, grinder owners are paid on contract to reduce material to mulch-size pieces that are either used for mulching or that get distributed and worked into the soil of a busy site to a point where materials virtually vanish, according to one NAA member. Even if it has to be hauled away, material can be hauled cheaper because there is less volume and “no air to haul,” and the material can be dumped at a cheaper tipping fee. (NAA members report some landfills want as much as triple yardage cost for dumping logs and stumps, over the straight rate for denser material — including chipped wood.)

Finally, for contract disposal, material arrives at the yard of the operator who is paid to take it in. Considered the best of both worlds, the owner gets paid on both ends, first from the “dumper” (often a smaller tree care or landscape company) and then again when the value-added material goes out as the consumer product mulch.

NAA member Joe Kramer of Kramer Tree Specialists, a large operation in West Chicago, Ill., made the decision to get a grinder 10 years ago, “to avoid problems of landfilling or burning or running endless miles and paying for fuel and overtime to haul material to a dump.”

Kramer has used both tub and horizontal grinders and now favors the horizontal type. The diameter of the material doesn’t matter going into a tub, he points out, adding that horizontals have a capacity of about 18 inches. He has installed a Megabyte Shear onto an excavating machine to downsize large pieces to accommodate his grinder.

“Factoring in the need and cost of support machinery is of vital importance,” he explains. “Some monster units don’t have such limits, and sizing material is a rule of thumb, not an exact science.”

Kramer has been in the business since 1974. Early on in his grinder experience, he began to investigate the idea of using a grinder to process the debris from his organization and to then market the mulch he produced.

“It took considerable dollars to market mulch in the beginning,” he recalls. Besides dealing with a small market for mulch, “suddenly we had thousands of yards of a product we never had before. We weren’t a small business with a few hundred yards of mulch. We jumped in with both feet and began producing tens of thousands of yards in a single year.”

In the first three years while marketing intensively via direct mail, Kramer said the mulch business broke even. “We sold it for what it cost,” he says. But he was still ahead since he had eliminated landfill and related hauling costs.

“The last six or seven years have been going well,” Kramer relates. “We spent 10 percent of our mulch income on promotion. As our company grows, the amount of material has grown. Contract grinding has grown. Landscaping and tree care companies have grown. And demand has grown. Business now is consistent. We sell about 30 percent of our product to landscape contractors, 45 percent to wholesale...
Chae e. good- ize company to justify the garden centers. and price of the machine. “You have to be a good-size company to justify the purchase. That’s one of the reasons we do grinding for lots of smaller companies,” Kramer notes. Mulch production means a 40 percent return after adding the cost of support machinery to the calculation.

Regarding the tub versus horizontal technologies, Kramer has used both. He switched to the horizontal Bandit 3680 Beast Recycler primarily because it is safer in populated areas. “In a wide open area, the tub grinder is the way to go,” he insists. Although the tub grinders are faster, they’re slightly more expensive to operate. Horizontals are not as aggressive, but hourly costs are lower. The net result, according to Kramer, is that costs to produce a yard of mulch from either type of machine are about equal.

Jerry Morey, marketing manager at Bandit Industries, maker of 3680 Beast Recycler, 3680 self-propelled Track Beast and the company’s newer and smaller sibling, the 2680 Beast Recycler horizontal grinder, says that the popularity of the horizontal technology is due to its ability to better process brush and “disoriented materials,” and the lack of length restrictions on materials being fed in.

To give a sense of the cost/profit profile of a grinder buyer, Morey’s office developed an owning and operating cost analysis for Tree Care Industry using the company’s most expensive and powerful unit, the 3680 Beast Recycler.

“I do not like presenting ownership costs based on an hourly or daily operating basis,” he begins. “I think the more significant number is the cost per cubic yard or per-ton cost of material produced.”

Morey presents costs based on three scenarios and a typical number of days per year that the unit would be used — somewhere between 100 and 150. (See chart on page 82.)

“Some run the unit less than 100 days and can justify the cost because of what it will do for them and what they can earn from selling the by-product,” Morey notes. “Those who contract-grind, in addition to recycling their own materials, will operate more days per year.”

“If you take the most conservative analysis and a cost per day of $1,196 to own and operate the (most expensive) machine and you figure 200 cubic yards of product per hour times eight hours, your cost per cubic yard is less than $1,” Morey calculates.

But he warns, “you need to keep in mind that these costs are only in owning and operating costs for the machine. There are other pieces of equipment involved in handling and feeding the machine and in taking the material away. Depending on which contractor you ask, final production cost numbers are in the area of $3 to $4 per cubic yard for the whole operation.

Finally, Morey stresses, “These costs are for making high-quality mulch that will generally bring $10 to $15 per cubic yard — wholesale.”

On the contract side, Morey states that contract grinders are getting $2,500 to $3,000 per day, factoring in the cost of a loader and the fact that contractors tend to use the 500 horsepower machines, which are less expensive to operate and “literally throw off more profit.”

Dan Brandon, marketing manager for Morbark (which makes both types of grinders) agrees that it’s a matter of customer preference and application. The tub is superior for big stumps, especially because the big pieces don’t have to be reduced. “The horizontal is superior for tree length or longer because you don’t have to chain saw or shear.”

“You can control the end product of both technologies by varying the size of the grates or screen opening,” says Brandon. “Teeth need to be changed every 60 to 200 hours, depending on the material to be ground. Morbark provides reversible inserts resulting in two changes out of one tool. Teeth combination is a mixture of art and science.

“Start by considering what type of wood is to be processed and the size and the incoming product — big logs vs. brush or pallets,” he recommends. “After some trial and error, a contractor can learn to quickly dial in the optimal combination. These days,” says Brandon, “with machines costing in the range of from $100,000 to a half million dollars — even for used ones — you almost have to find other ways to generate revenue. It’s another chance to develop part of a business plan that ‘pencils out’ to
PROBLEM: Economically Converting Waste Into Useable Products

SOLUTION: BANDIT

The BEAST has become the most popular waste reduction machine on the market for so many reasons:

- Low operating costs
- Energy efficient
- Up to 650 HP
- Reduces green waste, leaves, brush, stumps, whole trees, pallets, CSD, railroad ties, new shingle waste, asphalt and more to a consistent end product of varying sizes and consistencies
- Self-propelled unit available with 325 CAT undercarriage

MODEL 3680 BEAST RECYCLER

By Emoray

MODEL 1850 TRACK BANDIT
Towable or Self-Propelled
18” x 19” capacity chippers that will convert an 80’ whole tree to chips in under a minute.

MODEL 280 BRUSH BANDIT
Hand-Fed
Disc-style chippers in 6”, 9”, 12”, 14” and 18” diameter capacities are highly efficient and extremely versatile.

MEGABYTE
The ultimate stump and log shear attachment with a wide 92” opening and dual pivoting shear.

Call for more information or to arrange a demonstration.

BANDIT INDUSTRIES, INC.
6750 MILLBROOK ROAD • REMUS, MI 49340
PHONE: (800) 952-0178 OR (989) 561-2270 • FAX: (989) 561-2273
E-Mail: brushbandit@eclipsitel.com • Website: www.banditchippers.com

WO# 6707
Brandon cites an Atlanta tree service company that runs four Morbark Model 1300 tub grinders doing contract grinding for a land-clearing firm, which then uses the material for erosion control. Another, Arbor Care in Lansing, Ill., expanded to the horizontal 5600 Wood Hog and is pondering a colorizing unit to fetch another $10 per yard at retail.

Another leading tub grinder manufacturer is Vermeer Manufacturing Company. According to product specialist Tom Ogle, "Tub grinders process organic materials, everything from wood and wood waste to various other products, including paper phone books."

Generally, Vermeer has found a market trend toward mulch in creating a material that can be used in composting to generate a desirable "amendment to topsoil."

"Many areas of the country with poor soils now can turn ground-up organic material into a type of soil that can grow various products, from grasses to gardening," he says. Other profit-making uses can be found at landfills that need daily cover. Unlike using soil only, the ground material mix can stretch the soil stockpile.

Known as a tub grinder manufacturer with three models representing horsepower ratings from 400 to 800 hp, Vermeer will make its entry into the horizontal marketplace with a new line of towable and track-powered horizontal grinders. One, the HG 365, will accommodate up to 24-inch material and the HG 525 up to 32 inches. This new line will have a thrown object deflection system that will permit use of the machine in smaller work zones.

How much wood do you generate? How much competition is there in the grinding market for your area? How much debt are you willing to finance? How good are you, truly, at marketing a new service beyond tree care? Ask the questions, run the numbers and you may find running a grinder will produce a pile of money along with a pile of mulch.

| Fuel Consumption | Operator Costs
|------------------|------------------|
| Fuel consumption will vary, based on the volume of material being processed. Figuring 20 gallons of fuel per hour, the unit will consume about 160 gallons of fuel per day. Fuel at $1.50/gallon fuel costs per day: | Operator costs will vary from region to region. For this analysis, we are figuring operator costs at  
| 240.00 |  |

<table>
<thead>
<tr>
<th>Recap of Daily Owning and Operating Costs Based on 100, 150 &amp; 200 Days Per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depreciation</td>
</tr>
<tr>
<td>$368.00</td>
</tr>
<tr>
<td>$245.00</td>
</tr>
<tr>
<td>$184.00</td>
</tr>
</tbody>
</table>

The above estimate is based on the best available information at time of preparation. Actual costs will vary with each application.

* Bit costs will vary considerable depending on the type of material being processed and the amount of contaminant in the material being processed. The bit costs in this summary are based on an actual production operation processing a mixture of pallets, brush, stumps, railroad ties, with limited amounts of dirt, rock and metal. In applications with little contamination like green waste, bit life will be greater and the bit costs would be reduced. The opposite is true when running more contaminated material such as construction & demolition.

The above daily operating costs are based on Bandit's experience in operating the 3680. Bit wear is the most critical part of the analysis. It is suggested that the 3680 be tested in a particular application to determine actual bit wear and cost.
CHIPPERS SO GOOD WE DOUBLED THE WARRANTY

ON ALL MORBARK COMPONENTS

Nine Heavy Duty Models
Disc and Drum Style

ISN'T IT TIME YOU LOOKED AT A MORBARK?

MORBARK
THE CHIPPER COMPANY
800-831-0042 www.morbark.com
Call or check our website for the location of your nearest dealer.

Please circle 43 on Reader Service Card
The stick should measure the length of your arm.

Tip the stick vertically, forming a triangle with your eye and the tree.

Look over your thumb and sight the base of the tree. Then, look up over the top of the stick. Move back or walk forward until all of the tree is within the stick length. From your spot to the base of the tree is the tree’s height.

The Cross-Sight should be placed on your nose bridge or forehead. The tool folds to pocket size and works the same as the stick.

You walk around a job site or a potential new job area. You spot the tree to be removed or maintained. You begin analyzing and taking information to begin the work plan or write the estimate. The tree is tall but hosts a narrow crown. You look around to find a small outbuilding, a power line and a pet fence.

Will the tree reach these obstacles if felled from the ground?

If I request the bucket truck, will the 40-foot boom reach the large limb crotch?

How many feet is it to that high, stable climbing crotch? The crew may need to bring a much longer rope for this one.

A simple tool and technique may be the answer to a more accurate plan or a quicker working solution. By using a simple stick or a height measure tool, much of the guesswork can be left back at the break room. When you get to the job site, there will be confident decisions made with accurate planning and tool selection as the work begins.

In my training programs, one of the most asked questions following the information taking presentation is, “How do you do that stick-measuring thing again?” They are referring to taking height measurements of a tree or structure, from the ground, with a simple stick. By creating an equal triangle with your eye and a stick, you can determine, very accurately, the height of the tree.
The "stick trick"

Select a stick slightly longer than arm's length. With your arm straight in front of you (at 90 degrees to your body), hold the stick up to your cheek with the opposite end cradled between your thumb and forefinger. Now, as you face the object/tree to be measured, use the hand of your opposite arm to rotate the stick to a vertical position, forming a 90-degree corner with your arm and stick. A triangle is created from the ends of the stick and back to your eye.

Look over your thumb and sight the base of the tree. Now, without moving your head, look up over the top of the stick. What you see at the top of the stick on the tree will be what would land on the ground below your eye. To check the entire height of the tree, move back or walk forward until the total tree is visually in the stick length. Mark the spot on the ground before you and measure back to the base of the tree; that measurement will be the tree's height.

With a little practice, you will become very accurate with this technique. Imagine - you can check tree height distance to obstacles, figure bucket arm reach, and even calculate rope needs from the ground.

I suggest practicing this technique in an open area, away from obstacles and structures, before attempting to trust it completely. Your sighting needs to become a little tested before attempting real close-quarter measurements.

While using this technique, one variable you need to understand is the level of the terrain. If you are sighting from a position below the tree base, your measurement will be long. If you are above the tree base, the measurement will be short. For some reason, if the ground fall is close to or greater than your height, you will find it off in the other direction. The bottom line is to make sure you walk out the incline (side hill) in the case of irregular terrain or ground fall.

I have had more than one tree worker tell me that this technique has saved them time and likely property damage. Practice it and see if it can work for you, too.

Tim Ard is president of Forest Applications Training, Inc. and is a chain saw safety and applications instructor.

Forest Applications Training can be reached at timard@forestapps.com or www.forestapps.com. Tim has designed a pocket tool, called the Cross-Sight, that can measure heights using the stick method. This tool unfolds from pocket size and is available at www.forestsapps.com.

JARRAFA
ALL TERRAIN TREE TRIMMER

The Jarratt all terrain tree trimmer provides power, performance and productivity. The Jarratt requires virtually no set-up time. And since workers never leave the ground, the Jarratt adds safety to every job. Save time, money and manpower with Jarratt.

Jarratt Features:
• One-person operation
• Hydraulics run boom and traction independently and continuously
• 75-foot maximum cutting height
• Simple controls—2 four-way joysticks
• 24-inch diameter saw blade

Jarratt Industries Inc.
1730 Gault St. • St. Peter, MN 56082 • 1-800-767-7112 • 1-507-934-8688 • FAX: 1-507-934-8690
email: jarratt@crystalcomm.net • www.jarratt.com

CUT ABOVE THE REST

Jarratt on Track 1.8 PSI ground pressure

Please circle 34 on Reader Service Card
Ordinance Aims to Save Trees in Construction

A new zoning ordinance in Charlotte, N.C., has made it a crime for developers to clear-cut several hundred acres for the sake of a new community.

The new ordinance, passed by City Council members in mid-March, requires developers to preserve at least 10 percent of the tree canopy in new subdivisions. Even though most of the city is already developed, the ordinance will apply to nearby counties that fall under Charlotte zoning authority.

According to an article in the Charlotte Observer, in addition to the 10 percent requirement, the new zoning ordinance requires that large shade trees be planted along subdivision streets; provides incentives for developers who save more than 10 percent of the trees; encourages builders to cluster groves of trees in areas such as small parks; requires builders to submit a tree preservation plan before development is approved; and aims to preserve the city’s oldest trees by requiring a permit to remove those that meet criteria (set by the state and American Forest Association) based on size, age and species.

Home builders who violate the ordinance face fines based on the number, size and species of the trees involved.

Cutting Can Resume in Florida under New Law

A new law in Florida will permit cutting crews to resume chopping down healthy citrus trees within 1,900 feet of those infected with canker.

According to an Associated Press report, this could affect as many as 200,000 trees this year. Cutting had been stymied due to several lawsuits filed by home owners and municipalities.

Man Saws Down Tree, Kills Wife

A German man who sawed down a tree in his garden accidentally killed his wife recently when the tree fell on her, according to a report in the newspaper, Bild.

The man, 66, decided to cut down a birch to protect passers-by because the tree had become unstable after a recent storm, the report said.

The tree crashed onto the man’s wife, 66, when she was standing in the street warning passing cars. The woman died later at the hospital.

Tree DNA Used as Evidence in Murder Trial

A genetic technique that could bring plants into the courtroom as crime-busters was brought to the forefront of a murder case recently. DNA samples from 42 Norwegian pines were presented as evidence in a 1999 murder at a farmhouse near Oslo, Norway. The scientists presenting the evidence stated that DNA from 36 of the 42 trees did not match the DNA of a pine needle in a sock owned by a convicted killer. Police believe the killers may have put thick socks over their shoes to disguise their footprints at the crime scene.

The DNA of the remaining six trees is still being studied.

“Plant material is a promising tool because it is quite frequently associated with dead bodies or clothing,” according to Leif Sundheim, research director at the Norwegian Crop Research Institute. Sundheim told Reuters that thus far, the use of plant DNA in trying to solve crimes had been extremely rare anywhere in the world.

All cells - including those of pine needles - have a unique DNA “fingerprint.”

Mexican States Launch Guest Worker Programs

A new guest-worker program started by several Mexican states can help U.S. tree care firms find and hire Mexican employees. As part of the program, Mexican state officials conduct criminal background checks on applicants to make sure they have had no trouble with the law, and also investigates the U.S. firm to make sure it subscribes to legal practices.

According to an Associated Press report, as part of one such program, officials from the Mexican state of Coahuila (which borders Texas) found nine men needed by a U.S. tree care company, and then accompanied the company owners and the Mexican workers to the U.S. consulate in Monterrey, where they waited 10 hours to obtain visas for the workers.

State officials say their programs can serve as a model for a large-scale guest-worker program that could allow millions of Mexican workers, instead of the current thousands, to join the American workforce.

The programs are still too new to ensure employees can return to the U.S. after the first-year visa expires.
Please tell these advertisers where you saw their ad. They appreciate your patronage.

<table>
<thead>
<tr>
<th>Page No.</th>
<th>Reader Service No. *</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>1. ADI Pruning Tools</td>
</tr>
<tr>
<td>72</td>
<td>3. Almstead Tree Company, Inc.</td>
</tr>
<tr>
<td>21</td>
<td>5. American Arborist Supplies</td>
</tr>
<tr>
<td>79</td>
<td>6. American Express Business Finance</td>
</tr>
<tr>
<td>1</td>
<td>7. Arborjet</td>
</tr>
<tr>
<td>35</td>
<td>8. ArborLearn.org</td>
</tr>
<tr>
<td>49</td>
<td>9. ArborSystems, LLC</td>
</tr>
<tr>
<td>86</td>
<td>10. Arborwear LLC</td>
</tr>
<tr>
<td>29</td>
<td>11. Bailey's</td>
</tr>
<tr>
<td>64</td>
<td>12. Bailey's</td>
</tr>
<tr>
<td>21</td>
<td>14. Bishop Company</td>
</tr>
<tr>
<td>72</td>
<td>15. Border City Tool &amp; Manufacturing Co.</td>
</tr>
<tr>
<td>38</td>
<td>16. Buccaneer Rope Co.</td>
</tr>
<tr>
<td>31</td>
<td>17. C.A.G. Corporation</td>
</tr>
<tr>
<td>29</td>
<td>18. J.P. Carlton Company</td>
</tr>
<tr>
<td></td>
<td>Central Boiler</td>
</tr>
<tr>
<td>76</td>
<td>19. Concept Engineering Group, Inc. (CEG)</td>
</tr>
<tr>
<td>73</td>
<td>20. The Davey Tree Expert Company</td>
</tr>
<tr>
<td>71</td>
<td>21. DeAngelo Brothers, Inc.</td>
</tr>
<tr>
<td>67</td>
<td>22. DICA Marketing Co.</td>
</tr>
<tr>
<td>25</td>
<td>23. Doggett Corporation</td>
</tr>
<tr>
<td>40</td>
<td>24. Fanno Saw Works</td>
</tr>
<tr>
<td>55</td>
<td>25. FCI-Racine Hydraulic Tools</td>
</tr>
<tr>
<td>68</td>
<td>27. Good Tree Care Company</td>
</tr>
<tr>
<td>15</td>
<td>28. Husqvarna Forest &amp; Garden Co.</td>
</tr>
<tr>
<td>48</td>
<td>29. IML - Instrument Mechanic Labor, Inc.</td>
</tr>
<tr>
<td>14</td>
<td>30. ImpelMax Equipment Co.</td>
</tr>
<tr>
<td>82</td>
<td>31. Independent Protection Company</td>
</tr>
<tr>
<td>43</td>
<td>32. International Society of Arboriculture</td>
</tr>
<tr>
<td>67</td>
<td>33. Jameson</td>
</tr>
<tr>
<td>85</td>
<td>34. Jarraff Industries, Inc.</td>
</tr>
<tr>
<td>19</td>
<td>35. Leonardi Teeth</td>
</tr>
<tr>
<td>37</td>
<td>36. Leonardi Teeth</td>
</tr>
<tr>
<td>57</td>
<td>37. Lewis Utility Truck Sales, Inc.</td>
</tr>
<tr>
<td>23</td>
<td>38. Lowe's Company, Inc.</td>
</tr>
<tr>
<td>74</td>
<td>39. Magnolia Tree Company</td>
</tr>
<tr>
<td>53</td>
<td>40. J.J. Maugel Company</td>
</tr>
<tr>
<td>76</td>
<td>41. Mickey's Truck &amp; Equipment Sales Inc.</td>
</tr>
<tr>
<td>34</td>
<td>42. Miller Machine Works</td>
</tr>
<tr>
<td>83</td>
<td>43. Morbark, Inc.</td>
</tr>
<tr>
<td>41</td>
<td>44. NAA - Model Safety Program</td>
</tr>
<tr>
<td>47</td>
<td>45. NAA - Membership</td>
</tr>
<tr>
<td>70</td>
<td>46. Nelson Tree Service, Inc.</td>
</tr>
<tr>
<td>56</td>
<td>47. Northeastern Associates</td>
</tr>
<tr>
<td>13</td>
<td>48. Payeur Distributions Inc.</td>
</tr>
<tr>
<td>80</td>
<td>49. Pete Mainka Enterprises, Inc.</td>
</tr>
<tr>
<td>59</td>
<td>50. Petzl America</td>
</tr>
<tr>
<td>73</td>
<td>51. Polecat Industries, Inc.</td>
</tr>
<tr>
<td>24</td>
<td>52. Porter-Ferguson</td>
</tr>
<tr>
<td>34</td>
<td>53. Rainbow Treecare Scientific ... Inside Back Cover</td>
</tr>
<tr>
<td>33</td>
<td>54. Rapco Industries, Inc.</td>
</tr>
<tr>
<td>5</td>
<td>55. Rayco Manufacturing, Inc.</td>
</tr>
<tr>
<td>65</td>
<td>56. Royal Truck &amp; Equipment, Inc.</td>
</tr>
<tr>
<td>69</td>
<td>57. SavATree</td>
</tr>
<tr>
<td>48</td>
<td>58. Schodorf Truck Body &amp; Equip. Company</td>
</tr>
<tr>
<td>7</td>
<td>59. Sherrill Arborist Equip. &amp; Supply, Inc.</td>
</tr>
<tr>
<td>52</td>
<td>60. Southco Industries, Inc.</td>
</tr>
<tr>
<td>39</td>
<td>61. Stihl Incorporated</td>
</tr>
<tr>
<td>42</td>
<td>62. Swinger Loaders Div. NMC-Wollard, Inc.</td>
</tr>
<tr>
<td>27</td>
<td>63. TCI EXPO</td>
</tr>
<tr>
<td>62</td>
<td>64. Ted Britt Ford Sales, Inc.</td>
</tr>
<tr>
<td>3</td>
<td>65. Terex Telelect, Inc.</td>
</tr>
<tr>
<td>77</td>
<td>66. Timberwolf Manufacturing Corporation</td>
</tr>
<tr>
<td>51</td>
<td>67. Tree Tech Microinjection</td>
</tr>
<tr>
<td>88</td>
<td>68. TreeLife ™</td>
</tr>
<tr>
<td>75</td>
<td>69. Trucks &amp; Parts of Tampa</td>
</tr>
<tr>
<td>40</td>
<td>70. Trueco, Inc.</td>
</tr>
<tr>
<td></td>
<td>71. Vermeer Manufacturing Co. ... Inside Front Cover</td>
</tr>
<tr>
<td>69</td>
<td>72. Western Tree Equipment &amp; Repairs</td>
</tr>
</tbody>
</table>

* Please circle this number on the Reader Service Card for more information.
The Perfect Tree

Thoughts on the fine art of tree pruning
By Kevin Westphal

As a foreman on a pruning crew for a large municipal forestry department I have the luxury of choosing between groundwork and climbing on a daily basis. When on the ground, my duties include stacking brush, raking, answering climbers’ questions and public relations.

The other day I happened to be ground- ing for one of our climbers and I looked up at his tree and jokingly said, “Hey Jack, you finally did a decent job on a tree. It’s perfect!”

Jack answered, “It’s not perfect, there is that one big rip.”

I responded, “I’ll tell you what, as soon as you prune the perfect tree you can retire with a full pension.”

We both had a good laugh and I started thinking just what it would take to prune the perfect tree perfectly.

When pruning street trees, setting the clearance height and attaining crown symmetry are two of the top priorities. Our street tree ordinance requires 14 feet of clearance over roads and 8 feet over sidewalks. Our arborists, however, are told to set the height over the sidewalk and then continue that height over the sidewalk side to avoid an asymmetrical crown. The problem with an asymmetrical crown is that the tree has uneven dynamic and static loading – and it just looks bad. The perfect tree would need to be exactly level across the bottom of the crown and set to the exact desired height.

Another top priority is the removal of hazardous branches. Branches that are dead, diseased and dying as well as split and broken branches have to be removed from the tree.

Promoting proper structure through pruning decreases the likelihood of storm damage and can add years to the life of a tree. The perfect tree would need a strong central leader that might be attained through removal of a co-dominant stem or subordination of a “sweeper” (a leader that starts low on the trunk and sweeps up to compete with the central). Proper vertical and radial spacing of branches and elimination of poor (tight, included bark) crotches is also important.

Someone once said that if you had 10 arborists prune a tree you would get 10 different trees. This is why trained arborists must have a set of pruning guidelines to follow to reduce poor pruning decisions. The most obvious mistakes in decision-making are related to structure and height clearance. An arborist can look at a tree and say, “Why’d he take that off?” or Which one’s the central leader?” or “Why didn’t he subordinate that?”

Poor pruning decisions are obvious to the trained eye and sometimes even to the untrained.

Once the clearance, structure and decisions are perfect, what about the cuts? The perfect tree would have perfect cuts. Whether you made 1,000 cuts, like in a mature honey locust, or 10, like in a young columnar maple, there can be no rips, ears, heels, stubs, or flush cuts. Nor should there be cuts into the branch bark ridge or branch collar and saw marks on the branches around the cuts.

The experts say you should never remove more than one-quarter of the crown when pruning a tree. [Note: Note article on ANSI A300 Part 1 on page 36]. While pruning a tree, it’s important to be aware of how much crown you have removed. Look around at those piles of brush and try to determine if you are inside the limit. If not, you took too much off and the tree’s not perfect.

When you’re all done and rolling up your rope or raising your outriggers, admiring your “perfect” tree, don’t be too quick to walk away. You may have missed something, like a girdling root, stub or hanger.

There are so many factors that go into the fine art of tree pruning it can be overwhelming. When you really think about it, there is no such thing as the perfect tree. If God were an arborist, he could pull it off. As for the rest of us, the perfect tree is something we can only strive for.

Kevin Westphal is a foreman with the City of Milwaukee, Forestry Division.

TreeLife TM
Tree Nutrients

Dealers Wanted!
Great Income All Over The US!
No Toxics! - Works on Every Type of Tree!
Income Potential $100,000+ Per Year!
No Office Needed! - No Overhead!
Small Investment Required (No Blue Sky)
Training Included!

CALL TODAY!
TreeLife TM
877-625-9458

Do you have a story From the Field?
TCI will pay $100 for published articles. Submissions become the property of TCI and are subject to editing for grammar, style and length. Entries must include the name of a company and a contact person.
**Cambistat™ 2SC**

**Improve the Durability of Urban Trees**

**Reduced Vegetative Growth**
Growth is reduced by approximately 50% in the first year of treatment and between 80-90% in years 2 and 3.

**Greater Tolerance to Insects and Disease**
Treated trees tend to have thicker leaves and cuticles. These attributes can change the way a particular insect or pathogen physically invades a leaf.

**Root System Enhancement**
A root system with greater capacity to mine the soil for water and minerals will improve a tree's durability under all urban stress situations.

**Heightened Durability to Drought, Heat, and Cold**
Plants treated with Cambistat™ exhibit more conservative growth and have greater ability to photosynthesize under adverse conditions.

**Call Us** to receive more information about how Cambistat™ works and how to integrate this tool into your business.

*Active ingredient in Cambistat™ 2SC is paclobutrazol*

© 2002 Rainbow Treecare Scientific Advancements

---

**Call toll-free**
1-877-272-6747

Rainbow Treecare Scientific Advancements

Please circle 54 on Reader Service Card

Cambistat 2SC is a registered trademark of Rainbow Treecare Scientific Advancements
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’

The rear mount is so compact, this vehicle can maneuver with ease through tight spaces and give additional working height.

The AL-60/50 unit with 60’ working height and 50’ side reach: the only unit in its category that gives you the extra side reach.

The elevator is a compact stowed unit for travel. This aerial device gives you the extra working height up to 77’.

The Aerial Lift can be mounted on various off-terrain vehicles for those hard-to-get-to locations.

Aerial Lift Inc. is an authorized dealer and distributor of Greenlee Fairmont Textron®-Fairmont "Limb-Lopper™" tools. For tools, parts or service call us on our 800 numbers.

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

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

THE BEST WARRANTY IN THE BUSINESS

Established 1958
Made in U.S.A.

THE STAFF OF AERIAL LIFT HAS EXTENSIVE EXPERIENCE SINCE 1958 IN RESEARCH, ENGINEERING AND DESIGN OF AERIAL DEVICES. WE HAVE AN ENGINEERING STAFF MEMBER ON THE ANSI/SIA A92.2 COMMITTEE TO ENSURE THE RELIABILITY, QUALITY AND SAFETY OF ALL AERIAL LIFTS. AERIAL LIFT IS CONSTANTLY STRIVING TO PROVIDE OUR CUSTOMERS WITH THE LATEST IN AERIAL DEVICES AND THE BEST SERVICE IN THE INDUSTRY. IT IS OUR RELENTLESS EFFORT IN PURSUIT OF THESE GOALS THAT ASSURES OUR CUSTOMERS MAXIMIZED OPERATING ECONOMIES.

AERIAL LIFT MODELS AVAILABLE

<table>
<thead>
<tr>
<th>Models</th>
<th>Working Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL-38-L-HD</td>
<td>43' 6&quot;</td>
</tr>
<tr>
<td>AL-39-L</td>
<td>44' 6&quot;</td>
</tr>
<tr>
<td>AL-40-L</td>
<td>45' 6&quot;</td>
</tr>
<tr>
<td>AL-42-L</td>
<td>47' 6&quot;</td>
</tr>
<tr>
<td>AL-45-L</td>
<td>50' 6&quot;</td>
</tr>
<tr>
<td>AL-50-L</td>
<td>55' 6&quot;</td>
</tr>
<tr>
<td>AL-52-L</td>
<td>57' 6&quot;</td>
</tr>
<tr>
<td>AL-60/60-L</td>
<td>60' 0&quot;</td>
</tr>
<tr>
<td>AL-50-E14</td>
<td>70' 6&quot;</td>
</tr>
<tr>
<td>AL-52-E14</td>
<td>72' 3&quot;</td>
</tr>
<tr>
<td>AL-60/60-E14</td>
<td>75' 0&quot;</td>
</tr>
<tr>
<td>AL-45-C</td>
<td>50' 6&quot;</td>
</tr>
<tr>
<td>AL-50-C</td>
<td>55' 6&quot;</td>
</tr>
</tbody>
</table>

Also available
Aerial Lifts built in Hydro-Chippers
12” Chipper Head

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