When you climb on our orange ropes, you’re recognized as a professional who’s serious about safety. The instant success of Braided Safety Blue High-Vee demonstrates that clearly identified climbing ropes promote safety in the tree. Now, New England Ropes introduces a high visibility version of our famous Safety Blue three-strand rope and, for those who prefer a 12-strand rope, our completely redesigned TreeLine with a new abrasion resistant finish and optional fleck pattern.

New England Ropes is committed to making the best climbing ropes possible. That’s why when your safety is on the line, New England Ropes comes through with flying colors.

For a sample and the name of your nearest dealer, please call or write us.

NEW ENGLAND ROPES
23 Pope’s Island, New Bedford, MA 02740
Phone: (508) 999-2351 FAX (508) 999-5972
Providing landscape maintenance services and working closely with landscape maintenance firms are two alternatives that help arborist firms improve their year-round profitability. Page 22.

Features

4  ALL ABOUT ROPE
   Don Blair is back in TCI with a comprehensive, fact-filled article on arborist ropes.

22  BRANCHING OUT
   Arborists look to landscape maintenance as a sideline.

Departments

2  OUTLOOK

17  INDUSTRY INPUT

18  WASHINGTON IN REVIEW

20  MANAGEMENT EXCHANGE

28  CUTTING EDGE

32  INDUSTRY ALMANAC

33  CLASSIFIED

39  FROM THE FIELD

40  PRACTICAL RIGGING
For some the 1993 season has already begun.

For others it's like the quiet time before the big event begins! Everybody is excited, full of anticipation, enthusiastic, confident and ready to go. Our only hindrance is the weather.

In some places business is better than in others. The general attitude is positive. The only area of concern that I hear about is the uncertainty in Washington and when the weather will let people get to work.

How will business really be in 1993? Early signs are pretty good. Many arborist firms had better winters than they have had in recent years. Others sold more, but weather has limited their production. Some are still at the starting gate waiting for anything to happen. It's a typical spring in the tree care industry.

When there is a break in the weather, property owners will walk outside, look up and begin to think about their landscape needs for 1993. Your phone will ring. Suddenly you will be so busy you won't even think about the doldrums of the past winter. It has been ever thus!

In many areas, competition will be more fierce than ever. When unemployment is up, everybody with a pickup and a chain saw is a tree expert. Don't let that rattle you. There are clients who will always buy on price only, no matter who offers it. There is no amount of licensing, certification or anything else that is going to change that or the fact that some unqualified firm or individuals are going to underprice you. Don't waste your effort worrying about something you can't change.

What are the hot buttons for the tree care industry to push right now? Customer service and quality performance. They are also the hot buttons for every other American business in 1993. Public awareness of quality and service has never been higher. Businesses that meet those challenges will be the most successful.

I feel pretty optimistic about 1993 - you should, too!

Robert Felix, Publisher
INTO MORE CLEARING AND MORE TREE REMOVALS?

STEP UP TO A MODEL 1400 TREE BANDIT

- Plenty of capacity – 14” diameter
- Plenty of power – 200-HP
- Easy to move and maneuver – towable with a 1-ton, weighs 17,200 lbs.
- Compact enough to work street side
- Eliminate labor – feed trees with the loader
- Available with or without operator’s cab

OR STEP UP TO THE TREES WITH A MODEL 1400 TRACK BANDIT

- Eliminate the need to skid or forward the trees
- Ideal for lot clearing – right-of-way widening and clearing
- Powerful undercarriage – good clearance and flotation with the Cat E70B undercarriage

Bandit also offers 19” capacity towable or self-propelled whole tree chippers.

Call or write today for additional information and/or a demonstration.

BANDIT INDUSTRIES, INC.
6750 Millbrook Road • Remus, MI 49340
Phone: (517) 561-2270 • Fax: (517) 561-2273

Please circle 6 on the Reader Service Card
All About Rope

By Donald Blair

Rope. We hold ourselves aloft with it. We let trees down with it. Rope and saddle are words tied together like salt and pepper or bacon and eggs. Surely a handsaw and a length of rope were the very first arborists tools and have remained with us from the beginning to this very day. Rope even predates tree saddles, the worker fashioning support in the form of a bowline-on-the-bight. Rope was surely used in the construction of the pyramids. For over 5,600 years rope meant natural fiber. The use of manila fiber began around 1686 and was brought to the United States in the early 1800s by Naval Lt. John Wye. Arborists began with manila and used 3- and 4-strand hemp for more than 70 years before finally writing them out of the industry with the 1988 revision of the ANSI Z-133 standard.

The West Coast Davey standard was a 9/16-inch, 4-strand Tubbs Cordage product. My first climbing line was 1/2-inch Columbian Group tree surgeons grade 3-strand manila with a green marker. It was popular on the West Coast until Tubbs began to import Manco 3-strand tree surgeons with a blue marker. Manco marked the beginning of the end of the era of manila climbing lines around 1977.

World War II saw great advances in the development of synthetic lines, particularly that of nylon for use in the paratroops. I think in part due to tradition and partly to the higher initial purchase price, synthetic climbing line was slow to gain wide acceptance in the industry. By the mid-1970s, dacron 3-strands were beginning to prove their worth as reliable, long-wearing and cost-effective. About the same time, world industrial demand for manila began to decline. The Becker Scale, a rating of quality, was downgraded so that Grade One would not have been accepted as such by experienced users.

In the cordage industry, rope is anything larger than one inch in circumference; anything else was called small stuff. The word rope was seldom heard on shipboard, where it generally referred to new stuff in unbroken coils. But a man is no sailor (or climber) until "he has learned the ropes." (Ashley Book of Knots, 1944)

Line is a common name for cordage aboard ship as it is in arboriculture, but the word appears to be without specific meaning. Climbing line, throw line, lowering line, hand line, load line, ride line, scare line, rag line, and flip line indicate the indiscriminate range covered by the term. Thus, we will use rope and line interchangeably.

Rope guide

Please take the time to read and understand this section on rope. Your personal safety depends upon your knowledge. Your life depends upon your choice, care and inspection of your rope products. It's not called lifeline for nothing! Tree climbing, technical rigging and removal are hazardous activities. It is the responsibility of the user of the equipment to obtain competent instruction and take adequate safety precautions. The information and advice in this article are not substitution for instruction by a competent person in proper techniques and safety.

Before selecting a rope, it's important to realize that no one rope can do it all. Are you climbing on rough-bark trees? Is pine pitch a problem? Does your rigging include pulleys and technical aid or do you rely upon trunk wraps to control descent? Do you footlock with a prusik loop? You must first consider these factors and then choose the rope or ropes most appropriate for your application.
Ten Commandments of Rope Care

1. Honor thy rope as thy life.
   Climbing line is lifeline! A person who is careless with rope displays ignorance of basic safety and contempt for coworkers who depend upon that rope for their lives. Never step on a rope, drive a truck over one or tolerate those who would.

2. Keep thy rope away from all harmful spirits.
   Chemicals are among your rope’s worst enemies. Although polyester is supposed to have high chemical resistance, why risk your life by using a rope that has been soaked in who knows what? Pure pitch can do strange things to climbing line. We have observed both stranded and braided lines with enough pitch in the core to make the rope as stiff as if it had been molded in fiberglass for as much as 12 inches, even when the jacket had been cleaned.

3. Do not consort with ropes that are unclean lest you suffer a fall from grace.
   Dirt is harmful to rope. To a rope fiber, sand and dirt particles are like a street gang with broken beer bottles and cheap switchblades. The best way to clean a rope is with a rope washer, which attaches to a garden hose or directly to the faucet. A series of jets flush loose grit out of the rope. You can also toss your rope in the washer, but treat it like expensive underwear. Use a delicate setting and wash in cold water. Ivory and Woolite are popular soaps. Do not use detergents or fabric softeners. Air dry! Front loading, tumbling type washing machines are recommended as top-loading agitator type machines present more problems for tangling and possible rope abrasion against the agitator. Don’t try to pack too much rope tightly into a washer. Keep it loose. Don’t forget to take your climbing snap off first. It’s a good idea to ‘chain’ up the rope to keep it from tangling or getting caught in the machine. You can also place your rope in a laundry bag and wash the whole thing.

4. Elevate thy rope above the downtrodden.
   Coil and suspend rope from a storage rack or truck locker set up specifically for rope, or flake (coil) rope into a rope bag. Do not store rope on a concrete shop floor. Concrete contains compounds that are destructive to rope. Grit is more easily ground in the rope if it’s stored where it can be stepped on or driven over. Chemical spills can be absorbed by rope kept at ‘ground zero.’ Anything heavy and sharp that gets dropped is more likely to land on a rope that is ‘laying down on the job.’

5. Be neither a borrower nor a lender of climbing line.
   You don’t know where the rope you might borrow has been and you won’t know where yours will go if you loan it out. Climbers and their ropes should mate for life [the rope’s] and remain faithful to each other throughout that union.

6. Do not treat thy rope as a beast of burden.
   Your lifeline should never be used for any purpose other than climbing. The only exception is that of “handline” used for raising and lowering such articles as lunch, pruning tools and other ropes. Overloading a rope is a matter of degree. Too much overload and snap! — the rope is broken. Less overload can create damaging amounts of heat friction, especially if using natural crotches instead of pulleys. In addition to the risk of heat fusion failure, overloading can weaken a rope enough to set it up for failure at a future date. A heavily used rope will often become compacted or hard, which indicates reduced strength.

7. Keep thy rope cool.
   Heat kills! Tensile strength charts apply to ropes tested at 70° F. As temperatures increase, rope strength is steadily reduced. Here are the 1) 50% strength loss temperature, 2) sticking temperature, and 3) melting temperature, in degrees F., for common types of rope fiber: Polypropylene 150°, 302°, 330°; Nylon 350°, 455°, 460°; Polyester 370°, 455°, 480°. *Sticking temperature refers to the temperature at which the fibers become tacky. If you’ll notice, the sticking temperature is close to the melt-down temperature. In much the same manner as a Boy Scout rubbing two sticks together to start a fire, heat fusion occurs when one rope is stationary and another runs across it in one spot to generate friction heat.

8. Know the paths thy rope has traveled.
   Keep track of its history. You cannot test a rope for strength without destroying it. Your safest rope management policy is an outside calendar date for replacement, if it is not replaced before that as a result of daily inspection. You must inspect your ropes as well as your safety equipment daily.

9. Do not associate with the coarse nor the abrasive.
   All rope will be severely damaged if subjected to rough surfaces or sharp edges. Do not take wraps on bumpers or channel frames such as those found on brush chippers. Use a cambium saver or a pulley if you are climbing in an exceptionally rough-barked tree. Technical rigging aids such as deadeyes, capstan winches and Figure-8’s must be kept in good condition and free of burrs, nicks and rust on the rope-bearing surfaces. Pulleys must be free to rotate and should be properly sized for the rope selected. Pulleys must be rigged so that the rope is free to run in line with the sheaves and not pulled at an angle across the sideplates.

10. If thy rope offends thee, cut it with a knife and cast it into the deepest pit.
    We’ve already discussed cutting off the glazed and worn ends of climbing line that develop where the tautline hitch is tied. Other damage to rope such as pole pruner nicks, handsaw cuts, etc., must also be amputated. Never put a damaged rope into storage until the damage has been repaired or removed.
Rope construction

The major objective in manufacturing ropes is to effectively convert yarns into finished ropes. Cordage manufacturers refer to the conversion efficiency of a given type of rope as a way of rating the various factors of strength, weight, stretch, abrasion resistance, energy absorption and fatigue.

Quality control is critical to the production of ropes to which arborists trust their lives. Quality depends on every aspect of production, from inspection of the incoming yarn, machine setups, random inspections during processing and final inspection of the finished product.

One key element in efficiently converting filament into rope is careful control of yarn tension in every stage of production. Strands braided at different tensions or with varying twist levels do not work together equally in the finished product. Poor quality rope will break below its rated tensile strength and wear out prematurely because a small percentage of the rope’s fiber is forced to carry more than its fair share of the load.

A high-quality rope designed specifically for climbing or removal may cost more initially than a piece of rope that you can buy in a hardware store or at the flea market, but cheap rope could be your poorest investment.

Ropes made using block creel construction eliminate internal splices by making the rope only as long as spools (creels) can be loaded with fiber for a single run. For example: Half-inch climbing line is available to a maximum length of 2400 feet. Inconsistencies larger than tiny yarn knots are unacceptable in lifelines. Return questionable rope for replacement.

Rope types

Ropes used in other high-angle environments are not necessarily suited for standard tree maintenance operations. Examples of other high-angle environments and their rope types are:

Kernmantle - A compound German word. Kernmantle construction consists of a central core (kern) of fibers covered by a woven sheath (mantle). The inner filaments carry the greatest burden of load. The outer cover is woven tightly to shield the core from abrasion, dirt and sunlight. Kernmantle design is the rope of choice for most high-angle environments other than tree maintenance. Kernmantle ropes come in two styles: dynamic and static. Due to nylon’s superior shock-load absorption capacity, dynamic kernmantle ropes are made with a nylon core. However, nylon is not a bungee cord. It is not able to stretch indefinitely. The more it is stretched, the more it stays stretched and less able to sustain an impact. This is why manufacturers recommend that you retire any rope that has caught a severe leader fall.

Dynamic kernmantle is used in belayed rock and ice climbing. It is pliable, and easy to knot and rig through hardware. Dynamic kernmantle is designed to stretch 40-60% of its length before breaking. This is important for absorbing the shock of a long fall off El Capitan, but a climber working in a tree 10 feet above 7200 volts doesn’t want a line that will stretch 16 feet before it catches him or her. ANSI Z-133 standards specify the maximum working stretch of an arborist’s climbing line at 7% when loaded to 540 pounds (10% of mini-
Time is money in the tree care business, and the time you save with Versalift puts money in the bank.

Fewer set-ups, more worktime are just two reasons the VERSALIFT VO-50 is the choice of tree care professionals from coast to coast. It's been field proven to be an effective, hardworking, and dependable tool. The VO-50 gives you reach and movement others can't match, and it's done without troublesome cables or chains, meaning safer, low-maintenance operation.

To see a VO-50 on your work site, call or write today for more information and the name of your nearest VERSALIFT distributor.

It's TIME to check out VERSALIFT!

VERSALIFT

P.O. Box 20368  Waco, Texas 76702-0368
(817) 776-0900 TELEX (910) 894-5218  FAX (817) 776-7531
From a rope manufacturer’s viewpoint, about everything we do to a rope...runs counter to everything they consider to be “good” for the safe use of rope.
SPECIALIZED TRUCKS IN STOCK

1986 Ford LNT9000; 3208 CAT; 13 Spd.; w/R.O.; TC175-63 Crane; 16 Ton Cap.; 75+37’ Jib = 112’ Total Hook Height .......... $67,000

1987 Ford; 7.8 Diesel; 5+2; w/R.O.; TC1150; 11 Ton Cap.; 65’ Boom = 29’ Jib = 86’ Hook Height .......... $61,000

1990 Int’l.; DTA-360 Diesel; 5+2 Spd.; w/JLG 1000BT; 10 Ton Cap.; 71’ Boom Hook Height .......... $47,000

1986 International; Diesel; 5+2 With R.O.; TC130; 63 Boom; 37 JIB Ton Cap.; Spd.; w/JLG 2000BT; 10’31’ Boom Hook Height .......... $43,500

1986 Ford L-8000; 3208 CAT; 10 Spd.; w/National 666A Crane; 12½ Ton Cap.; 76’+42’ Jib = 118’ Hook Height .......... $54,000

1989 Mack DM690S; 300 H.P.; 6 Spd.; w/R.O. 175-73 Crane; 16 Ton Cap.; 85’+37’ Jib = 122’ Hook Height .......... $89,500

1976 INT’L; V8; 5+2; w/75’ RADOCY Sign Crane. .......... $5,500 & Up

1984 Ford L-8000; 3208 CAT; 10 Spd.; w/National 666A Crane; 12½ Ton Cap.; 76’+42’ Jib = 118’ Hook Height .......... $54,000

1985 GMC 4x4; Diesel; 20,000 Original Miles With Sterling GT-7 Diesel; 1600 Hours; Excellent Condition .......... $49,000

1988 Ford & Chevrolet; V8; 5+2; w/HOLAN 805 42’ Material Handling Bucket .......... $26,500 & Up

1983 Chevrolet; Diesel; 5+2; w/LR50 ASPLUNDH Bucket & Chip Body .......... $29,500

1976 To 1982 Twists T400; Place’ Units; FORD & CHEVROLET; Gas & Diesels. .......... $4,500 & Up

1978 To 1982 GMC; Gas Or Diesel; 2 Wheel Or 4 Wheel Drive; ASPLUNDH LB42, LB45 Material Handler Buckets ......... $12,500 & Up

(2) 1986 Ford LNT9000; 3208 CAT; 13 Spd.; w/R.O.; TC175-63 Crane; 16 Ton Cap.; 75+37’ Jib = 112’ Total Hook Height .......... $67,000

(19) HYAB; IMOCO; NATIONAL, Etc. Knucklebooms Unmounted Or Mounted .......... $2,500 And Up


(10) 1976 To 1982 Twists T400; Place’ Units; FORD & CHEVROLET; Gas & Diesels. .......... $4,500 & Up

(1) 1980 Ford F600; V8; 4 Spd.; w/Versalift 28’ Bucket; 9’ Utility Body; Onan 2 Cyl. Generator .......... $37,900 Ea.

(3) 1980 Ford or Chevy; V8; 4 Spd.; w/Onan Generator, Heated Air, Comp. & Utility Bodies .......... 5,900 Ea.

Rayco Stump Grinders; (10) New, (6) Used In Stock.

(2) 1986 Ford & Chevrolet; V8; 5+2; w/HOLAN 805 42’ Material Handling Bucket .......... $26,500 & Up

(10) 1976 To 1982 Twists T400; Place’ Units; FORD & CHEVROLET; Gas & Diesels. .......... $4,500 & Up

(3) Telescopic Bucket Trucks; 38’ To 50’ .......... $15,000 To $26,500 Ea.

(1) 1980 Ford or Chevy; V8; 4 Spd.; w/Onan Generator, Heated Air, Comp. & Utility Bodies .......... 5,900 Ea.

(3) 1980 Ford or Chevy; V8; 4 Spd.; w/Onan Generator, Heated Air, Comp. & Utility Bodies .......... 5,900 Ea.

(3) 1980 Ford or Chevy; V8; 4 Spd.; w/Onan Generator, Heated Air, Comp. & Utility Bodies .......... 5,900 Ea.

(12) 1980 Ford or Chevy; V8; 4 Spd.; w/Onan Generator, Heated Air, Comp. & Utility Bodies .......... 5,900 Ea.

Rayco Hydro Grassers & Power Mulchers In Stock; New & Used.

OPdyKE INC.
(215) 721-4444
Truck & Equipment Sales
3123 Bethlehem Pike
Hatfield, PA 19440
(Phila. Area)

Please circle 31 on the Reader Service Card
Arthur Prunng (as throwline, pole pruner rope and for tying down brush. Do not be tempted to use that 3/4-inch swap meet special for lowering!

**Blended polyester and polyolefin.** When used as a core shielded from heat, abrasion and sunlight by an outer jacket of polyester, polyolefin creates a lightweight, high-strength rope that costs less than comparable 100% polyester ropes. XTC-12 and Arbor Plex are examples of blended single-braid, 12-strand arborist rope. Safety Blue Braid and XTC are examples of blended 16 individual strands of polyester plies over para-ep olefin. A core of high-twist fiber keeps the construction firm and round.

**Arborist rope construction**

From a rope manufacturer’s viewpoint, about everything we do to a rope - climbing with a tautline hitch and severe shock-loading of rope by dropping big blocks of eucalyptus onto it - runs counter to everything they consider to be good for the safe use of rope. That is why we have to be so careful with our selection, inspection, care, and rigging of rope. We start our day by expecting rope to perform safely and predictably under conditions that are often hostile to the rope we depend upon for our lives.

You must use rope recommended by the manufacturer as suitable for tree work!!

We start our day by expecting rope to perform safely and predictably under conditions that are often hostile to the rope we depend upon for our lives.

**Laid 3-strand** - This is time-honored classic rope construction. For more than 1000 years, fiber has been twisted into a strand and then strands are twisted into rope. This construction technique is the hardest on fiber. As a result, laid rope has the lowest conversion efficiency of the two strands of same diameter. Laid ropes generally have a lower tensile strength than braided rope of the same diameter. Although 3-strand laid ropes are still common in arboriculture, they have been pretty much replaced by ropes of various braided construction in other high-angle environments such as mountaineering, climbing, vertical caving, and search and rescue. Some claim that braids outwear strands by a factor of 1.5 to 2. Ten years of field use does not support that claim. In tree work, 3-strands such as Safety Blue, Silverlon and Blue Fleck have proven themselves less likely to snag and offer greater abrasion resistance. However, initial cost and service life are not the only factors that must be considered. Even though braids probably don’t last as long, they have become more popular than 3-strand because of their superior handling characteristics under most applications.

While laid ropes represent a lower initial purchase cost, most of their disadvantages are due to the characteristics of their construction. Laid rope takes longer to break in and is more likely to kink unless carefully handled. It also tends to untwist slightly under loading, causing spin and kinking. And it will stretch a lot more than an arborist’s grade braid. When working over a roof with three feet of clearance, you don’t want a rope that will stretch eight feet! Laid ropes are one reason why Ed Hobbs designed the Lowering Device with a ratchet mechanism that allowed us to take all of the stretch out of a rope before cutting.

Laid rope does not work well at all with figure-8 descend. The spiral of the rope serves like the rifling in a gun barrel, causing the rope and figure-8 to twist into an unmanageable tangle. Laid rope has a tendency to corkscrew up beneath the tautline hitch.

**Plaited rope - 8-strand** - Square braid is made of eight strands woven together as four pairs. Sort of a braided 3-strand, its nubbier surface more closely approximates 3-strand and has similar wear characteristics.

Virtually identical in strength to a 3-strand, it has excellent energy absorption properties and it will not twist or kink like a 3-strand will.

Although easy to handle, some general duty ropes are woven together somewhat loosely, resulting in low abrasion resistance and susceptibility to picking (snagging). Ropes designed for arborist use have been specially formulated to minimize these problems.

**Single braid - 12 and 16 strand** - Exactly the opposite of kernmantle design, single-braid ropes derive their strength from the outer fibers because there is no core. The void is filled with a core of highly twisted polyester on some 16-strand braids; 12-strand arborist ropes typically omit the filler as a means of keeping the weight and cost below that...
THE TREE CUTTER ADVANTAGES
AVAILABLE IN HYDRAULIC OR MECHANICAL DRIVES

1. Tremendous flywheel effect created by a 500Lbs. blade bar, reduces tractor lugging while cutting heavy material.
2. Blade contact 54 times per second created from 810 RPM blade bar speed.
3. Cutting diameter up to 8" (depending on model) allowed by open back cutter deck design.
4. Can replace your standard grass mower as well as your chain saw (in most conditions).
5. Can cut down and grind the material in a matter of seconds saving you time and money.
6. Proven in all types of terrains (limited only by your tractor).

*The only TRUE heavy duty mower on the market, with unit weights of 1,750 Lbs to 2,400 Lbs.
*10's of thousands of miles of experience; unmatched in serviceability, in Right-of-ways across the country.
*Over 3,500 units in operation in all types of industries.

CALL TODAY FOR MORE DETAILS AND FREE BROCHURE.

1-800-633-8909

Please circle 8 on the Reader Service Card
of 16-strand.

Advantages include low stretch, no rotation, and excellent strength-to-weight ratio. It is priced between laid rope and kernmantle.

Single-braid cannot be spliced. Although they work well with a tautline hitch, most single-braids will creep and should be backed up with a figure-8 knot in the rail for security.

Single-braid is more susceptible to picking than 3-strand. In general, 16-strands are more susceptible than 12-strands, but 16-strands perform better overall as a climbing line than 12-strands.

The purpose of the core filler is to keep the rope firm and round, which is desirable for optimum performance with a tautline hitch. This core filler does not contribute to the strength of the rope. Never consider the filler an indicator of wear or back-up in the event of accidental cutting.

**Double braid** - This rope is essentially two separate ropes in one. The single-braid core is over-braided with a second sleeve. The design allows maximum flexibility options in engineering a rope for a particular application. This construction entirely shields one of the two rope elements from abrasion.

Double-braids are used widely in marine and utility applications. Double-braids, for instance, make excellent winch lines. We first used a 1-inch double-braid as a lowering line in 1979 to remove redwoods in saw log lengths. With a 40,000-pound tensile strength, it was twice as strong as a 1-inch, 3-strand nylon without the stretch. A 240-foot length makes an 86-pound bullrope that costs about $400, but the margin of safety was worth the expense. Although they have been available for more than 20 years, because of price and tradition double-braids have only recently become more accepted among arborists.

Double-braids are soft, flexible and can be spliced. There is a wide range of choices in filament and performance options. Low-stretch blends make excellent winch lines and lowering ropes when used with pulleys and technical aids that prevent the rope from being wrapped around the trunk.

Double-braids are susceptible to picking, but urethane coatings can greatly improve performance under severe conditions. When cut around its diameter, the sheath tends to slip down on the core, like a sock with no elastic.

Double-braid is ideal for use in slings and the speed line because the rope is not subjected to being run over rough surfaces. Using double-braid slings with single-braid lowering lines builds in a 2:1 factor: Your anchor is twice as strong as your bull rope. This is in keeping with Blair’s Law of always being sure that the weakest link in the rigging is the rope.
Questions And Answers About Rope Care

Q. You’ve talked a lot about daily inspection of my ropes. Damage such as a deep cut is obvious. What other things should I be looking for?
A. Rope inspection should be an ongoing process of observation before, during and after each use. It doesn’t have to be complicated or time-consuming. Learn the look and feel of your ropes. Look for:

- **Discoloration:** Most climbing lines in the white will gradually change in color to grey. Brown, black or green could indicate chemical damage. If the skin on your hands begins to burn and slough off while you’re handling it, you should suspect chemical contamination.
- **Glossy or glazed marks or streaks:** Could indicate heat fusion damage. We have observed overloaded lowering lines (particularly of blended design) with long, brown glazed steaks that resemble a melted crayon.
- **Inconsistent diameter:** Be aware of any lump, bulge, flat spot or other anomaly. Be particularly alert for the hourglass effect. This necking down of the rope can indicate damage to the core, especially on kernmantle and double-braided lines as well as on cored single-braids.
- **Excessive fraying:** On a braided line, if more than half of the outer sheath yarns are broken, it’s time to retire it.
- **Feel for:**
  - Stiffened fibers and obvious changes in diameter: Again, you’re feeling for nicks and the hourglass effect (on braided ropes only). On double-braided lines, some types of damage will result in puffs, core fibers protruding from the sheath.
  - Contamination with dirt and grit: Give it a bath.

Q. When should I retire my rope?
A. Before it breaks! Tests to accurately determine rope strength also destroy the rope. Because of all the variables involved in rope usage and individual care, there is no industry-wide average life expectancy for arborist ropes. Inspection procedures to determine obvious defects that require immediate retirement have been covered in detail. The big question arises as to when a rope that continues to pass inspection should be retired. High-angle technicians use a general guideline of not keeping a rope beyond four years, and this is only when used occasionally. Weekend climbers figure two years as a working life. Full-time climbers figure the life expectancy of their ropes to be somewhere from three months to one year.

We have long maintained that it makes good policy to give vital personal safety equipment such as climbing lines and snaps a birthday between 12 and 18 months. Lowering lines are dependent upon frequency of use and care, but the outside edge for all ropes of four years seems as reasonable for the arborist as it does for search and rescue specialists. You cannot buy a trip to the Emergency Room (if you’re that lucky) for what your
rope strength can become a significant cost to replace in a timely manner.

Q. How do I calculate rope strength?
A. Manufacturers use a variety of tests and percentages of breaking strength to determine working loads. Unfortunately, there are so many variables among interpretations of these testing procedures that a manufacturer's published data may not be comparable to the test data of another manufacturer's tests of what is supposed to be a nearly identical product. Federal Test Standard 191A, Method 6016 is the one test that provides for a level field of rope test comparison.

Working loads as given by most manufacturers are for rope in good condition with appropriate splices, in non-critical applications and under normal service conditions. To further complicate the value of published data, some list the Average Breaking Strength and some list a Minimum Breaking Strength. Minimums are defined as not greater than 10% below the average. That can mean as much as 700 pounds on some of our climbing lines and more on some of our lowering lines that have PRBSs of 17,500 pounds and more. A 10% variance on a 1-inch double-braid could mean a rope that could break 4000 pounds below where the manufacturer said it would! Some even use 15% as their minimum breaking strength. Read! Read! Read!

Use the Blair Weak Link Law: When in doubt, always work from the lowest known number. If the rating suggests an average strength, knock off 10% for good measure and then calculate working loads. Under these parameters, working loads for nylon and polyester average 20% of published strengths for a safety factor of 5:1. Read the fine print! These ratings do not apply to lifelines, rescue lines, safety lines, climbing lines, lowering lines, towlines or the like.

Some high-angle groups and individuals accept a safety factor of 10:1. All arborist rope makers document 10:1. The National Fire Protection Association (NFPA), similar in function to our own National Arborist Association, recommends a 15:1 safety factor. Blair’s Formula for years has been to start with 10% of the tensile strength and then take half of that figure because of the weakening effect of knots and the fact that most people cannot accurately guess the weight of a log. In effect, Blair’s Formula is 20:1. It is an ideal that may be hard to achieve in practice. The point is to be aware.

Climbing line isn’t a problem. Our concerns with rope strength are primarily related to removal, where we have to drop and catch large wood without breaking the rope. We use polyester because it is a low-stretch fiber. Because of that, dynamic loading effects are going to be greater than they would on a high-elongation fiber such as nylon. Dynamic effects are going to be greater on a shorter rope than on a longer one because there is less fiber available to absorb shock loading.

Q. You said that knots have a weakening effect upon rope. Please explain.
A. All knots reduce the overall strength of rope to some degree. As a general rule, knots with tight bends such as bowlines cause greater strength loss (as much as 60%) than do hitches and knots with more open bends such as the clove hitch or figure-8 family of knots. Rather than learn the relative strength loss for each class of knot, bend or hitch, a good general rule is to allow for a 50% loss of rope strength whenever a knot is tied. Strength loss occurs whenever a rope is sharply bent.
because the rope fibers on the outside of the bend receive a greater share of the load. A 50% strength loss is the result if only half of the rope fiber is carrying the load. Rigging through a carabiner or shackle rather than a pulley or deadeye may subject a rope to some strength loss. Keep that in mind when you are calculating a safe working load.

Q. You’ve warned me about sharp bends. What constitutes a safe diameter formula?
A. I have received authoritative answers ranging from 2.5:1 all the way to 8:1! The process that wears out a rope running over a sheave is called cycles to failure. In dynamic bending over sheaves, dead eyes, etc. at the highest common industrial safe work load rating of 5:1, a sheave with an 8:1 ratio provides the highest number of cycles to failure. Search and rescue theory and practice typically accept a 4:1 ratio because their safe working loads are calculated at 15:1. Example: A 5000-pound test half-inch rope loaded to an industrial rating of 5:1 (1,000 pound payload) should be run over a 4-inch sheave. Loading that same rope to search and rescue standards of only 333 pounds permits the use of a 2-inch rescue pulley without compromising the strength of the rope. Also, search and rescue people replace their ropes long before the average arborist would. If all you want to do is have your lunch or a chain saw pulled up, a micro-block with a 1-1/2-inch sheave will serve your needs safely.

Q. Are there any other factors peculiar to tree work that might have a weakening effect upon my rope?
A. The angle of the crotch that you tie into is an important factor. Tests conducted by the New Bedford Cordage Company and Asplundh Tree Experts prior to August 1952 proved that the flatter the crotch angle, the less effect there was on rope strength loss. A brand new line in a narrow crotch angle will break under a much lighter load than if the crotch angle is near 90 degrees. Of course, if the angle is too tight, you’ll have trouble getting the rope to run freely in the crotch. Although these tests were conducted with manila, the principles are applicable to synthetic fiber:

1. A narrow crotch weakens a rope in much the same manner as a knot or running over a tight bend - it reduces the percentage of load-bearing fibers.
2. A narrow crotch can present more danger of abrasion and friction that could lead to heat fusion failure. Look for a wide-angle crotch to tie into or use technical aid.

Q. Can you further explain the dangers of heat fusion failure?
A. Certainly. Failure as a result of overheating can create a potential for tree failure. When you need strong tree crotch support, remember the 3R's...

Reinforce... Reduce... Relax...

... the crotch of a tree with a prefabricated TREE-CROTCH Grip from Preformed Line Products. TREE-CROTCH Grips are manufactured from heavy coated galvanized steel, and have a strength capacity of 5,000 lbs. to provide consistent reinforcement for high stress areas.

The TREE-CROTCH Grip comes in three sizes: 20", 30", and 36" to accommodate short tree crotch lengths.

... costs by eliminating the need for common grade cable inventory and labor intensive serving methods. TREE-CROTCH Grips are easily installed and do not require any special tools, so chances of workmanship errors are reduced.

The specially designed captive loop holds the thimble securely in place, eliminating lost parts and making the overall appearance neat and uniform.

...TREE-CROTCH Grips, like all PREFORMED products, are lab-tested and performance proven to maintain a standard of excellence unmatched in the industry.

Remember the 3 R's:
- Reinforce the tree crotch.
- Reduce costs, installation time, and workmanship error.
- Relax knowing you’ve chosen a quality PREFORMED product.

When you need strong tree crotch support, remember the 3R's...

Contact the PREFORMED distributor in your area for more information.
heating can happen quickly, without warning and the effects can be catastrophic. Examples of situations that can lead to heat fusion failure in tree work are:

1. Burn-out descents. All arborist climbing lines are capable of heating up enough in the tautline hitch to cause melting through. Heat damage can be cumulative. A rope may be repeatedly brought close to the failure point without going over the edge and then when a climber is not burning out the fatigued rope finally lets go.

   Watch your speed. Inspect your rope daily for glossy marks and stiffened fibers at the tautline hitch. Cut off any damaged portions. Rotate your climbing line end for end on a regular basis.

2. Two separate lines crotched together. Examples: a tag line and lowering line. An aerial rescuer tying in to the same crotch as the victim.

   Rig your lines so that they cannot cross each other. Use technical aid (such as a pulley and sling) if necessary.

3. Rope run through an unprotected rope or sling (fiber on fiber).

Always run the rope through a natural crotch, pulley, deadeye or shackle. Never run a rope through an unprotected rope or webbing sling. NEVER, NEVER, NEVER!

Q. Is there a formula for estimating the shock-load of a dropped log?
A. To be truly accurate, you would have to consider specific shock and energy absorbing properties of the rope involved, the length of rope available to absorb the shock as well as the obvious factors of the weight of the log and the distance it falls before it is arrested. A rough rule of thumb that probably does more good than harm, even though it doesn’t really work if you are a certified professional engineer is: For every foot a falling object falls, it gains a unit of weight plus one.

   Example: 500 pounds falling four feet will hit the rigging at about 2500 pounds. This formula is close enough to get you to realize the importance of keeping your rigging as close as possible to your work. Instant changes in load up or down in excess of 10% of the lines rated working load constitutes hazardous shock load and would void normal working loads. Whenever a load is picked up, stopped or swung, there is an increased force due to dynamic loading. The more rapidly or suddenly such actions occur, the greater the increase will be. Dynamic forces are greater on arborist ropes (polyester) than nylon and greater on a shorter rope than a longer one. Think of a rubber band. You can easily understand the strain involved in stretching that band (rope). You need also to understand the damaging effect the sudden release of that load has on the rubber band (rope).

   Example: Pulling a truck out of the mud, you pull a 7/8-inch, single braid until its fiddle-string tight and keep pulling until it breaks. In addition to the obvious damage where the rope broke, the entire run of line that was loaded has also been damaged at the instant it went KAAATIINNGGG! and busted out the grill and the left head light.


The author wishes to thank Susan Cook, Yale Cordage and H. Dennis Ryan III, University of Massachusetts/Amherst, for their invaluable assistance in reviewing this article.

Donald F. Blair, arborist, author and lecturer, is the owner of Sierra Moreno Mercantile Company in Big Pool, Maryland.
Mixing services

I received my February issue of *Tree Care Industry* and the cover immediately intrigued me as to what type of article followed the cover story.

This article (the author’s name was not on the article, so I assumed the staff wrote it) reminded me of a few years ago how the PLCAA and other lawn care magazine articles were written to tell the lawn care operator how easy it was to get into the tree and shrub care business. As I recall, these articles would state that tree and shrub feeding was profitable and tree and shrub pruning was something people could do when not busy with other chores, etc.

I’ve operated Antietam Tree Service for 25 years (hard to believe) as a tree company, 15 years as a lawn care company, and more recently as a landscape and irrigation contractor. I am telling anyone who really wants to be successful in any endeavor in the green industry: if they are going to sell themselves as either lawn care, tree care and any other two-service company, they had better have the program, personnel, equipment and expertise. I am not saying these businesses don’t mix, because you and I both know they do. But I don’t think you can do lawn care in your spare time or a lawn care technician be sent out to properly prune trees and shrubs - they had better have a most ingenious talent. I have found the services mix very well, but that employees and technicians don’t mix as well. I’ve seen a lot of stripped lawns and burned shrubs and trees because either the wrong technique was used or an improper material applied.

As always, I enjoy reading *Tree Care Industry*.

Roger Finn
Antietam Tree & Turf
Hagerstown, Maryland

Hoping for Treenet’s return

I would like to know if anyone knows (or cares) where Arbor Base and its last incarnation, Treenet, went. I am very much interested in the information and networking capabilities that are afforded through such a computer accessible system. I was disappointed to find out several days after I got my modem hooked to my computer that Treenet had ceased to be due to an equipment failure. That was a couple of years ago, and I don’t see any more mention of this system. American Forests (formerly American Forestry Association), who managed Treenet, said it was too costly to bring back on line by themselves. I would like to know if there are arborists out there who had taken advantage of the system and if anyone besides me would like to see it come back on line. I would find it remarkable if there was not, in this day and age, interest in this type of system.

Dennis Brown
Urban Forestry Resources
9800 Westward Drive
Austin, Texas

Letters should be sent to:
Tree Care Industry, Editor
P.O. Box 1094
Amherst, NH 03031
Motor Vehicle Rule On Hold

Officials at the Occupational Safety and Health Administration (OSHA) are reassessing the proposed Motor Vehicle Safety Rule as a result of a Congressional rider requiring review of the proposal's controversial contents. The rule was initially proposed in July 1990. Repeated delays have been caused by OSHA and Labor Department changes in leadership, and controversy of the proposal's requirements. According to Tom Seymour, OSHA's deputy director for Safety Standards, this rider will delay publication of a final Motor Vehicle Safety Standard for several months.

The proposal contains two controversial sections. First, employers are required to provide driver training to employees, and, second, ensure that all employees wear safety belts when operating motor vehicles. OSHA estimates that the safety belt portion would save over 400 lives annually, and mandatory driver education would save between 465 and 684 lives annually.

The proposed rule has the support of the insurance industry, but small business groups contend a motor vehicle safety rule is too costly. Currently, OSHA does not regulate motor vehicle use, an area of the workplace where 38% of all worker deaths occur.

OSHA's rule would require employers to have a written safety belt policy and a plan for monitoring employee compliance. Concern with how mandatory safety belt use whenever a vehicle "is in motion" would affect street tree maintenance and utility line clearance operations along with driver training program requirements prompted the National Arborist Association to submit written comments to OSHA on the issue.

Besides special driver training, the proposed rule would require refresher training every three years. Opponents of the proposal, including the National Federation of Independent Business, say mandatory driver training would be costly and may not reduce the number of accidents.

According to OSHA figures, the driver training portion of the proposal would cost industry $455 million at the program's inception, and about $200 million annually thereafter.

OSHA received over 500 comments on the proposal, including comments submitted by the NAA suggesting that the rule not apply to drivers of vehicles over 10,000 pounds.

Congress asked OSHA to look at whether safety belt use is actually effective in preventing worker deaths. Further, OSHA must clarify how a written drivers awareness program will improve safety and assess the potential costs of the Motor Vehicle Safety rule.

Seymour explained that much of the confusion about the driver training section surfaced because OSHA intended the drivers awareness section to be much simpler than industry perceived. OSHA intended to have employers outline mandatory seat belt use and areas of awareness such as stating that employers must not drink alcohol and drive.

OSHA is now in the process of answering Congress' questions on the proposed rule and is considering several alternatives to the original draft. This, combined with the fact that an OSHA administrator has not been named to date, puts the goal of publishing a final rule farther out of reach.

Minor Crop Protection Act Introduced

House Agriculture Committee Chairman Kika de la Garza (D-Texas) introduced the Minor Crop Protection Act (H.R. 967) to reduce the loss of pesticides used on minor use crops due to re-registration. Many pesticides registered for use on ornamentals and turf are considered minor use.

Under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), the Environmental Protection Agency (EPA) registers pesticides on the basis of scientific data that demonstrates that using the product according to label instructions will not harm people or the environment. In 1972, Congress required EPA to re-register all pesticides. Some had been on the market since FIFRA was enacted in 1947.

This re-registration process was again mandated by Congress in 1988 to ensure that all pesticides on the market meet current scientific, safety and regulatory standards. Congress amended FIFRA, requiring all pesticides on the market before 1984 to be re-registered by 1997. The re-registration process requires the registrants to test their pesticides to EPA specifications. This process is partially funded by annual maintenance fees to keep product registrations in effect.

Often, the extensive cost of these tests coupled with maintenance fees is so expensive that minor use products are withdrawn from the market completely. Each pesticide product is subject to more than 120 tests.

Some safe and effective pesticides registered for turf and ornamental use have lost their EPA registration. As a result, arborists may have to look for alternatives for some products.

H.R. 967 is expected to curb the loss of such valuable products. A companion Senate bill is anticipated soon.
A COMPLETE NEW ARBORIST PACKAGE INSURANCE PROGRAM

Reduce your insurance costs by up to 40%!

Call us today 1-800-ARBORS-1
(1-800-272-6771)

New Program for Arborists • Complete Coverage including Workers Compensation • Competitive Premiums • Safety Group Dividend

ALBIEZ INSURANCE AGENCY
SINCE 1929

2444 Morris Avenue, P.O. Box 1593, Union, New Jersey, 07083
FAX (908) 964-6720

Please circle 2 on the Reader Service Card
By Laddie F. Hutar

The world of small business is filled with the remains of many businesses that "Could Have Been" successful. Among the factors that contributed to their demise were the "We're Gonna" and the "We Used To" factors. Missing was "Do It Now."

In the small business world, time is not as strongly structured as it is in the corporate world where quarterly and annual statements must be reported publicly. In the small business world, the time frame generally is when the annual company tax return has to be filled out or when the bank requests a financial statement. Informality and convenience or availability are the overriding factors that govern how reports and financial statements are prepared. The areas mandated by federal and state governing bodies determine the reports (payroll taxes, FICA, unemployment taxes, income taxes, sales taxes, etc.) that are filled out and prepared.

When it comes to the future, the "We're Gonna" factor takes over. Many things get talked about for a long time, but nothing happens. The internal inertia within the company keeps the status quo.

Projects, enthusiasm and creativity eventually die and a dull routine takes over. The company begins to drift, and gradually its sources of strength are eroded. The good financial position weakens, productive, enthused employees leave, and the effective ways of doing things that contributed to profits are no longer used.

"We're Gonna" symptoms

"We're Gonna" symptoms include procrastination and lack of a good plan to give direction. Another is "forgetting" new ideas or suggestions as people get too involved in their daily routines or are spread too thin.

In the "We're Gonna" syndrome, no one wants to make a decision for fear of failure, risk and the unknown. Other times, laziness or poor work habits contribute to oversights.

On the management side, no specific priorities are set, periodic reviews aren't scheduled, no company strategy group is established to determine how to meet goals and there are no company policies to identify and improve standards of performance.

In other instances, management fails to follow up and tighten up on discipline to ensure that the delivery system is improved to cut costs, that a comprehensive training program for all employees is implemented and that costs are reduced in appropriate departments.

In a company suffering from the "We're Gonna" symptoms, profits aren't where they should be, assets erode, payroll and related costs are high and the company does not go forward. The company seems to drift and personnel loses enthusiasm. Eventually, the company loses its market share, falling behind aggressive and innovative competitors and losing its edge by becoming a "high-cost" producer.

The "We Used To" company

In the "We Used To" company, factors and activities that once contributed to the firm's success are no longer done. Control over inventory suffers, equipment is down more often and sales lag. Further, reports are not completed and turned in on time, and management spends more time analyzing business situations and problems.

There is another dimension that must be considered: the fact that the whole industry has changed. Everything is moving faster as the result of technological developments, customers are more demanding, gross margins are falling and competition is more severe than in the past.

Meanwhile, expenses continue to increase, particularly those over which the company has no control, such as taxes and insurance. The critical mass - the size a company must achieve in order to be able to buy right, pay right, sell right and make the right profit - is getting larger and larger. Business methods, techniques and operations are getting more sophisticated and require personnel to have more talent, skills and good work habits.

The routine of business can become dull and the staff finds short cuts. When this behavior and attitude are tolerated, the entire system becomes lax and routine tasks become too much of a bother and are no longer done. Eventually, lower standards are accepted and become the norm.

When this happens, personnel go through the motions and facilities become shabby. Complacency and mediocrity set in.

'Do It Now'

What is needed in this type of situation is an objective, well qualified, experienced outside source to help establish a "Do It Now" philosophy. An objective outside source is not involved in the daily tasks of "putting out fires" or satisfying egos. This source, therefore, is in a position to evaluate the "big picture" and the company's role in it. This person can rejuvenate a company by introducing new ideas, focus, technologies and methods for improving skills, productivity, paper flow, organization, communication, profitability and action plans. These are all invaluable tools for management's arsenal in these troubled economic times.

Laddie F. Hutar, CMC, is a certified management consultant and contributing author. He is the founder of the Hutar Growth Management Institute, a specialized management consulting firm dedicated to helping smaller companies achieve programmed growth. He can be reached at 1701 E. Lake Ave., Ste. 270, Glenview, IL 60025. Phone: 708-724-1910.
"Why did we join the National Arborist Association?"

"To learn to run my business better!"
Randy Owen, R.J. Owen Tree Service, Lum, Michigan

"One of the many reasons is NAA's Safety Programs."  Mark Tobin, President, Greymont Tree Specialists, Inc., Needham, MA

"For the wealth of information that NAA provides!"  Charlie McGinty, McGinty Bros., Inc., Long Grove, Illinois

"Because of all the benefits that I couldn't buy for 10 times the dues."  Paul Wolfe II, Integrated Plant Care, Rockville, MD

"To get their cost-effective training programs."  Bill Kucharski, Trees Are Us Professional Tree Service, Milford, NH

"To make my company more efficient."  Chuck Edmondson, President, Alfred's Superior Tree Service, Wichita, Kansas

"To learn from other industry professionals."  Tom Colon, Wonderland Tree Care, Inc., Oyster Bay, NY

There are many other benefits of membership that are also invaluable: the ability to network with other members, the free management guidelines and all of the other training programs that are available at substantial discounts to NAA members. In addition there are insurance programs, the annual management conference, marketing support and the NAA staff. You can call the NAA HOTLINE (1-800-733-2622) and ask any question about the tree care industry that you want. If the staff doesn't have the answer, they know where to find it for you.

If your firm is not an NAA member, why not JOIN TODAY—and start enjoying all of the benefits of membership.

SPECIAL OFFER: Join now for the NEW introductory dues of $150. Your annual dues in 1994 will be based on your firm's gross sales for 1993.

□ YES, I want to belong to NAA and take advantage of this "Special Offer"!
Enclosed is my payment of $150 for dues through 1993.

□ I'm interested. Send me more information.
□ Send me information on your training programs.

Name ____________________________
Title ____________________________ Company ____________________________
Street ____________________________ City ____________________________
State ______________ Zip ____________ Phone ____________________________

□ Check enclosed payable to NAA  □ Visa  □ MasterCard

Account # ____________________________ Exp. Date ____________________________

Signature ____________________________

Refereed by (optional): ____________________________

The National Arborist Association, P.O. Box 1094, Amherst, NH 03031
Phone 1(800)733-2622  Fax (603)672-2613

Membership starts when you submit certificates of insurance. Membership is available to commercial tree service firms only.
Branching Out

Arborists Look To Landscaping As A Sideline

By Shaw James Hazen

Many tree care companies have wrestled with this dilemma of diversification versus specialization. They may have all of their assets tied up in a crane, bucket truck or spray rig and it may be necessary to specialize in one particular aspect of the green industry in order to defray the costs of their capital investment and personnel training. Specialization can be lucrative when the phone is ringing and the calendar is full. Oftentimes, however, business is cyclical and depends on the weather, equipment downtime and employee availability. Due to these and other factors, gaps in the work calendar can arise. Sometimes this downtime can be a welcome respite, or it can be a cash flow headache that requires immediate attention.

Closing the gaps

Shifting to a sideline of landscaping can close those gaps. Many of us have chosen design, installation or maintenance. Peter Deignan, of Peter Deignan Tree & Shrub Care, of Walnut Creek, California, says his bailiwick is tree care. Still, he feels that “landscaping and tree work are like brothers - independent of each other, but of the same family. Landscapers and arborists are subsets of each other, and can deflect projects to one another. Unity between the two can create a strong alliance by reciprocal referrals.”

In some instances, Deignan says, many “tree folk” can replace landscapers outright. For example, he noted that after tree removals, the arborist is in a prime position to recommend and contract new plantings because he is in a better technical position than a landscaper to recommend species and planting sites. Tree planting often creates other opportunities for sideline work on a project.

Deignan has done numerous jobs for landscapers who are either unable or unwilling to take on tree-related tasks. “I’ve been approached by landscapers and customers alike regarding ideas on a variety of landscape-related subjects,” he says. “Landscapers usually require me to do heavy pruning or chipping. This work is generally too difficult or equipment-intensive to accomplish feasibly themselves. These relationships are often reciprocal, with landscapers doing tech-
Landscape maintenance can alleviate cash flow problems and provide steadier income for valued employees.

Steve Lambert, who is the owner of Garden Lights Design & Building in Orinda, California, says it is easier and cheaper to subcontract certain tasks than to rent the equipment himself. “Tree work is considered to be a subset of landscaping, but even so, I sub out 90% of my tree work,” Lambert says. “I usually handle my own ground work and felling and any pruning up to 15 feet for insurance reasons. I have a working relationship with a couple of tree services to do chipping and stumping, etc. I even dispose of construction debris from old fences and decks via tree chippers. We then use the resulting mulch on premises and escape cartage and dump fees, to boot.”

Lambert says that “sometimes small technical jobs are overlooked by arborists, but can be lucrative in the long run by establishing a working relationship for bigger jobs.” He noted, for instance, that an arborist once took a small stumping job on a weekend as a favor. The favor landed the arborist a $1700 tree job as well as the confidence of the customer and the landscaper.

Using ‘waste’

Landscape waste totals 18% of solid waste nationally, according to a recent study done by the Environmental Protection Agency. The study further claimed that this number jumped to 50% in peak months. A survey done by the National Arborist Association showed the national average for disposing of green wood disposal is $34 a ton. Thus, given the amount and cost of debris disposal, selling or recycling chips is becoming economically correct as well as politically correct.

Lambert’s company uses large amounts of wood chips on a yearly basis. On-site chipping for mulch eliminates transportation fees for hauling debris away as well as for bringing in mulch. Chipping on site is a “win, win, win, win endeavor,” he says. “The customer wins by saving money on labor and hauling; the designer/ installer wins by having yard debris transformed into a usable product; the tree service wins by gaining side work and establishing new customer relationships; and the environment wins any time that a waste product can be turned into something usable.”

Lambert advises that “redwood byproducts such as chips, timbers and limbs can be used inexpensively with great longevity and aesthetic success.” Arborists can cut and install their own material, or contact designers who would jump at the chance to receive materials from the source. Woods other than redwood can be used for construction, bordering, weed control, mulch, stepping stones and a myriad of other uses.

Materials other than wood chips can be created or sold under the auspice of design. Lambert notes that “90% of landscape design is contingent on a thorough knowledge of plants and materials.”

Many tree services use Alaskan-type lumber mills for various purposes. For sideline work, beams, slabs and panels can be fashioned for a variety of uses. “Custom-milled landscape timbers are superior to store-bought materials,” Lambert says. “The look and the cost are both better.” He also advises millers to contact designers to set up specs of custom work.

Stepping “stones” are another byproduct of the tree and timber industry. Because Lambert has had some problems with checking in redwood stepping stones, he doesn’t recommend their use.
use. Nurseries and designers do use them on a limited basis, however. A 3/4-inch thick round will retail for about 20 to 25 cents an inch (diameter). These “stones” can be cut from almost any type of wood, although some woods last longer than others in the soil and have different checking habits. The beauty of this endeavor is that it requires no special tools or training, just creative marketing.

Construction work
Landscape work can also take the form of decks, fences and retaining walls, etc. This can be a lucrative sideline as this type of construction is generally fairly easy, involving little investment in tools and training. Be aware, however, that some projects such as retaining walls and load-bearing decks may require special engineering. Failures may not be covered under true landscape insurance, let alone under tree insurance. In California, for example, landscapers are only qualified and insured to build retaining walls up to three feet high. Anything above three feet must be engineered. Building codes and permits could be another hitch in the construction end of landscaping. When in doubt about any undertakings of this nature, consult the appropriate authority in your jurisdiction. Likewise, any questionaline sideline work should be cleared with your insurance agent to guarantee thorough coverage.

Another construction-type sideline is hauling. Large dumping trucks are often unavailable to the average landscaper. Many projects require thousands of yards

WE MAKE THE SORRIEST LOOKING SPLITTER YOU'VE EVER SEEN!

We've had people look at our machine and say:

NO WAY!
... the wedge is too narrow,
... the pusher too small,
... the 'I' beam isn't wide enough,
... it'll never split the kind of logs we get!

That's what we hear all the time, from folks who haven't used one. Would you believe! Three (3) full cords an hour. On a tough machine, that won't quit!

To find out more; call, write or fax:

GFX CORPORATION
200 RECREATION PARK DRIVE
HINGHAM, MA 02043-4220
617-740-0350 • FAX 617-740-0355

Please circle 18 on the Reader Service Card
Upon successful completion of each Series, students will be awarded a Certificate of Completion.

**BASIC TRAINING FOR FIELD PERSONNEL**

**NAA’S Home Study Programs Make The Difference!**

The National Arborist Association’s Home Study Programs are easy to use, economical and result in more efficient, productive, profitable field personnel.

1. Field personnel do a much better job more safely if they know why they are doing what they are doing.
2. NAA’s programs can be put to use at any time from the first day of employment on.
3. Not everyone is ready for certification or even capable of becoming certified.
4. Everyone is capable of benefiting from NAA’s Home Study Programs.
5. The Home Study Programs serve as excellent preparation for those who aspire to become certified arborists in the future.

**COURSE OBJECTIVES**

Employee development has been one of the greatest problems in the arboriculture industry. It has been estimated that it costs you, the employer, more than $10,000 to replace and properly train a worker. The primary objective of NAA’s Home Study Program is to improve staff quality, dedication and professionalism while providing practical study that can be completed within the staff member’s own time frame.

**SERIES I AND SERIES II TOPICS INCLUDE:**

- Anatomy and Physiology of Trees
- Soils
- Compartmentalization of Decay in Trees
- Safety Practices of Workers in Shade Trees
- Pruning of Shade and Ornamental Trees
- Identification and Selection of Trees
- Transplanting Shade and Ornamental Trees
- Diagnosis of Shade and Ornamental Tree Problems
- Non-Parasitic Injuries to Shade and Ornamental Trees
- Insect Problems, Disease Problems
- Pollution Damage, Pest Management
- Fertilization and Watering
- Maintenance and Repair Practices for Shade and Ornamental Trees

**COURSE ADMINISTRATION**

Each section of the program contains an objective multiple choice test. Upon completion of each section, the student submits their test package to the NAA office for scoring. When the results are received, the student may proceed to the next assignment.

Upon successful completion of each Series, students will be awarded a Certificate of Completion.

**HOME STUDY BASIC TRAINING**

To Order your HOME STUDY BASIC TRAINING, simply fill out the Order Form below or call The National Arborist Association at 1-800-733-2622

**HOME STUDY BASIC TRAINING.** Mail this order form with your check or credit card number to: The National Arborist Association, P.O. Box 1094, Amherst, NH 03031-1094. Or call TOLL FREE 1-800-733-2622. In Canada call 1-603-673-3311. Please allow 2-4 weeks for delivery. Price includes shipping and handling charges. Offer expires May 31, 1993.

| Home Study 1: NAA/ISA members | (Quantity) | @ $80 ea. | (Non-Member) | (Quantity) | @ $105 ea. |
| Home Study 2: NAA/ISA members | (Quantity) | @ $80 ea. | (Non-Member) | (Quantity) | @ $105 ea. |
| Crew Leader: NAA/ISA members | (Quantity) | @ $50 ea. | (Non-Member) | (Quantity) | @ $75 ea. |
| Complete Set: NAA/ISA members | (Quantity) | @ $180 ea. | (Non-Member) | (Quantity) | @ $255 ea. |

**TOTAL**

Name: ____________________________ Company: ____________________________ Telephone: ____________________________
Address: ____________________________ City: ____________________________ State: ____________________________ Zip: ____________________________

[ ] MasterCard [ ] Visa Card Number: ____________________________ Exp. Date: ____________________________ Signature: ____________________________
Trees are good for you.

Tree roots are not.

Trees are beautiful, provide oxygen, cut down pollution and offer cooling shade on hot summer days.

Tree roots however break up sidewalks and other hardscapes, causing people to trip and leaving cities and others liable for injuries, repairs and restoration.

Patented DeepRoot™ tree root barriers provide a solution. Made with 50% recycled plastics DeepRoot has had proven results for 17 years and is specified by hundreds of cities nationwide.

To learn more about how DeepRoot can help the beauty of trees harmonize with the realities of the urban environment call or write to us.

Lighting and lawn care

Tree and building lighting is another sideline that is often overlooked by people in our trade. As for liability, hard wiring and electrical hookups should be left to an electrician. Lighting can be installed by ladder, climber or bucket, and can be enjoyable and interesting. Around the holidays, folks will be feeling festive after installing lights on a large pine or fir. It is a perfect foot in the door for firewood sales or spring pruning. Says Deignan: “Lighting is often neglected by arborists, but can be an excellent sideline as well as a work showcase.”

Lawn care is another sideline that is often overlooked. The weather is not always a factor so work can be handled many months of the year, unlike some tree work. A low capital investment makes it an easy aspect to pursue. It is also easy to train for, and has far less risk exposure than other work. Additionally, lawn care can be handled when trees are being worked on in order to help defray travel and labor expenses. Perhaps the biggest advantage is the captive market effect. The customer already knows the quality of your tree work, so he expects your landscaping work to be of equal quality.

Aside from lawn care, there are many other easy-entrance aspects of the landscaping sideline: rototilling, irrigation work, aerating, fertilizing and maintenance, to name a few. While weekly maintenance may not seem glamorous, it can keep people busy and can be an excellent marketing tool to help nail those bigger jobs.

Suffice to say that there are many aspects and angles to tree and landscape work. In order to turn those angles into greenbacks, one must first examine the market to find unfulfilled needs. Analyze your strengths and weaknesses, and see where you can cross train your people and your services to fill those needs. With this accomplished, you will stay busy, challenged and profitable.

Shaw James Hazen is the owner of Shaw Hazen Landscape & Tree Care in Orinda, California. He is also a part-time photo-journalist and writer.

It's not just the JR anymore......

.....It is the "SUPER JR"

20 hp self-propelled stump cutter

RAYCO®

"The Stump Cutter People"

4255 Lincoln Way East • Wooster, Ohio 44691 • Fax (216) 264-3697

1-800-392-2687 IN OHIO • 1-800-392-2686 OUTSIDE OHIO

Please circle 37 on the Reader Service Card
YOU HAVE TO SEE IT...
TO BELIEVE IT.

The Brown Brontosaurus
A new concept for cutting and mulching brush and small trees.

Almost 10,000 hours of extensive testing has resulted in the strongest, safest and most versatile brush cutter in existence today. We designed and built the Brown Brontosaurus to handle right-of-way cutting in some of New England’s most rugged terrain. We are certain it can handle the job in your area as well.

The mower is excavator mounted providing the operator with a full-view of the cutting head. Precise boom and stick movements allow the operator to selectively cut and shred brush and small trees while leaving desirable species untouched.

The Brown Brontosaurus’ patented design grinds trees and bushes into a thin, beneficial covering of fine mulch rather than discharging large, dangerous chunks of debris like most rotary flail mowers.

Road Side Mower Model
(Rail-way mower now available also)

If you are presently cutting brush and are not using a Brown Brontosaurus, you are probably wasting both time and $$$!

To learn more about this dynamic product, call for a free brochure and video tape. We are also willing to arrange a demonstration in your area.

John Brown & Sons, Co.
Sawyer Industrial Park
Weare, New Hampshire 03281
603-529-7974

Please circle 9 on the Reader Service Card
Bartlett Reps Complete Training At Laboratories

A class of 18 Bartlett representatives underwent a weeklong technical training session in February at the Bartlett Tree Research Laboratories in Charlotte, North Carolina. They studied pest management, fertilization, pruning, abiotic problems, hazard tree diagnosis, lightning protection, integrated pest management and tree management planning under Bartlett scientists Dr. Bruce R. Fraedrich, Dr. Donald C. Booth and Dr. E. Thomas Smiley. At the end of the intensive field and classroom work, attendees took the new ISA Arborist Certification exam. (The results of the test will not be known for some time.)

Attendees were Patrick Brewer, Austin, Texas; Gary Stevenson, Brookline, New Hampshire; Alex Hopkins, Newton, Massachusetts; Robert Andreucci, Warren, New Jersey; Eric Turner, San Jose, California; Lester Wallack, Bala Cynwyd, Pennsylvania; Marc Salvatore, Exton, Pennsylvania; Peter Coates, Wilmington, Delaware; Kevin McBride, Valhalla, New York; Richard Perras, Guilford, Connecticut; John (Jack) Baggett, Richmond, Virginia; Mike Kennon and Tim Ghirardelli, Pleasant Hill, California; Mark DiBiase, Osterville, Massachusetts; John Grant and Scott Harmon, Charlottesville, Virginia; Jim Moser, Manchester, Vermont; Mike Thompson and Junius Braxton, Greensboro, North Carolina.

The F. A. Bartlett Tree Expert Co. services trees coast to coast, providing preventive and remedial treatments.

Test the Waters!

CUTTING EDGE/PRODUCTS & SERVICES, our press release section, is devoted to new products. If you manufacture a new product and you need a cost-effective way to test the tree care market, send a press release to TCI along with a black and white photo of the product and we’ll place it in the “Cutting Edge” section. Mail it to: Tree Care Industry, P.O. Box 1094, Rte. 101, Amherst, NH 03031, Attention: “Cutting Edge.”
ISA Research Trust Announces Grants

Hyland Johns, Chair of the International Society of Arboriculture (ISA) Memorial Research Trust, announced seven research projects receiving grants through the Trust's annual competition.

The mission of the ISA Research Trust is to promote and fund research and educational projects on the planting, care and preservation of trees. "I believe the research projects receiving grants this year exemplify the mission of the Trust and address many of the needs of practicing arborists who have so faithfully supported the Trust through their charitable donations," Johns stated.

Out of an anticipated total of $100,000, $17,500 was awarded this year through the Trust's competitive grant process.

Following is a list of grantees:

Nina Bassuk, Cornell Univ.
Mariam B. Sticklen, Michigan State Univ.
R. Costello, Univ. of California
Philip Kenyon, Victoria College of Ag & Hort, Australia
Mark Harrell, Univ. of Nebraska
Michael R. Kuhns, Utah State Univ.
Timothy J. Smalley, Univ. of Georgia

A Better Place
By Willie Lanphear

If I were to win the Nobel Peace Prize, I would donate it to the International Society of Arboriculture (ISA) for the purpose of research in medicine to save our trees from death. Trees are living things; like humans, they can catch many diseases. Many pests such as Japanese beetles also can hurt a tree. We need to save them because they clean the air, give us shade and can increase the value of a property. We need medicines to save a tree from disease and pesticides to save the trees from insect invasions. We do not have medicines for some diseases and we don't have some pesticides to control all insects. They need money to start a research group. That is what I would do with the money from the Nobel Peace Prize.

William Lanphear, age 11, is an elementary school student in South Euclid, Ohio and a fourth generation arborist.
Sandoz Agro, Inc., Turf & Ornamental introduces Vanquish, its patented, broad-spectrum, post-emergence herbicide for the industrial vegetation management market. Vanquish controls more than 200 weed and brush species and may be used on pastures, rangelands, non-croplands, turf, non-irrigated ditchbanks, railroads, highways, rights-of-way, pipelines, industrial sites, weed districts and forestry and other non-cropland applications. For further information contact Sandoz Agro, Inc., 1300 Each Toughy Avenue, Des Plaines, IL 60018.

Sierra Moreno Mercantile is pleased to introduce their new rope grab for arborists. This state-of-the-art lanyard grip allows for fast adjustment in either direction. Spring-loaded double cams lock the rope automatically for maximum security. Supplied with 9 feet of 5/8-inch, 3-strand rope and a double-locking Forcercraft snap. Exceeds all ANSI A10.14-1991 standards. For information contact Sierra Moreno Mercantile Co., P.O. Box 292, Big Pool, MD 21711. Phone: 301-842-2544, 800-262-0800.

The E-Z Loader Trailer from AmeriQuip now makes it easy to load and unload heavy, awkward equipment. A worm gear design winch permits the operator to lower the trailer deck to ground level for "roll on" loading then raise it to transport position, without unhooking the trailer from the vehicle. The E-Z Loader is ideal for moving lawn and garden equipment, appliances, generators and more. For further information, contact Ameriquip, 1480 Arrow Hwy., La Verne, CA 91750. Phone: 800-824-9776, 909-392-2033.

DOGGETT
THE TREE FERTILIZER COMPANY

PLEASE SEND US THE MOST RECENT CATALOG ON YOUR DIFFERENT VARIETIES OF TREE FERTILIZER AND INDEX OF PUBLICATIONS ON TREE NUTRITION.

NAME: __________________________
COMPANY: _______________________
STREET: _________________________
CITY: ___________________________ STATE: _______ ZIP: _______

THE DOGGETT CORPORATION
LEBANON, N.J. 08833
1 (800) 448-1862

Please circle 15 on the Reader Service Card
SenDEC Corporation announces its first introduction of the new Maintenance Meter line. The totally new line includes LCD hour meters, job timers, tachometers, and service alarms in a series of models offering combinations of one to four functions. Over 100 models will be available. The arborist or landscaper will benefit with the HMJ TSA Maintenance Meter. This unit offers an hour meter for total time, job timer for job costing and employee productivity checks, and the Service Alarm for proper periodic preventive maintenance service. For further information, contact Herb Lay, SenDEC Corp., 2650 Baird Road, Fairport, NY 14450. Phone: 716-383-8340

Circle 64 on the Reader Service Card

The new REC-600 Backpack Compressor from Echo, Incorporated, the only fully portable pneumatic pruning system on the market, is ideal for orchards, vineyards, nurseries and tree services that do much ornamental work. The heart of the unit is the compressor powered by a 32.3 cc commercial grade engine. The compressor generates 2.83 CFM of air volume and maintains a constant working pressure of 100 pounds per square inch. For additional information contact Echo Incorporated, 400 Oakwood Road, Lake Zurich, IL 60047. Phone: 708-540-8400.

Circle 65 on the Reader Service Card

Rapco Industries, Inc., Portland, Oregon, notes that carbide saw chains are available on Carlton and Oregon chain bodies from .325-inch pitch to 1/2-inch pitch in all gauges. Rapco Marketing Inc., was recently formed to handle all sales for Rapco’s carbide chain and related products. The new address for purchasing Rapco products is Rapco Marketing, Inc., P.O. Box 5219, Vancouver, WA 98668-5219. For additional information contact Ron Blehm, Rapco Industries, Inc., 12130 N.E. Ainsworth Circle, Suite 240, Portland, OR 97220. Phone: 503-255-6355.

Circle 66 on the Reader Service Card

THE KAN-DU STUMPER
THE ONLY STUMP GRINDER YOU NEED

You KAN-DU large or uprooted stumps
- Designed by tree men for tree men.
- Self propelled - Fast walk travel speed.
- Except for cutting wheel, all work done with hydraulics - including steering.
- Cuts over 30" above ground & 24" below ground.
- Excellent stability for going over curbs, steps, & sidehills.
- Powerful 24 H.P. engine.
- Will out perform all grinders on the market today in all around grinding.

Don't say you can't, say you KAN-DU!

DSR, Inc. • 512 S. Summit • Sioux Falls, SD 57104 • (800) 359-2235 • (605) 334-0775

Please circle 16 on the Reader Service Card
MODEL 2000-4 - 20HP KOHLER MAGNUM. The new Model 2000-4 couples Carlton's legendary quality and cutting ability with the added stability of four wheels. Complete Hydraulic Control including Steering and Propulsion • Narrow 35” Width • Counterbalance Valves for Precise Control • Freewheel Valve • PolyChain GT Drive • 1” Thick Cutter Wheel • Imron Paint • Heavy Duty Construction.

MODEL 3500 - 35HP WISCONSIN GAS ENGINE. At just $10,995, Carlton Model 3500 brings together quality and price. This entry level tow-behind incorporates many of the features found on Carlton's larger models • Counterbalance Valves • Hardened Bushings • Replaceable Rod Ends • EZ Lube Spindles • Imron Paint • Optional Remote Control.

MODEL 6800 - 68 HP DEUTZ TURBO DIESEL. Carlton Model 6800 combines power and cutting dimensions that no other grinder can match. Not to mention the quality of construction • 2” Outboard Bearing • Self Puriﬁng Roller Bearings • Hardened Bushings • Replaceable Rod Ends • Counterbalance Valves • 1 1/2” Thick Cutter Wheel • EZ Lube Spindles • Dupon Imron Paint • Optional Remote Control.

Carlton manufactures a complete line of stump grinders from 20 to 106 HP all backed by Carlton's Limited One Year Warranty. CALL TODAY.
HELP WANTED

Bartlett Tree Experts has been caring for America's trees since 1907. We are looking for well organized, self-motivated sales reps. Sales profs are compensated at a commission rate commensurate with their profitability. A small business challenge, in a corporate environment. Horticultural/business degree pref. Experienced only. Health & life insurance, company car. Openings in Nassau-Suffolk, Westchester counties, NY. Resumes to Bartlett Tree Experts, 345 Union Avenue, Westbury, NY 11590, or call 516-334-0648.


Tree service in northern Rhode Island is seeking a working partner, $50,000 investment. We have been in business for 10 years with a customer bank of 2000. Interested parties call 508-234-6423.

Arborist wanted. Full-service tree care and landscape company looking to add the right individual to our staff. Full-time position, prefer ISA certified arborist. Insect and disease identification, common sense and a desire to excel in a top quality organization. Send resume with salary requirements to: JTO, Inc., 9260 Progress Pkwy., Mentor, OH 44060. Phone: 216-951-4355. FAX: 216-357-1855.

Tree care foreman/licensed applicator - Well established eastern Long Island tree care company looking for individual to assist supervisor in daily operations, sales and client contact. Applicant must possess skills in identification of plants, insects and diseases. This is a full-time working position. Please send resume to: Whitmore-Worsley, Attn: Jim Kiley, P.O. Box 10 - Montauk Hwy. Amagansett, NY 11930.

Tree care estimator/manager - both field and sales experience necessary. Horticulture/forestry degree preferred. Pesticide certification helpful. Management track for right person. Send resume and salary history to: Harrison Tree Service, 2903 Bellaire Ave., Royal Oak, MI 48067. Phone: 313-542-9749.

Does your reach exceed your grasp? Come grow with us. Plant Health Care firm, Long Island, New York, seeks responsible arborists for positions of Plant Health Care practitioner, climber. Experience in Plant Health Care techniques is preferable but we gladly train motivated individuals possessed of the desire to learn. Our practitioners care for the finest landscapes in the country using research-driven, scientifically correct plant management. We emphasize customer service, practice the highest safety standards, provide the best plant care, and offer the opportunity for professional growth in a friendly environment. If you are looking to challenge yourself and grow along with us, please send your resume and salary history to Wonderland Tree Care, Inc., 221 South St., Oyster Bay, NY 11771. Phone: 516-922-5348.

We are a full service arboriculture firm with offices in the Midwest and the East Coast. With our continued expansion, we are seeking qualified arborists for production, plant health care and sales positions within our company. We consider safety, quality, production and com-
FOR SALE


Tree service, East Coast, est. 15 years. Full recycling operation, including permits & licenses. Trucks, chippers, loaders, tub grinder, tractors, woodsplitters & stump grinders. Best name in the area. Turning 40 in a couple of years, time to do something different. Call if interested. DE Phone: 302-762-3895.

TIMBERLINE SUPPLY CO.
We're arborists ourselves. We know what you need. Providing it is our goal.

- Rope
- Climbing Gear
- Chain Saws
- Safety Equipment
- Cabling Hardware
- Pole Saws & Pruners

3303 Massillon Rd
Akron, Ohio 44312

1-800-892-5484
Call for catalog or ordering information

Please circle 46 on the Reader Service Card

FOX MFG., 16005 Delmar
P.O. Box 6
Lowell, IN 46356
(219) 696-1440
Dealer inquiries invited in some areas.

The Affordable Portables
Models
12R-18E

30° Stump removed
12° Deep 9 minutes

SAFETY FEATURES
- Guards on belts.
- Full control, positive balance, visual contact of work.
- Both wheels automatically lock when working machine.
- When disengaging cutter, cutter stops and does not free wheel.

Please circle 17 on the Reader Service Card

ICI EXPO '93
Cleveland, Ohio
November 18-20, 1993

Please circle 48 on the Reader Service Card
After 48 years in the tree business, 34 years in private business in the same city, I am planning to retire. Full service tree company established in Columbia, Mo. (#2 city in the nation) with 2000 clients. Grossing $278,600 in '91 and $288,800 in '92. All up-to-date good working equipment. Price: $250,000 - $300,000. Call for additional information: 314-474-3400.

Spotlight Industries offers a special discount on their protective eyewear to the green industry. Meets ANSI standards, several tints, made in USA. Can be worn right over regular glasses. Call 1-800-345-5243 for discount details.

Chlorosis tree medicine. 100% effective in oaks. Many deciduous trees. 10-minute application, guaranteed for iron chlorosis. Sample, $29/qt. treats 16 trees, Postpaid. Information and instructions free. Pin Oak Tree Specialist, 7310 North 39th Terrace, Omaha, NE 68112. Phone: 402-455-9384.


81 GMC 7000 w/46' Pitman Hot-stick, $20,000; '79 F-600 chip trk, New Eng., $9000; '89 Vermeer 1600A chipper, $10,000. Complete mntnce. Records. Excellent cond. Call Wes, 714-573-2212 for details.

Skyworker - Largest new parts inventory, used equipment inventory, major service facility in U.S. Phone: 404-376-3192. FAX: 404-376-1150.

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.
Rayco Hydra-Stumper  190 hp diesel, 1200 hours use. $55,000. Phone: 510-452-6238.


Small, successful tree service on the coast of Maine. Selling bucket truck, chipper, other trucks and equipment and 730 accounts. Owner-assisted transition. Rufus Wanning, P.O. Box 558, Blue Hill, ME 04614 Phone: 207-374-2857.


Municipal/commercial tree serv. for sale. 6 yrs. LA/Orange/Riverside & San Bern. Counties. Exclnt. clientl, very profitable. Asking 5% yr. 1, 3% yr. 2, 1% yr. 3 and $1500 down. Look at books and decide. Wes, 714-573-2212.

Twenty-year established tree & shrubbery service, excellent reputation. Located north central Idaho. Two major colleges, select clientele, $85 to $100K gross. Two-man payroll. Two hours from Idaho wilderness. Inquiries to TCI, Box S, PO Box 1094, Amherst NH 03031.

FOR RENT

Large tree spade (TS-60) with experienced arborist/operator. Any place in New England or eastern NY. Capable of moving 6"-7" trees in minutes. Develop a new profit center without any capital expenditure. Call Residential Foresters for details, 203-429-9972.

WANTED

Used brush chipper disc or drum, diesel or gasoline power. Phone: 712-552-2248.

Classified ad rates: $45 per inch (1-inch minimum), payable in advance, due the 20th of the month two months prior to publication. Send ad and payment to: Tree Care Industry P.O. Box 1094 Amherst, NH 03031

ON-THE-MACHINE CARBIDE TOOTH SHARPENING $14.95

YOU READ IT RIGHT!!! $14.95 ANY CARBIDE — ANY TOOTH Call For Details 1-201-444-0676

Stump Claw®

Stump Cutting Tooth Superiority

• Patented Design
• Reduce cutter tooth loss 5x to 10x
• Stands up to rock, brick and concrete and will not break
• Reduce replacement costs and down-time
• Easily adapt to most stump cutters

Gain the Stump Claw Advantage.

Call: 1-800-543-6123

The Stump Removal Co.
1129 Linwood Avenue
Westwood, NJ 07675

AN OUNCE OF PREVENTION

A FEW DROPS DAILY IN WATER OR JUICE PREVENTS THE "FIERY ITCH" OF POISON IVY, OAK AND SUMAC

Retail Price: $12.50 per 1.2 oz. bottle 6 Months Protection Wholesale: $90.00 per dozen Volume Discounts

1-800-553-6778

ORAL IVY, INC. 104 GUY'S LANE BLOOMSBURG, PA 17815

Gain the Stump Claw Advantage, Call: 1-800-543-6123

The Stump Removal Co.
1129 Linwood Avenue
Westwood, NJ 07675

Phyton™

PLANT WOUND PASTE

To order or for information:
Source Technology Biologicals, Inc.
3355 Hiawatha Ave. #222
Mpls., MN 55406 1-800-ELM-TREE

Please circle 43 on the Reader Service Card

Please circle 45 on the Reader Service Card
**LIST OF ADVERTISERS**

<table>
<thead>
<tr>
<th>Reader Service Number*</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>........</td>
</tr>
<tr>
<td>2</td>
<td>........</td>
</tr>
<tr>
<td>3</td>
<td>........</td>
</tr>
<tr>
<td>4</td>
<td>........</td>
</tr>
<tr>
<td>5</td>
<td>........</td>
</tr>
<tr>
<td>6</td>
<td>........</td>
</tr>
<tr>
<td>7</td>
<td>........</td>
</tr>
<tr>
<td>8</td>
<td>........</td>
</tr>
<tr>
<td>9</td>
<td>........</td>
</tr>
<tr>
<td>10</td>
<td>........</td>
</tr>
<tr>
<td>11</td>
<td>........</td>
</tr>
<tr>
<td>12</td>
<td>........</td>
</tr>
<tr>
<td>13</td>
<td>........</td>
</tr>
<tr>
<td>14</td>
<td>........</td>
</tr>
<tr>
<td>15</td>
<td>........</td>
</tr>
<tr>
<td>16</td>
<td>........</td>
</tr>
<tr>
<td>17</td>
<td>........</td>
</tr>
<tr>
<td>18</td>
<td>........</td>
</tr>
<tr>
<td>19</td>
<td>........</td>
</tr>
<tr>
<td>20</td>
<td>........</td>
</tr>
<tr>
<td>21</td>
<td>........</td>
</tr>
<tr>
<td>22</td>
<td>........</td>
</tr>
<tr>
<td>23</td>
<td>........</td>
</tr>
<tr>
<td>24</td>
<td>........</td>
</tr>
<tr>
<td>25</td>
<td>........</td>
</tr>
<tr>
<td>26</td>
<td>........</td>
</tr>
<tr>
<td>27</td>
<td>........</td>
</tr>
<tr>
<td>28</td>
<td>........</td>
</tr>
<tr>
<td>29</td>
<td>........</td>
</tr>
<tr>
<td>30</td>
<td>........</td>
</tr>
<tr>
<td>31</td>
<td>........</td>
</tr>
<tr>
<td>32</td>
<td>........</td>
</tr>
<tr>
<td>33</td>
<td>........</td>
</tr>
<tr>
<td>34</td>
<td>........</td>
</tr>
<tr>
<td>35</td>
<td>........</td>
</tr>
<tr>
<td>36</td>
<td>........</td>
</tr>
<tr>
<td>37</td>
<td>........</td>
</tr>
<tr>
<td>38</td>
<td>........</td>
</tr>
<tr>
<td>39</td>
<td>........</td>
</tr>
<tr>
<td>40</td>
<td>........</td>
</tr>
<tr>
<td>41</td>
<td>........</td>
</tr>
<tr>
<td>42</td>
<td>........</td>
</tr>
<tr>
<td>43</td>
<td>........</td>
</tr>
<tr>
<td>44</td>
<td>........</td>
</tr>
<tr>
<td>45</td>
<td>........</td>
</tr>
<tr>
<td>46</td>
<td>........</td>
</tr>
<tr>
<td>47</td>
<td>........</td>
</tr>
<tr>
<td>48</td>
<td>........</td>
</tr>
<tr>
<td>49</td>
<td>........</td>
</tr>
<tr>
<td>50</td>
<td>........</td>
</tr>
</tbody>
</table>

*Circle this number on Reader Service Card for more information on this advertiser.

---

**Hoffco since 1949.**

**PH980**

(One-Man)

**POST HOLE DRILL**

Gas Powered

Easily started, carried and operated by ONE MAN.

Call 1-800-999-6161 or write for Free Color Brochure on our Full Line of Brushcutter/Power Scythes, Monofilament Trimmers, Tiller/Cultivators and Post Hole Drills. Hoffco, Inc., 308 N.W. "F" St., Richmond, IN 47374-2297 U.S.A. FAX: 317/935-2346

Please circle 21 on the Reader Service Card

**Completely Portable. Fast cutting and powerful even in the hardest soil conditions!**

**An ideal tool for all your drilling applications!**

**Easy to control and lightweight. Standard earth augers and Pengo heavy-duty augers are available to do heavy-duty jobs!**
A Day With An E.M.T.

By Christopher D.X. Swartz

I am currently working as a part-time arborist and a full-time EMT (emergency medical technician). Although these trades may seem dissimilar, they are sometimes intertwined.

A couple of weeks ago, my partner and I were roaming the streets when we got a priority call for a "man down." This term is used a lot in emergency medicine, so one never knows what to expect or what the severity of the situation might be. After three or four minutes of hustling through the streets, we came to our destination. My first sight was of a man sitting down and leaning against a tree clutching his arm and bobbing slightly back and forth, obviously in a lot of pain. I asked him how it happened.

"Well, the hurricane has caused some storm damage to this oak and I wanted to take one of the lower limbs off because it was so badly broken," he explained. "So I put the extension ladder up and realized that the branch was about six feet above the top rung. I climbed up and tied off some rope to the limb and dropped it down to the neighbor's boy.

"I just wanted him to pull it down so there was no chance of it getting near the power lines. While I was cutting the limb, sawdust was getting in my eyes and I was wondering why the limb wasn't coming down. I looked down and saw that the boy wasn't pulling on the rope like I had asked him to. He then began to pull and I was just about to cut again when the branch broke and swung at me and knocked me off. I had to throw the chain saw, which I think saved my life."

I asked if he cut the limb from top to bottom. "Well, sure," he replied.

I looked up where he made the cut and saw a big tear of bark below where the limb used to be.

I took his vital signs, splinted his arm and leg and got him to the hospital. He now has a series of pins running throughout his right arm and leg. The mistakes he made are as academic as a race car driver wearing a helmet and seatbelt. By ignoring the safety precautions, he left lasting scars on himself and the tree, which he was willing to risk his life for in order to make the tree look good.

As an arborist, I understand that there are many potential hazards if one is not cautious or considerate. This man was a great example of what not to do. His first mistake was not being tied into the tree with three-point control. Next, he cut without a helmet, face shield and ear protection. When cutting with a chain saw, try not to make cuts above the body; right hand on throttle by the right hip, left arm straight holding the control bar is a recommended position.

The next mistake he made was improperly cutting the branch, which caused him to fall because he didn't understand the way wood breaks. Always watch or undercut 15% before making the top cut for maximum control (find manuals on proper cuts). When tearing a branch, always run the rope through a fork that will provide good leverage and swing control.

Finally, if you're wise enough to use the three-point control while climbing, make sure that ropes aren't frayed and be aware of where your ropes are at all times so you won't cut through them.

Work smart, safe and have a good time.

Christopher Swartz is employed at Tree Specialists, Inc., in Holliston, Massachusetts.

Do you have a story for 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 or they will not be considered for publication. Articles and photos must be received by the first day of the month for the following month's issue.
**Double-braid slings** have always been my preferred block attachment for tree removals. Tied with a timber-hitch, stillson-hitch, or running bowline, the double-braid sling offers the best strength and dynamic-load handling ability of any attachment. For blocking down trunks there is no other sling choice, in my opinion. However, there are some situations where an endless webbing choker may be as good or better choice as an attachment.

A small block attached by an endless webbing choker is particularly handy when removing many small limbs over a structure. They are lightweight, quickly choked, and are plenty strong enough for the job. You always use this type of choker on a different part of the webbing, so you are not constantly wearing on the same area. With the sling being doubled when choked, the sewn section of the choker is only carrying 50% of the load. This effectively increases the choker's load-carrying capacity as well as its ability to handle dynamic-loading.

Another plus of the webbing choker is there is no knot to fail or untie. Webbing chokers are versatile tools for other types of attachments, and as sliders to pull one end of cable to the opposite side of the tree in cabling operations. They are also handy for securing your tools in this operation. When cabling, you can secure an endless webbing choker around the trunk as a false-crotch for your foot. As we all know, having a mobile crotch to stand in when drilling holes can make a big difference in your attitude toward cabling.

Some of the other less exotic uses I have found for endless webbing chokers are bundling up piles of brush, choking rootballs when transplanting small trees, and pulling shrubbery out of the way during tree removals.

As you see, there are a multitude of uses for endless webbing chokers. Used properly, chokers can make the job a little less stressful. Do not, however, try to use a webbing choker when the job calls for a double-braid sling. If you keep that fact in mind, the uses for all types of slings is limited only by your imagination.
Our new high torque Shindaiwa 377 pumps out 2.5 horsepower from an 8.8 pound package.

Ball bearing supported crankshaft with caged needle bearing on both ends of the conrod.

High alloy aluminum piston with two flexible cast iron rings for longer life, improved sealing and superior piston support.

Chrome plated cylinder for longer life at high RPM.

Easy single thumb-screw access to plug, filter, and carburetor.

Five-point anti-vibe system for less fatigue under sustained professional use.

Boot-mounted carburetor to eliminate vapor lock.

WHAT IT TAKES TO MAKE THE BEST SMALL SAWs IN THE WORLD.

At Shindaiwa, we have a way of making other saws look wimpy. With a family of small vertical cylinder saws that boast better power-to-weight, superior anti-vibe design, longer life, more professional features, and greater cutting torque than any other saws in their class. All backed by a 7-day unconditional money-back guarantee, and one of the strongest dealer networks in the country.

For a free demonstration of these, or our other saws, trimmers and brushcutters, see your Shindaiwa dealer today.

You won't find another small saw with the guts to stand up to a Shindaiwa. Not one.

WE SIMPLY MAKE THEM BETTER.

11975 S.W. Herman Rd., Tualatin, Oregon 97062
For the Shindaiwa dealer nearest you, call 1-800-521-7733.

SHINDAIWA 3005
8.6 lbs., 28.5 cc, 1.8 HP

SHINDAIWA 360
8.8 lbs., 35.2 cc, 2.5 HP

SHINDAIWA 377
8.8 lbs., 37.7 cc, High Torque 2.5 HP

SHINDAIWA 488
10 lbs., 47.9 cc, 3.5 HP

Please circle 42 on the Reader Service Card
TOOLS OF THE PROFESSIONAL

SAMSON ROPES – THE PROFESSIONAL’S CHOICE FOR SUPERIOR PERFORMANCE AND VALUE.

You demand performance, reliability and value from your tools and rope is certainly one of the Arborists most important tools.

At Samson we build the best rope for the job. Climbing, lifting or lowering, Samson ropes have been proven the best by the two toughest critics anywhere: the Professional Arborist and Father Time.

Since 1884 Samson has offered the highest quality ropes to our customers. Today, professional Arborists rely on Samson rope for maximum performance and value.

ASK A PRO
Ask a climber who knows us and he’ll probably talk about True-Blue, our premium climbing rope in a distinctive, high-visibility blue. Or Arbor-Plex, the industry workhorse, the most widely used climbing and bull rope. Perhaps he’ll mention Tree-Master, the world’s best 3-strand climbing line. Or maybe he’s using Pro-Master, a strong and tough 3-strand bull rope that’s priced right for any job.

NEW STABLE BRAID: A STRONGER, MORE DURABLE BULL ROPE
Now Samson is introducing something new to the arborist industry: Stable Braid. A double braid construction with the ultimate combination of strength and durability, it’s ideally suited to block and bollard rigging systems. Available with our Samthane coating, Stable Braid’s durability and abrasion resistance are unmatched in the industry.

<table>
<thead>
<tr>
<th>Size</th>
<th>True-Blue</th>
<th>Arbor-Plex</th>
<th>Tree-Master</th>
<th>Pro-Master</th>
<th>Stable Braid</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>7,000</td>
<td>5,400</td>
<td>7,300</td>
<td>5,800</td>
<td>9,870</td>
</tr>
<tr>
<td>5/8&quot;</td>
<td>9,000</td>
<td></td>
<td>8,200</td>
<td>15,500</td>
<td></td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>12,000</td>
<td></td>
<td>10,800</td>
<td>19,400</td>
<td></td>
</tr>
<tr>
<td>7/8&quot;</td>
<td></td>
<td></td>
<td>15,500</td>
<td>28,400</td>
<td></td>
</tr>
<tr>
<td>1&quot;</td>
<td></td>
<td></td>
<td></td>
<td>18,700</td>
<td></td>
</tr>
</tbody>
</table>

When you want quality tools go to your professional Arborist supplier and ask for Samson, we’ve been here all along with the best ropes you can buy.

Please call or write for a sample and the name of the dealer nearest you.

SAMSON OCEAN SYSTEMS, INC.
2090 Thornton Street
Ferndale, Washington 98248
(206) 384-4669

Please circle 39 on the Reader Service Card.