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Line clearance comes in many forms that comprise a $1 billion-a-year industry.

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COVER PHOTO:
Tree care equipment adapted to transmission line clearance: a skidder-mounted aerial lift. Photo courtesy of Consolidated Utility Equipment Service, Amherst, NH.
Webster defines recession as "a temporary falling off of business activity during a period when such activity has been generally increasing." The key word is temporary.

This country has experienced and weathered recessions before. Reports that I receive continue to support the fact that this economic situation is more acute in some parts of the country than in others. Arborists in the Northeast and Mid-Atlantic states continue to report that they are working twice as hard to sell half as much and that backlogs are really low.

However, those regions have been blessed with incredibly good weather and there has been practically no lost time. As a result, production this fall and early winter has been outstanding. If the weather had been typical, would backlogs actually be as high or higher than a year ago?

Let's not panic. Certainly the media has written and said enough to cause all of us to panic, but that's what sells newspapers. The public, supposedly, is reluctant to spend money because of the uncertainty of the next few months. If ever there was a time to put your professional image in front of the public, it is now. You need to be visible.

Don't wait for the phone to ring. Cause the phone to ring. Visit with your clients. Get a jump on 1991 sales now. Business isn't going to come to you. You have to get out and sow the seeds; beat the bushes, as they say. In addition to the regular competition, there is an increase in unemployment in many parts of the country. You can be sure that this will result in everybody and his brother running around next spring and summer trying to sell tree work.

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Utility Contracts
Which Type Is Best For You?

By Richard E. Abbott

In the 1920s, the electric utility industry recognized the advantages of contracting line clearance trimming to tree expert companies. Distribution line clearance contracts with these tree expert companies were most commonly drawn up on an hourly rated time-and-material basis through the 1970s. Many utilities were dissatisfied with the time and material contracts, however, because effectively they were supervising or managing the performance of contractors’ work force. In time, a number of utilities began investigating alternative contract procedures (for example, Detroit Edison's unit-based contract in the early 1960s, and Metropolitan Edison's mileage-based contracts in the early 1970s).

All contract procedures can be classified into one of four categories: time and material; fixed price or lump sum; unit; incentive.

The ideal contract rewards the service provider for using the minimum amount of people and equipment to provide a superior service at a reduced cost. Traditional time and material contracts encourage contractors to maximize men and equipment for profitability. Frequently, lump sum or fixed price contracts encourage the contractor to provide the minimum level of service.

There is no one ideal contract that fits all situations, but several variations have proven advantageous to certain utilities.

1. Time and Material
   These are usually in one of these variations:
   a. Hourly price for a crew consisting of a certain number of workmen, equipment, tools and truck. Frequently, the experience or job skill requirements of workers is not established. Obviously, a crew of experienced workers will cost the contractor more in wages and produce more work for the utility. Without an established experience level for crew members, the contractor can realize greater profit by hiring inexperienced people. He must also be prepared for greater turnover in personnel.
   b. Hourly for worker by job classification. Generally, these contracts are based on a price for groundsmen, trimmers and foremen. Frequently, the hourly rate for each job class is not separated into experienced and inexperienced personnel requirements. When experience or job skills are not specified, it is to the contractor's advantage to employ an inexperienced worker because of lower labor costs.
   c. Hourly rate including actual employee wages plus payroll taxes, benefits, overhead and profits. This overcomes the problems with A and B. However, unless job skills for different pay rates are established, all workers could be at the highest classification regardless of actual job skill expertise. The more skilled and higher paid the work force, the greater the contractor's profit and correspondingly the more production for the utility.
   d. Hourly rate for men and equipment with a guarantee not to exceed per tree trim costs. The contractor is paid actual billing rates, provided the average cost per tree trimmed is less than the guaranteed price. If the average cost per tree trimmed exceeds the guaranteed price, a portion of the invoiced amount is withheld until the overall average cost per tree trimmed is less than the guaranteed per tree cost.

2. Fixed price or lump sum
   a. Lump sum for a defined specific circuit, grid, area or line. Many utilities have used this as an alternative to time and material contracts.

   Lump sum contracts require less supervision by the utility, but a comprehensive inspection is needed to assure adequate work performance. One utility, after nine years of lump sum contracting, reports that wages and fringe benefits of contract employees are lower, quality of work is reduced and actual cost per hour worked is higher.

Line clearance contracts were commonly drawn up on a time and material basis through the 1970s.
Initially, many contractors did not have the expertise to properly estimate the man-hours needed for a particular job. A number of contractors have seriously underestimated the amount of work necessary, leading some utilities into believing this method has reduced costs. When those contractors went bankrupt, the prices went back up to where they should have been.

b. Fixed price for certain functions such as all the mechanical reclearing, all the R/W side trimming/danger tree removal and all herbicide reclearing on certain lines. This procedure is beneficial when contractors have expertise or equipment appropriate for only certain functions. For example, a contractor may be equipped to brush hog and not have bucket trucks or climbers necessary for R/W side trimming. This could result in two or more contractors working on a line, each doing a particular task. Usually the cost for a specific function is reduced, but increased inspection and contract administration cost will be involved.

c. Mileage unit price per mile of actual work performed. The Rural Electrification Administration recommends 1000-foot work units rather than miles.

The difficulty lies in establishing the basis for determining the length of work performed. For example, some utilities measure from drip line to drip line. The inspector verifies the length of actual work performed for invoice purposes. Once the contractor calculates mileage unit prices for trimming, reclearing, etc., it is relatively difficult to budget because actual miles of work necessary is different from line miles. An advantage of this system is that the contractor is not paid when there are refusals.

d. Payment on basis of trees trimmed and pounds of wood chips generated. Actual trees trimmed will vary in size and type of work necessary. Payment on the basis of trees trimmed can only encourage minimum line clearance trimming. Factoring in the quantity of wood chips generated encourages more wood chips. Documentation of the quantities of wood chips generated can be difficult and could involve weighing. A less accurate alternative is to track the number of loads of wood chips produced weekly.

4. Incentive

a. Payment on a time and material...
The ideal contract rewards the service provider for using the minimum number of people and amount of equipment to provide a superior service at a reduced cost.

to complete the job at no additional cost.

Accuracy and appropriateness of the standard man-hours used to provide the maximum time is a concern. If those units are not correct or care is not taken in identifying and pre-coding work units, the man-hour base could be off. The utility has the responsibility to establish a fair and equitable base that can be achieved by the contractor with standard (normal) performance. Better than standard should result in a bonus.

c. Payment on basis of line mileage unit with bonus payment, up to 15% maximum, awarded for documented superior performance. The utility inspector has established guidelines to evaluate contractor performance in the areas of quality of work performed, number of trimming refusals, property owner complaints, cleanup and disposal, etc. Documentable superior performance in any of those areas can result in up to a 15% bonus payment. The intent is to encourage the contractor to do a better job on fixed-price or unit-based contracts. The inspector's evaluation must include not only actual work performance, but also investigation of other factors for bonus payment.

d. Man-hours necessary to trim a specific area are averaged based on

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the last three trim operations. The contractor is paid time and material for wages and equipment up to the average man-hours previously required the last three times. If the work is done in less time, the contractor is paid one-half the difference.

This system works well when there are not many changes, new lines or rebuilds in a specific area because it is based on the previously required man-hours. If the amount of work necessary increases or decreases the average of the last three trim cycles, it cannot be used as a basis.

e. Contractor paid a fixed price/lump sum to trim an area. If there are routine (non-storm tree-related) interruptions to electric service, the contractor is assessed restoration costs. A penalty for interruptions helps assure that the contractor will perform adequate line clearance on fixed price. Also, it would tend to reduce the possibility of low bidding because of possible additional interruptions penalties.

f. Long-term contracts for up to seven years with payments to contractor on a fixed annual fee basis and not dependent on the contractor doing any work. The intent is to provide the contractor maximum flexibility in scheduling, determining manpower and equipment to perform work. The utility specifies the desired results, defines guidelines for measuring performance of results and allows the contractor free rein. Unfortunately, the outcome is not always satisfactory.

Value of guidelines
Identification and establishment of adequate measurable benchmarks could assure satisfactory performance. If the guidelines are vague, however, the result is problems for the utility and the contractor.  

Richard E. Abbott is president of ACRT, Inc., in Kent, Ohio, and has been involved in contracting line clearance work for more than 35 years as a line clearance contractor, as a utility arborist and as a consultant for utilities.

Lump Sum Bidding vs Unit Pricing

By Carl N. Center

In my opinion, in order to give utility companies qualified, competent personnel and good equipment of the latest design at the lowest possible price, the following are essential: long-term unit-pricing contracts (3 to 5 years); built-in increasing cost recovery; and renewal of existing contracts, provided your pricing is competitive with other professional line clearing companies (not just low bid) and your firm meets expectations.

I do not support lump sum bid work in the line clearing industry for several reasons. First, lump sum and short-term contracts invite rapid turnover, accidents, equipment abuse, discontent and a general feeling among employees that there is no real future in this industry.

Second, employers cannot have a viable fringe program for short-term employees. With the high cost of medical insurance and other benefits, certain fringe programs are a must to ensure a stabilized work force.

Third, in most cases, employers cannot build a strong organization on lump sum or short-term contracts. Such contracts do not allow a contractor to purchase and maintain adequate equipment.

If utility companies insist on flat bids, however, both the contractor and utility should expect premium pricing on labor and equipment because the contractor has assumed all risk. In a unit-pricing contract, the utility receives a large discount because it has removed or accepted a good part of this risk.

Also, the contractor must make enough profit on each job to carry his business through to the next job. This is hard to accomplish when too often we bid the bidders - not the job.

On lump sum bid jobs, the contractor must be able to abide by the contract to the fullest. When the utility is paying for jobs by the hour, it will sometimes cut the job short to save money. This will not happen on fixed bid work.

Because line clearing is not an exact science and because the utility or contractor does not own the tree to be worked on, the allowable type of trim is not fully known until after the bid. This can cause a multitude of problems. Say, for instance, the utility prescribes certain clearance objectives. The contractor bids accordingly but the property owner objects to the extent of the clearance. Now the utility wants a rebate, not realizing the expense involved in travel and setting up to do the job.

Most utility representatives believe unit pricing provides no incentive for the contractor to keep production at a reasonable level. That makes about as much sense as saying utility companies have a monopoly and therefore good service to the rate payer is not important.

Contractors who desire a positive and continuing working relationship must keep their customers pleased. A pleased customer is the best insurance a contractor can have, not only for the utility, but for others who may be considering his firm for their line clearing programs.

It is next to impossible to keep current on all legal requirements on short-term work. Companies must hire a safety director and must observe regulations relative to transportation regulations, random drug testing, hearing loss levels, and others. After all this, we must discourage employee turnover.

We are now not only in a highly competitive business for tree work, but probably and more importantly a very competitive employee market. We must be able to keep our people or there will be no need for more business.

If people want to gamble they should go to Nevada. Remember, what we need is more money, not more practice. You can get a lot of practice on lump sum work.

Carl N. Center is corporate president of Utility Tree Service, Inc., Eureka, California.
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Patrick Buckley
Buckley Tree Service
Waukesha, Wis.

Note of thanks

Just a quick note of thanks for the great coverage in the TCI article on company computers. As you know, I firmly believe that a computer is only an office tool, not the “be all and end all” of a business. That article certainly points that out.

We think TCI is great and look forward to each new issue.

Judy Collins
Collins Tree Service, Inc.
Hopkinton, N.H.

Praise for EXPO

Having reflected on the recent TCI EXPO ’90 in Richmond, Virginia, we just wanted to drop you a line to let you know how enjoyable and informative EXPO was.

We have been busy researching and attaining more information on some of the techniques and services we learned during Dr. Alex Shigo’s and the other excellent seminars.

We enjoy your magazine and it’s a great help to the industry. It provides resources and information otherwise unavailable.

Looking forward to seeing you at next year’s EXPO in Ohio.

Ralph Halleran
Rick Tyner
Big Muddy Tree Co.
Mulkeytown, Ill.

Congratulations

Congratulations on Tree Care Industry magazine. It is excellent. It’s very helpful to have the authors identified.

Steve Sandfort, R.F.
Supervisor of Urban Forestry
Cincinnati, Ohio

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The Cutless-treated tree on the left displays less regrowth after trimming than the untreated tree on the right.

The TGR Alternative
New Technique Helps Reduce Electrical Service Interruptions

By Peter Gerstenberger
Editor

Trees grow and limbs occasionally break, causing problems in areas where overhead utility lines are located. In many areas, the leading cause of power outages is tree-related. Such interruptions are intolerable for the electrical service provider as well as the consumer and can be extremely dangerous.

About $1 billion is spent on line clearance tree trimming and related removals every year. Generally, trees in urban and residential areas are trimmed on a 1-to-2-year rotation and trees in rural areas are trimmed every three to four years.

There are several options for dealing with tree/line conflicts. Practical solutions must adequately address concerns of aesthetics and economics; treated trees should not be eyesores in the community, yet the work must be done as inexpensively as possible.

Practices that extend the rotation length will reduce the utility's and the customer's cost of maintenance. One option is to trim the trees more severely, but this is generally unacceptable to the public. Most utilities have experimented with Tree Growth Regulators (TGRs), compounds designed to slow tree regrowth. Roughly 60% use limited TGR treatment programs.

What TGRs do

Tree Growth Regulators have been around for a relatively long time and in various forms. Data on TGR can be found in Tree Growth Regulators—An Annotated Bibliography, a 140-page document published as Purdue University Agricultural Experiment Station Research Bulletin 989. The document was produced by Purdue and ACRT, Inc., a research and consulting firm in Kent, Ohio, that served as the principal contractor for an extensive TGR research project funded by Empire State Electric Energy Research Corporation.

The Purdue-ACRT bibliography refers to some 40 compounds that have, or are thought to have, tree growth regulatory properties. New generation TGRs are all compounds that inhibit gibberellin, the growth hormone responsible for cell elongation. There are currently two products registered with the Environmental Protection Agency for controlling tree regrowth—Cutless® from Dow-Elanco and Clipper® from Monsanto. Clipper is labelled for stem injection and soil application, while Cutless is registered only for stem injection.

When used as directed, TGRs shorten internode length, resulting in shorter, more compact regrowth. Leaves from treated trees may be smaller and darker green than normal.

Most utilities hope to add a year or more to the pruning cycle by using TGRs. Mike Watson of Potomac Edison reported a 40% reduction in regrowth overall in trees the year following treatment, and up to three years of control in treated trees. With some trees, Potomac Edison experienced growth reductions of up to 80% over four years. According to Dr. Frank Kidd, product development manager of Industrial Herbicides at Dow-Elanco, one can conservatively expect a reduction in the amount of regrowth biomass, which would reduce trimming time.

At Potomac Edison, trim cycles vary from two to four years, depending on the site. Using TGRs will permit a 2-to-4-year increase in the trim cycle without a significant increase in the number of trees contacting conductors. Extending a 2-year trim cycle to four years using TGRs represents a 48% annual cost saving.

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This cross-section shows the various parts of the tree's inner areas. The goal is to inject TGR into the sapwood, just past the cambium. The most practical method of applying TGRs. Research has shown that the compounds move upward in the xylem but have little movement downward or in the phloem. Injection holes are spaced every four to eight inches around the trunk just above the root flare and are drilled at a 45-to-60-degree angle to the plane of the trunk to get maximum uptake in the sapwood. The injectors must be completely sealed from the cambium because the alcohol carrier for the active ingredient will kill cambial cells.

A system suitable for field injection must be able to deliver a predetermined amount of active ingredient quickly and it must be easily transportable. Several injection systems have been developed exclusively for TGR injection. During experimentation, pressures used to inject TGRs have varied from 0 to 1200 p.s.i. The current norm is between 4 p.s.i. and 150 p.s.i.

Injection early in the growing season when trees are actively transpiring provides the most rapid uptake in the xylem. Treatment in the dormant season is ineffective. Diseased or declining trees and trees with included bark or other physical abnormalities are not good injection candidates. Maples and other trees that are tapped for sap or fruit and nut trees that may be harvested within a year should not be treated.

Bark banding and soil drench/soil injection techniques have also been effective on a limited scale. Through-the-bark TGR application means that the material must penetrate the suberized (corky) inner and outer bark layers. This method is generally effective only in young or thin-bark trees.

TGRs penetrate the unsuberized bark of tree roots much more easily. Indeed, Clipper was recently labelled for soil injection. The material is a powder that is mixed with water and injected six to eight inches into the soil around the root collar.

The advantages of soil treatment include relatively low-cost treatment and no mechanical wounding. The perceived threat of groundwater contamination is an inherent drawback with this technique. Despite these and other obstacles, Kidd feels that researchers at Dow-Elanco and other companies are close to being able to recommend alternative TGR application techniques.

**Side effects**

Most of the criticism of TGRs is in some way related to the physical
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process of injection. Most of the TGR injection horror stories occurred prior to 1988. In an era of experimentation, TGRs were being applied at the wrong time of year and often in toxic amounts. Sloppy injection techniques such as improper drill hole angles, unnecessarily deep holes and excessive injection pressure led to “blowouts,” cambial die-back, “weeping” and general treatment ineffectiveness.

According to Watson, many of the early problems with TGR use are related to improper dosage. The amount of material injected per hole depends upon the product being used, the tree species and the crown size.

Where is TGR use headed? Since 1988, a change of attitude has significantly improved the physical practices involved in TGR injection. Even under the best of circumstances, critics argue, tree injection involves tree wounding. But injection might offer a favorable tradeoff since it results in less pruning, which is also a tree-wounding process. Watson believes that injection does considerably less damage than repetitive trimming. For example, without TGRs, a tree trimmed every two years would be trimmed 10 times over a 20-year period. This continual trimming and disruption of the previous compartmentation usually results in the gradual decline and ultimate death of the tree. The same tree treated with TGRs would be trimmed only three times over a 20-year period.

A survey done as part of the ESEEERCO study found an 86% acceptance rate among respondents. Growth regulation is only one alternative available to those who must reconcile the problem of the tree co-existing with the wires. Proper pruning is—and probably always will be—the most significant remedy. The combination of proper pruning and TGR use has proven to be beneficial to the trees as well as to those who must maintain them.
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The Occupational Safety and Health Act requires employers with 11 or more employees to keep records of occupational injuries and illnesses. OSHA Form 200, “Log and Summary of Occupational Injuries and Illnesses” is used to record job-related injuries and illnesses that have occurred in the previous year.

Employers are required to post OSHA’s Form 200 from February 1 to March 1. The form must be posted in a place where notices to employees are customarily posted. The information on the form includes the type, extent and outcome of injury and illness that occurred during the past year.

Form 200 is designed to help employers and OSHA spot workplace hazards that need correcting. Even if no injuries or illnesses occurred during the year, zeros must be entered. The form must still be posted.

All records must be retained for five years following the end of the calendar year to which they relate. The recording of non-fatal injuries is limited to those that require medical treatment or involve loss of consciousness, restriction of work or motion, or transfer to another job. Minor injuries requiring only first aid treatment do not have to be recorded on the form.

Employers with 10 or fewer employees are exempt from these requirements.

Copies of OSHA Form 200 can be obtained from OSHA field offices, or from the OSHA Publications Office, Room N-3101, 200 Constitution Ave., NW, Washington, D.C. 20210. Phone: 202-523-9667.

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**EPA Surveys Wells**

Nitrate is present in 52% of the nation’s community drinking water wells and 57% of rural domestic wells, according to a survey by the Environmental Protection Agency.

Pesticides and pesticide degradates in drinking water wells were found much less frequently, according to survey results.

The National Survey of Pesticides in Drinking Water Wells was conducted over the last five years. The survey’s objectives were to determine the frequency and concentration of pesticides and nitrate in drinking water wells nationally, and to improve EPA’s understanding of how the presence of those substances in drinking water wells is associated with patterns of pesticide use and the vulnerability of groundwater to contamination. Both community water systems and rural domestic wells were sampled. Minimum reporting limits were set. The quality of ground water, surface water, or drinking water at the tap were not focused upon.

Dangerous nitrate levels were found in only 2.4% of all private wells and 1.2% in public supplies. Dangerous pesticide levels were found in less than 1% of all groundwater supplies. Compounds used to control broadleaf weeds were most commonly detected.

Nitrate can come from fertilizers, animal wastes, septic systems, plant residues, and fixation from the atmosphere.

At least one pesticide or pesticide degradate was located in 10.4% of community wells, and 4.2% of rural domestic wells.

Contact your local or state health department for information on private wells. If a community water system is in question, contact your local community water system owner/operator or the state water supply agency.
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Public Contracts

Be Aware Of Laws That Apply To Municipal Jobs

By Thomas Clancy
TCI Staff

As the wave of environmental concern continues to build momentum, companies should be investigating what public funds are available for beautification projects, tree plantings and maintenance contracts. If you are fortunate enough to receive a municipal contract and there are federal funds attached to it, you should be aware of a wage-and-hour law called the Davis-Bacon Act.

Enacted in 1931, the Davis-Bacon Act requires private contractors to pay federally determined wage rates, set by the Secretary of Labor, on federal and federally assisted construction projects. This law is in effect when the project entails either alteration or repair of government property or when there is government financial assistance involved in an alteration or repair of public property. The law’s effectiveness has been the subject of heated debate.

According to the U.S. Chamber of Commerce, the Davis-Bacon Act, as currently administered, restricts competitive bidding on federal construction contracts, unduly increases their costs and impedes the hiring of youth, minorities and women in construction.

A 1979 General Accounting Office study found the law unnecessary and wasteful and called for its repeal. A Carter White House study found that under the Davis-Bacon Act, wage rates usually are set at or near union scale and that certain reforms would save the federal government more than $1 billion annually. A 1983 Congressional Budget Office report, as well as former President Reagan’s Private Sector Survey on Cost Control, also projected tax-dollar savings of more than $1 billion annually if the act were repealed.

On the other hand, construction trade unions claim the Davis-Bacon Act is needed to prevent low-wage competition on federal and federally assisted construction projects and they oppose the notion of the act’s repeal. In fact, these groups support expansion of the act’s coverage and new legal rights for employees.

How the law works

As is the case with many laws, Davis-Bacon is full of loopholes making small projects highly unpredictable. To help you better understand the act, let me give an example of how it works and how companies can get in trouble if they put workers on the job before they check what wage-and-hour laws apply.

Let’s say Clancy’s Arboricultural Enterprises (CAE) receives a contract from the City of Boston to plant new street trees and prune existing
ones in a South Boston neighborhood. The funds for the project come from a Housing and Urban Development grant from Washington, D.C.

The contracting officer from the Boston Housing Office (BHO) doesn't tell CAE that Davis-Bacon applies. Crew members, foremen, climbers and ground personnel are paid the usual hourly wage, which is the non-union prevailing wage rate but below union average.

CAE finishes the job and the owner realizes a nice little profit, or so he thinks. Two months later, the contracting officer at BHO calls and tells CAE that BHO failed to inform the company that the contract fell under the Davis-Bacon Act and that CAE should have been paying its employees the prevailing union wage rate as determined by the U.S. Department of Labor. The owner must now pay his employees the difference in wages or face prosecution.

What if CAE was the sub-contractor on this project? It doesn't matter because CAE was performing an alteration or repair to a federally subsidized project. A contractor or subcontractor hired only to haul away the debris would not fall under the act because the cleanup would not be considered an alteration or repair.

With Davis-Bacon, the U.S. Department of Labor is supposed to set the prevailing wage rate. In its purest form, the rate is set by conducting a wage survey of contractors in the area and taking an average for each job description (i.e., foreman, climber, ground personnel, etc.).

In practice, however, the local union representative often is called and the Department is given a union wage list. From this list, the union wage is estimated and used as the prevailing rate. Thus, Davis-Bacon wages are always higher than the average prevailing rate.

Other laws may apply

There are more than 60 other federal acts that apply to government projects not covered under Davis-Bacon. In the above example, CAE would have been required to employ a percentage of minority workers, based on the percentage of minorities living in that area.

Most states have "mini Davis-Bacon" legislation that imposes similar restrictions on state-funded projects. Check with your state Department of Labor for wage-and-hour regulations that may apply to you.

Don't be turned off to applying for municipal contracts. Just beware that if federal money is being used to pay for them—either totally or partially—they could fall under a wage-and-hour law like Davis-Bacon and could end up costing you money. Make sure you find out first what laws apply.

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ROW Maintenance

By Brian Barnard
TCI Staff

Transmission line clearance, also called right-of-way (ROW) maintenance, differs from distribution line clearance in methods of vegetation management, equipment used, and in where the work takes place. ROW maintenance uses clear cutting, herbicide treatments, or a combination of cutting and herbicide treatments. Utilities and contractors have also experimented with vegetative manipulation and prescribed burning of the utility corridor. Trends in ROW maintenance have been driven by environmental concerns and advances in technology.

John Lucas Tree Expert Company, Inc., in Portland, Maine, maintains 12,000 acres of right-of-way per year. Clients include utilities, telephone companies, pipelines, and oil companies. Bids for contracts are made annually. The bidding season runs from November through April.

Like many industries, the environmental movement has affected ROW maintenance. Arthur Batson, president of Lucas Tree, feels there have been swings from chemical treatment to cutting then swings back because cutting was not as cost-effective. Now the industry tends to use both techniques.

Chemical use declines

Thanks to advances in technology, contractors have drastically reduced the volume of chemicals used to control woody plants. Chemicals are much more target-specific today. “We have gone from high volume broadcast sprays to hand-held equipment that delivers smaller quantities of chemicals,” Batson explains. “Backpack pumps are used to deliver an accurate dose of chemical on a specific site.”

However, Batson pointed out that broadcast sprays are still needed in some areas. Oil tank reservoirs are one example. No vegetation can remain around the tanks due to fire prevention concerns. In such cases, broadcast spraying is the most effective and cost-efficient method of vegetation control.

Walgren Tree Experts, Inc., in West Hartford, Connecticut, has gone from broadcast sprays to ultra-low-volume herbicide applications. In the past, 1000-gallon spray rigs were hauled to the site. Today, Walgren employees apply material with 2-1/2-gallon backpack sprayers. Paul Clement, utility supervisor for Walgren Tree, says that all of the work done for Northeast Utilities is selective, particularly near waterways. “In theory, we are trying to girdle the plant,” Clement says. Depending on the size and species of the plant being sprayed, the bottom two to four inches of the stem is saturated. Larger trees and thick-barked species may require more. “Approximately two gallons of mix per acre is applied,” Clement explains.

Since the company started using the low-volume operation, a significant amount of natural re-seeding has taken place. The new growth has been detected in areas that were previously sprayed. High-volume, broadcast sprays allowed little natural re-seeding due to the amount of herbicide applied.

Lewis Tree Service, based on Long Island, does all types of transmission work along the East Coast. Richard Alt, vice president of Lewis Tree, feels that chemical application, even with its advantages, is becoming increasingly hard to justify. “The consumer is becoming more knowledgeable about chemicals,” he notes. Alt believes the high number of studies on the effects of chemicals and the availability of these studies to the public have made consumers aware of the general impact of herbicide applications. With the exception of limited stump sprays, Lewis Tree Service does little herbicide application.

ROW cutting can be accomplished with large, self-propelled equipment and small, hand-operated tools. Large mowing machines pulled behind tractors and hydro-axes or fellers/bunchers are used in clear cutting operations. Machines with boom-mounted articulating cutting heads are used for side clearing. Batson points out that the effect of clear cutting is similar to that of broadcast spraying because both are non-selective. Hand cutting is the manual equivalent of selective spraying.

Environmental groups, utilities and contractors share concern about the impact of ROW maintenance on wildlife populations. The Davey Tree
Fxpert Company, Philadelphia Electric Company, Pennsylvania Power and Light Company and Asplundh Tree Expert Company have been conducting a study on wildlife near Philadelphia since 1985. The study looked at five different ROW vegetation management techniques: hand cutting, mowing, mowing with a herbicide follow-up, foliage spray and stem-foliage spray. Preliminary results show that individual vegetation management techniques affect bird populations. Decreases in both the number of birds and species occurred on hand-cut and mowed areas, while increases occurred on stem-foliage treatment and mowing with a herbicide follow-up treatment area. It appears as though retention of an adequate shrubby border was key to retention of a bird population. The study will assess long-term effects.

Special challenges
The stability of the transmission line clearance industry varies. Companies that have distributed their services over several parts of the country have been able to absorb the recent economic downturn. Firms relying on local contracts run a greater risk of suffering from economic fluctuation.

In ROW maintenance, as in any business, challenges to complete tasks must be overcome. Weather, particularly deep snow, is often an obstacle for those trying to reach transmission lines. The terrain must be evaluated and decisions made on what method of control is most appropriate for the location. Also, many states and cities have specific ordinances that need to be understood before bids are placed, and followed during ROW maintenance operations.

One major challenge facing the would-be contractor is finding and keeping qualified personnel. “It takes a special kind of person to do this type of work,” Clement explains. Much of the work is labor-intensive—such as herbicide applications which are done on foot—and heat, brambles, briars, and ticks are ever-present hazards. “The crew leader who makes sure the crew has the proper equipment makes the difference in personnel difficulties,” he notes.

The transmission line clearance industry is a unique fragment of the tree care industry as a whole. Still, it faces the same challenges, such as environmental concerns, finding good help and finding work.

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Citations & Defenses
An Employer's Checklist For Defending Against OSHA Citations

By Steven R. Semler

Many employers pay the modest fines that often accompany citations from the Occupational Safety and Health Administration because they feel it is cheaper to pay than to fight. Others feel that it is fruitless to take on the government. Both arguments are wrong.

Paying a fine establishes an OSHA citation as a violation. The next time the employer is found to have violated the same regulation, OSHA can classify the violation as a repeat, subject to fines of up to $70,000. Thus, a successful defense can keep a citation from becoming the basis for a subsequent repeat citation. Moreover, filing a timely "notice of contest" against the citation is wise because employers win half of such proceedings. Even without proceeding to a hearing, many such cases can be settled in a compromise agreement.

While there is no substitute for review of the citation by experienced OSHA counsel, the employer can perform an initial screening based on this preliminary checklist.

1. Lack of OSHA jurisdiction. Sometimes, another agency—such as the Department of Transportation—has jurisdiction over a specific safety issue cited by OSHA. Even if you do not comply with the other agency's rules, OSHA's jurisdiction is displaced.

2. Incorrect industry standard cited. OSHA frequently makes the mistake of citing tree trimming under the usually more strict "Part 1926" construction industry OSHA standards. However, it is established through precedent, that tree trimming usually is deemed to come under the less strict "Part 1910" general industry standard. If you are cited under the construction standard, OSHA might drop the case if there is not a general industry counterpart to the construction standard cited.

3. No exposure. A violative condition can sometimes be overcome on the grounds that no employee ever can be exposed to it—such as where a chipper engine is unguarded but employees never go near it.

4. Inapplicability of the cited standard. Even if the correct industry standard is cited, it may not apply because another standard, with which you comply, more accurately covers the facts. Or, the cited standard may apply to an industry or situation that does not apply to you.

5. General duty citation preempted by a specific standard. OSHA can issue citations under specific industry standards or under a
catchall standard known as the general duty standard. The tip-off of a general duty citation is the reference in the citation to a Section 5(a)(1) violation. If, however, a specific standard covers the cited situation, a citation issued under the general duty clause is wrong because the specific standard takes precedence over the general catchall standard.

6. General duty citation defective. In order to win on a general duty citation, the government must prove each of the following points:
   —That there was a hazard;
   —The hazard was known to the employer or should have been known to him due to practice and custom in his industry;
   —That there are steps proposed to avoid the hazard;
   —The above steps are feasible to implement in the employer’s situation.

7. Impossibility of compliance. Sometimes it is impossible to perform a job the way OSHA demands, but the employer must be able to prove that alternative means of compliance were either used or unavailable. For instance, requiring a tip-guard on a chain saw may render it impossible to cut a wide tree, but alternative protection might be supplied if the saw is equipped with an anti-kickback device.

8. Greater hazard defense. If compliance with the cited regulation would actually make the job more dangerous, and no alternative safety device can be used, a defense can be established.

9. Unpreventable employee misconduct. If the employer has a rule requiring a safety practice, the rule is communicated to employees and there is proof that the rule is enforced, then the employer has done all he can for safety and is not responsible for employee non-compliance.

10. Inaccurate testing. Many citations rely upon testing or monitoring of workplace conditions by OSHA. Sometimes OSHA does not properly use its test equipment. Sometimes employees spike the results. For instance, in one case where employees were trying to make a notice violation, they held road cones up to their dosimeters (noise-level testers) to intensify chain saw noise levels.

Other defenses

Other technical defenses also may be available—such as invalidity of promulgation of the cited standard, statute of limitation, incorrect calculation of penalty, incorrect classification of violation when a lower grade of violation and/or lower penalty would be more appropriate.

The point is that if you smell a rat in an OSHA citation, there probably is one present which can be exploited to your benefit.

Steven R. Semler is a partner in the Washington, D.C. law firm of Semler & Pritzker, which exclusively represents management with respect to labor law matters. Mr. Semel is labor law counsel to NAA and several corporations in the tree care industry.

Readers should not rely upon this article as individual advice for specific situations; that can be provided only by the reader’s own counsel.
Line Clearance
One Company's Efforts For Public Acceptance

The first overhead lines in the United States were built in 1839 for telegraphic communication between Baltimore, Maryland, and Washington, D.C. In 1876, lines were needed for the newly invented telephone, and electrical distribution began in 1882.

In the early days of line clearance, trees in public rights-of-way were considered to be obstructions to progress. Unskilled men used crosscut saws, axes and horse-drawn skidders to stub cut or remove the trees. In the 1920s and '30s, demand for electricity and telephones increased. Uninterrupted electricity and communications became increasingly important during times of war.

The Davey Tree Expert Company, in Kent, Ohio, entered the line clearance business in 1921. Paul Davey, son of company founder John Davey, sold the first line clearance contract to Northern Ohio Power & Light Company to clear power lines in Kent, Ohio. Davey initially limited its involvement because of its concern over public opinion.

This concern led to new methods of "natural trimming," which leaves the tree in good health. Natural trimming involves cutting branches to a lateral branch near the center of the tree crown and directing or shaping the remaining growth away from the conductors. Davey has used this method from the beginning to provide safe, effective line clearance.

Davey employs several methods of tree pruning to clear lines: top trimming - removing vertical branches to meet power company standards for top clearance; side trimming - removing lateral branches that head into or toward the wires; under trimming - removing limbs from the tree canopy so lines can pass by the tree; through trimming - removing branches within the crown to allow wires to pass through.

Davey Tree conducts ongoing research into improved line clearance techniques and equipment. One important innovation is the Davey Four Point Injector for tree growth regulation. The Four Point Injector, patented in 1990, allows users to load and inject tree growth regulators by

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"We can’t just be tree cutters. We need acceptance by the homeowner and by the general public."

— Wayne Parker, The Davey Tree Expert Company

Wayne Parker, Davey's operations/administration manager, says that Davey's tree trimming operation competes in a service market based on customer service. "We can't just be tree cutters. We need acceptance by the homeowner and by the general public," he says. Parker believes that the public wants line clearance service done with concern for the environment, for the economy, for aesthetics, and that meets widely accepted arboricultural standards of practice.

The growing labor shortage presents another challenge for companies like Davey, since the work is highly labor-intensive. Parker believes each employee must be an ambassador for Davey and for the utility on whose lines he works. "This is a profession, not just a summer job. Training our employees, giving them the knowledge, equipment and backing that (with research) makes sure they are working with the latest techniques and guarantees we provide high quality work," says Parker.

"We're always looking for ways to build a better mousetrap," he adds. "We train our supervisors in problem resolution, safety and management techniques."

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Pruning Trees Near Electric Utility Lines:
A Field Pocket Guide For Qualified Line Clearance Tree Workers

This pocket-size guide written by Dr. Alex Shigo contains 26 large diagrams and two full-page photos. Intended as a field guide for tree workers trimming trees near power lines, it is a handy reference for the basic cuts and other techniques that should be used to preserve the appearance and vitality of the trees. The ideas it advances are also intended to reduce re-sprouting as well as the time it takes to trim.

In this booklet, Dr. Shigo advances a new idea he calls the “90-3-90 Concept”—that 90% of the time, three branches can be removed to provide 90% of the clearance. Shigo promotes removal of whole limbs growing toward lines as well as limbs that, if cut, would produce sprouts that would grow toward lines. It teaches the tree worker that it is better to remove an entire limb when the alternative is to create a long limb with relatively little foliage.

Utilities and line clearance contractors have made extensive use of this booklet. It is 36 pages long with a bright yellow cover. There is space on the back cover for organizations to imprint their names and addresses. The single copy price is $3, with substantial discounts for quantity purchases. It can be ordered from Shigo & Trees, Associates, 4 Denbow Road, Durham, N.H. 03824-3105, or by calling 603-868-7459.

Powerful Problems/Growing Solutions
A Videotape From The I.S.A. Research Trust

The International Society of Arboriculture Research Trust recently released this 12-minute VHS videotape. Notice of its release appeared in the August 1990 issue of TCI.

The video addresses the problems encountered in tree/utility line conflicts and sensitizes utility companies and communities to each other’s concerns. The program emphasizes the importance of “compromise and cooperation” to preserve the tree resource while maintaining a vital service.

This video can serve as an excellent public relations tool, but like any tool, the user should be aware of its correct uses as well as its limitations. “Powerful Problems/Growing Solutions” provides excellent guidance for the homeowner or landscaper who wishes to find species of trees suitable for planting under wires. The viewer will see several examples of specimen, low-growing tree varieties, learn the names of many more, and be given instructions for planting trees of various mature sizes.

The video accurately illustrates that certain trees simply cannot grow under wires and should be replaced, but downplays the fact that, under the right conditions and with proper care, trees and wires can co-exist. It does not go into depth on suitable pruning practices and the reasons for minimum pruning clearances. It alludes to topping as something that can lead to tree decline and ultimately removal, but it does not explain the alternative, “natural pruning” techniques that may prolong the life of trees near wires.

The program was developed by William Wheeler, forester for the Louisville Gas and Electric Company, and Mark Timmons, an independent horticultural expert. It can be used to present to citizens groups, city officials, utilities and others concerned with tree/utility conflicts. It may be purchased for $25 (U.S.) by sending a check or money order to: ISA Research Trust, P.O. Box 908, Urbana, Ill. 61801.
Tracy Lawless Receives Arbortech Scholarship

Tracy Ann Lawless is the 1990 recipient of the Arbortech Tilford Scholarship award. She will graduate this spring from The Ohio State University Agricultural Technical Institute (OSU/ATI), where she has a double major in Landscape Contracting and Construction and Nursery and Garden Center Management.

She recently became an Ohio-certified arborist.

Ms. Lawless, a native of Akron, Ohio, attended Kenmore High School. After obtaining her GED in 1976, she tried her hand at various occupations. In 1985, she participated in The Davey Environmental Services Training Program. One of the first women to graduate from this program, she then took a job with the Bloom Tree and Landscaping in Hartville for two years.

In 1988, she was employed by the City of Akron as a seasonal tree trimmer. The following winter, she decided to return to the classroom to pursue a career in urban forestry.

"Trees have been a lifelong love," Ms. Lawless said. "If we don't take care of them, our children will miss something beautiful."

During her first year at OSU/ATI, Tracy had the honor of being the first to be awarded the Davey Company Arboricultural Grant.

She says she would prefer to stay in the Wooster area after graduation, but "will go where the best career opportunities are in the area of urban forestry. I haven't closed my mind to any job opportunity, even those involving sales in the area of arboriculture."

Tracy has an 11-year-old son, Ryan.

California Arborist Association Seeks Members

The California Arborist Association is looking for a few good members. Established in 1934, the California Arborist Association is an active, non-profit organization of professional arborists.

The association's activities include: the annual Northern California Tree Trimmer's Jamboree; public education activities and services; arboricultural seminars; annual tree climber training seminar; annual aerial rescue training seminar; annual dinner meeting for members and friends; monthly meetings, including educational programs; member available slide and video packages; and many cooperative efforts with companion organizations.

For information or an application, contact The California Arborist Association, Inc., c/o Torrey Young, Treescapes, Inc., P.O. Box 13141, Oakland, California, 94661. Phone: 415-638-0781.
Manuals, Brochures Now Available From CTLA

Various manuals, brochures and audio-visual programs are available from the Council of Tree & Landscape Appraisers.

"Manual For Plant Appraisers" is a handbook of methods, procedures and problems of plant appraisal. Cost is $12 each ($10 for orders of 11 or more) for members; $22 each ($20 for orders of 11 or more) for non-members.

Several brochures are also available. "Tree Values" is a homeowner's guide to planning, evaluating and reducing possible losses of trees and specimen shrubs. "The Tree Casualty Puzzle" discusses steps taken in the appraisal process, and briefly explains tax/insurance ramifications. "When a Tree is Damaged or Destroyed" is a guide for real estate, insurance, tax and legal professionals in dealing with casualty losses to trees and other landscape plants. Cost of brochures is 30 cents each.

"Landscape Appraisal Court Cases" discusses court cases reflecting methods of appraisal presented in the "Guide for Establishing Values of Trees & Other Plants." It is available for $15.

"Tree Casualty Puzzle," an audio-visual program, includes a step-by-step demonstration of the appraisal process and is appropriate for professional as well as lay audiences. The program includes cassette, 59 slides and script. The set may be rented for $30, or purchased for $90. Rental fee may be applied toward the purchase price.

Field report forms are also available for professional appraisers. The form is designed for field use or as a file folder and includes an area for sketching the landscape plan, a guide for judging condition, location value chart and shade-tree evaluation schedule.

The CTLA is comprised of a representative from the American Association of Nurserymen, the American Society of Consulting Arborists, Associated Landscape Contractors of America, the International Society of Arboriculture and the National Arborist Association.

CTLA distributes news stories, feature articles, audio/visual programs, printed materials and the like. Its designated representatives meet at various times throughout the year to develop these tools, and a small office in Washington handles distribution.

For further information contact CTLA, 1250 Eye Street, N.W., Suite 504, Washington, D.C. 20005.

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**Bandit Industries, Inc., Introduces**

the Model 1900 Track Bandit whole tree chipper. The 1900 is driven by a Caterpillar 225 undercarriage with 30-inch pads and a 2-speed piston motor track drive. The drive system includes a hydraulic system with a hydrostatic variable speed drive and a variable travel speed of 0 to 1.3 mph. The 1900 will chip trees up to 19 inches in diameter and will chip an 80-foot whole tree in less than a minute. Contact Bandit Industries, Inc., 6750 Millbrook Road, Remus, Mich. 49340. Phone: 517-561-2270.

**Levco announces its newest stump grinder model—the HD47D.** This new machine features a 39-hp Kubota water-cooled diesel engine. A 37-hp Wisconsin air-cooled gasoline engine is also available. The HD47D cuts stumps of any kind, age or diameter from 40 inches above grade to 20 inches below. The HD47D is one of nine models available from Levco. For further information, call Levco Manufacturers, Inc., Wynne, Arkansas, 501-238-8126.

**Mycogen Corporation announces**

name and logo changes for several of the products it licensed from Safer, Inc., earlier this year. Safer* Insecticide Concentrate now will be named M-Pede* insecticide, and Moss & Algae Killer now carries the name Demoss* moss and algicide. Sharp-Shooter* retains its name. All products now display the Mycogen signature “sunburst” logo. Mycogen Corporation develops, manufactures and markets biopesticides to control a variety of insects, weeds and other pests. Mycogen’s products are based on natural agents which are compatible with the environment. Through genetic engineering technology and innovative formulations, the company develops products that fulfill the changing needs of the nursery and greenhouse manager, arborist, landscaper and other users. For further information contact Mycogen Corporation, 5451 Oberlin Drive, San Diego, California 92921. Phone: 619-453-8030.

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**For additional information, contact:**

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TREE CARE INDUSTRY - FEBRUARY 1991
FOR SALE

Morbark Eeger Beevers & Asplundh Whisper Chippers, Leuco & Rayco Stump Cutters, new and used. Tree trucks and whole tree chip-harvesters. Financing available. Call the Tree Disposal Headquarters at Morbark Mid-Atlantic. Ask for Dave Lindsay at 1-800-462-2447.

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, Conn. 06880. 203-226-4335.

Aerial bucket trucks—Hi-Ranger, Asplundh, Sky Worker—most major brands—40’ to 95’. Also, brush chippers, stump grinders, tree spades, log loaders, and Rayco stump cutters. Parts for aerial buckets. Allied Utility Equipment Inc., W 204 North 11509 Goldendale Road, Germantown, WI 53022. 414-255-6161 24 hours.

Surplus tree equipment for sale: 1979 Chevy 6-wheel diesel and HIAB 550 log loader with grapple, $14,500; 1986 VO 50 complete forestry package, $42,500; Morbark diesel chipper, $8,500; two Asplundh chippers, $3,800 and $5,200; truck-mounted TS-44 Vermeer tree spade, $10,500. Contact Community Tree Service, Inc. 508-256-0341.

1980 45-foot Aerial Lift, Ford F700, 370 V8, 5x2 transmission, 12-foot chipbox, saddle toolbox, new Emeron paint, excellent condition, $36,000; 1982 Asplundh Chipmunk chipper, 4-cyl. remanufactured White engine w/1500 hrs., good condition, $3500; 1984 Woodchuck chipper, 4-cyl. White engine w/3000 hrs., good condition, $4,500. All originally new. Haupt Tree Co., Inc., equipment, located in Western Massachusetts, 413-229-8565.

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Classified rates: $40 per inch (1-inch minimum), payable in advance. Send ad and payment to: Advertising Department Tree Care Industry P.O. Box 1094 The Meeting Place Mall Route 101 Amherst, N.H. 03031
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That Christmas Itch

By Joseph J. Camilliere III

With the holiday season just around the corner, my wife, Donna, commenced with her holiday chores of making evergreen wreaths and roping to decorate the house. This usually means that I need to line up a few evergreen removals to provide the greens and gather cones, berries and other forms of garnish.

This year Donna decided to gather all types of horticultural garnish, leaving it up to me to properly identify the tree or shrub from which the various cones, berries, etc., came.

One night I arrived home from work to find Donna and Denise, one of Donna’s coworkers, proudly decorating several wreaths. I should add that they are both professional horticulturalists on a large private estate. Two of the wreaths were decorated with clusters of waxy white berries which looked quite nice against the evergreen background.

“Are they beautiful? These white berries add such a special touch—what are they?” Donna asked, proudly displaying one of the wreaths.

I looked more closely at the berries. Then I looked at Donna and Denise in total disbelief. “Those berries are going to add more than just a special touch—they’ll add a special itch. They’re poison ivy berries,” I answered.

Donna and Denise looked at me, looked at the berries and together said: “No way! They came from a tall bush in the middle of a field.”

I explained in vain that although poison ivy is a vine, when growing in an open area it can take on the form of a dense, upright shrub. Despite the “mysterious rash” they had both developed on their hands, they both denied that it was poison ivy. After all, they are professional horticulturists.

I told this little story to my tree crews, explaining how poison ivy can take different forms, that all parts are poisonous and that you can most definitely catch it in the dormant season, especially in chain saw dust.

Proper identification of noxious plants such as poison ivy, poison oak and poison sumac should be taught to all employees, with key identification features for all seasons. A serious rash can be quite debilitating, resulting in lost time on the job.

When we do have to work around such plants, appropriate clothing, gloves and washing with products such as Ivy-Rest can reduce rashes. If you or any of your employees are especially sensitive, avoid the plant or ask your physician about treatments to build your resistance.

As for my wife and her friend, their rashes have cleared. They still deny that the berries were from poison ivy, but none of the wreaths still have the waxy white berries. I guess the birds ate them!

Joseph J. Camilliere III is an arborist with the Carpenter-Costin Co., Inc. in Swampscott, Massachusetts.

Do you have a story for From the Field? TCI will pay $50 for published articles. Submissions become the property of TCI and are subject to editing for grammar, style and length. Entries must be submitted by field workers and must bear the name of the worker and his employer 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.
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