



December 9, 2008

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**Concerning:** Docket No. OSHA-2008-0012, the Advanced Notice of Proposed Rulemaking (ANPRM) for Tree Care Operations.

To Whom It May Concern:

The Tree Care Industry Association, Inc. (TCIA) enthusiastically supports the development of an OSHA Standard for tree care operations that is derived from the most recent revision of the ANSI Z133.1, the American National Standard for Arboricultural Operations – Safety Requirements (Z133).

We firmly believe that it is vital for any Tree Care Operations standard adopted by OSHA to be based upon Z133. The ANSI Z133 standards-making body pre-dates OSHA. The Standard was developed and has been continuously revised through a consensus process by recognized industry safety experts from diverse tree care backgrounds, including representatives of labor, management, academia and government. Its performance-based requirements are derived from hundreds of years of collective wisdom and millions upon millions of man-hours' experience in tree care operations.

TCIA, formerly the National Arborist Association, is a 70-year-old trade association whose members are companies engaged in arboriculture (tree care), tree trimming and removal, utility vegetation management, landscape maintenance and related activities. We represent approximately 1,800 companies with hundreds of thousands of employees who perform tree trimming and removal in the U.S.

It is important for OSHA to understand the "community" it intends to regulate. We conducted a survey of our members<sup>1</sup>, hereinafter referred to as "TCIA's survey," to help us prepare this response. We found that our typical member employs eight full-time "arborists" in its field force. There are estimated to be as many as 300,000 people in the Arboriculture profession in the U.S.<sup>2</sup>, so obviously the industry is comprised of many, many very small businesses.

<sup>1</sup> TCIA Member Survey, October 2008. Results are reported throughout this document.

<sup>2</sup> Dr. John Ball, South Dakota State University, personal communication. Dr. Ball has conducted a multiple-year study of accidents in the arborist profession.

We believe that the existing patchwork of OSHA standards used to regulate our industry is insufficient and confusing to understand. We have also expressed our concerns about the application of Logging Standard (29 CFR §1910.266) to tree trimming and removal operations. The reality is that logging and tree care are two separate professions, and most equipment and methods used in these respective professions are quite different. Therefore, an “Arborist Standard” is in the best interest for our industry.

We realize that in proposing rules and regulations to protect the occupational safety and health of employees, OSHA must use the best available evidence and resources to assure that such standards attain the highest degree of health and safety protection for the employee while not placing any undue burden on the employer and specifically in this case, the small business.

We begin by responding to OSHA’s ANPRM questions that attempt to characterize this industry:

**OSHA Questions:** Who performs tree care operation in the US? What industries are they in? How many entities, by industry, perform tree care operations in the United States? Which industries, other than the landscaping services industry, perform tree care operations that may be affected by a tree care operations standard? Are there tree care operations that do not employ employees classified as tree trimmers and pruners? OSHA tentatively plans to profile the industry, in large part, by identifying establishments that employ tree trimmers and pruners (Standard Occupational Code 37-013). In 2006, there were 41,000 tree trimmers and pruners. OSHA invites comment on this approach.

Tree operations in the U.S. are carried out mainly by private sector companies calling themselves arborists, tree services, tree experts, landscape maintenance services or tree surgeons. There are low barriers to entry in this business, making it difficult to count the number of practitioners. We can say with confidence that there are at least 17,000 and 20,000 such entities in the U.S. presently<sup>3</sup>.

Tree care operations are also carried out by companies that bill themselves mainly as landscape and/or lawn care contractors. Through a recent survey<sup>4</sup> among landscape contractors, TCIA discovered that half of them engage in tree trimming and removal operations, albeit on a limited basis.

We cannot speak to the validity of profiling this industry by identifying establishments employing people in SOC 37-013 other than to say that the body of data is missing a lot of employers if it only counts 41,000 employees.

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<sup>3</sup> Sources include: TCI Magazine audited circulation, May 2008; and, InfoUSA audited marketing list.

<sup>4</sup> PLANET member survey, October 2008. PLANET is an international association serving lawn care professionals, landscape management contractors, design/build/installation professionals, and interior plantscapers. PLANET was formed on January 1, 2005, when the Associated Landscape Contractors of America (ALCA) and the Professional Lawn Care Association of America (PLCAA) merged. PLANET currently has about 4,000 member firms.

**OSHA Questions:** How many tree care companies in the United States primarily perform tree trimming and removal operations? What types of tree care operations [do these companies] perform? What types of tree care operations comprise the largest part of [these companies’] business? For example, how much [their business] involves tree trimming operations and how much involves tree removal operations? Please describe the job tasks involved in tree care operations and the hazards present in those tasks.

Definitive data on how many companies do tree work is unavailable; however we can state with confidence that there are at least 17,000 such companies. TCIA’s survey indicates that 98 percent of our members perform tree trimming and/or removal, and these services combined make up almost 86 percent of their business volume. Other tree care-related operations include: tree fertilization, pesticide application, and cabling and bracing.

A relatively small number of employers engage in utility line clearance tree trimming, or utility vegetation management as it is sometimes referred to. Although fewer in number these tend to be larger employers. In TCIA’s survey, the median number of employees in a company that does one-half or more of its work for utilities is 20, as compared to a median of eight employees for all companies surveyed. Our largest utility line clearance tree trimming members each employ thousands.

Job tasks, together with the attendant hazard(s), are summarized in a separate document<sup>5</sup>, but the most significant tasks/hazards are these:

<b><u>Arborist Task</u></b>	<b><u>Related Hazard(s)</u></b>
Working at height to trim, remove or perform other work in trees.	Struck-by to person(s) on the ground from falling tree, limb, branch, hanger, or hand tools. Fall hazard to worker aloft due to failure to use fall protection; cut line; tree failure or equipment failure.
Working near energized electrical conductors.	Electric shock from direct or indirect contact.
Chain saw use while tree climbing, working from an aerial lift or cutting on the ground.	Lacerations due to chain saw kickback or accidental contact with the moving or stationary saw chain. Falls due to cut line and failure to use redundant system; tied into the cut tree portion
Using a chain saw to piece out or to fell a tree	Limbs/trees striking co-workers on the ground, or chain saw operator, or aerial lift boom causing lift failure
Operating a self-feeding brush chipper	Being caught by and drawn into the feed/cutting mechanism

<sup>5</sup> TCIA Job Hazard Analysis

**OSHA Questions:** How many employees does your company employ to perform tree care operations? Of those, how many are permanent employees and how many are temporary employees? To what extent does your company (or a company representative of your industry) rely on or use day laborers in tree trimming and removal operations?

TCIA's survey indicated that the median number of full-time field employees in a company was eight. Fifty-one percent of these employees worked full-time in tree care activities, indicating that the typical business offers a wider range of services, some of which may be seasonal. Forty percent of the field force is Hispanic. Almost 13 percent of the companies responding employed day labor; however these are typically operations consisting of an owner-operator and one or two contract laborers he or she picks up for ground help. The median number of employees is three for companies using day labor.

**OSHA Questions:** In what setting does a representative company in your industry usually perform tree trimming operations (for example, residential property, commercial property, public land, right-of-way, and near telecommunication or electric power lines)? What vehicles, mobile equipment, portable powered hand tools, and other tools and equipment do employees use to perform tree trimming operations? To what extent are tree trimming operations at (your company or) industry performed from aerial lifts, from ladders, in trees, or on the ground? In what setting does (your company) usually perform tree removal operations (for example, residential property, commercial property, public lands, and near telecommunication or electric power lines)? How many trees does a representative company in your industry typically remove on a single job or worksite?

TCIA's survey indicated that 72 percent of our members worked for residential customers and almost 20 percent worked for commercial clients. About 7 percent of our respondents worked mainly or exclusively for utility customers. About 8 percent worked on "public lands"; that is, on city streets, along DOT rights-of-way, and in public parks, etc. These percentages do not add up to 100 because companies typically work for more than one type of client.

Survey respondents had difficulty answering the question of how many trees they removed on a typical job site, but the average response was 2.5 trees per site.

Tree trimming and removal operations make use of a wide array of specialized equipment, as these survey data indicate:

<b>Equip. Type</b>	<b>Description of Equipment</b>	<b>Pct. that use it</b>
Stump grinders	Gas/diesel powered, self-propelled or tow-behind stump grinding (stump chipping) machines	86.7%
Aerial lifts	Truck-mounted, hydraulically actuated, articulating boom lift	74.2%
Materials-	Skid-steer loaders and similar devices	64.1%

<b>Equip. Type</b>	<b>Description of Equipment</b>	<b>Pct. that use it</b>
handling		
Disc chippers	Mechanical infeed chippers, with or without winches or grapples	61.3%
Drum chippers	Chippers in which the brush is thrown directly into the cutting knives <i>Note: 96% of respondents used one type of chipper or another.</i>	59.8%
Mobile crane	Truck-mounted, telescopic boom, hydraulically actuated crane	57.4%
Loaders/hoists	Truck-mounted, articulating boom, materials-handling devices	46.9%
Spider lift	Trailerred, typically self propelled articulating lift suitable for uneven terrain	11.3%
Mechanical harvesting equip.	Equipment typically used in logging; such as feller-bunchers, skidders, etc.	5.5%

This data on equipment strongly suggests that tree service firms make extensive use of materials-handling equipment to move brush and even heavier tree sections to where it can be disposed of. Brush is typically chipped and larger sections may be left on site for firewood or transported off-site on a grapple loader.

1. **OSHA Questions – Tree removal and tree hazard assessment:** How does your company or industry remove or cut down trees, particularly where space or clearance is an issue? To what extent and in what circumstances does your company or industry remove trees solely using the piece-out method? To what extent and in what circumstances does your company or industry remove trees by cutting them down all at once at the stump? To what extent and in what circumstances does your company or industry use cranes to remove trees or tree segments? To what extent does a company representative of your industry conduct hazard assessments before beginning a tree trimming or removal operation? Please describe in detail the hazard assessment process you use.

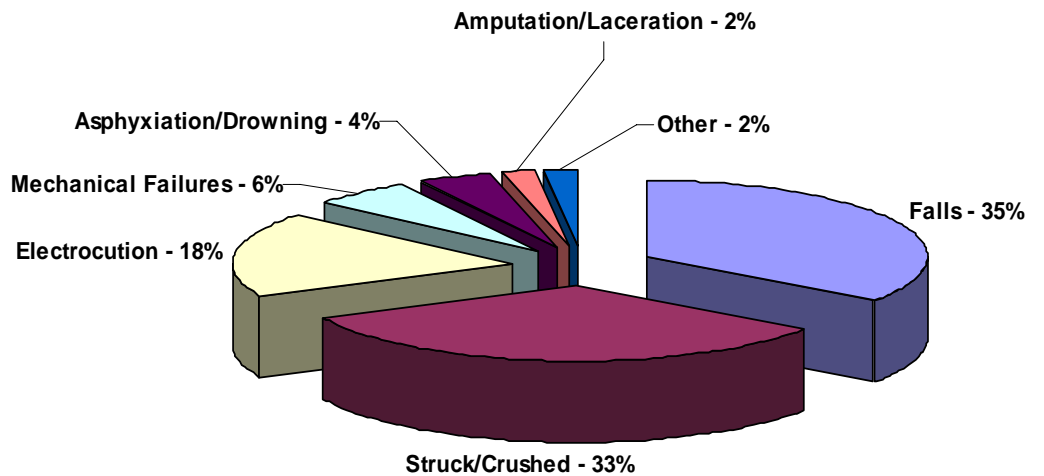
TCIA's survey indicated that the typical member derived 35 percent of its revenue from tree removal. In almost 14 percent of all removals, the tree or trees could be and indeed were removed all in one piece by felling. Please keep in mind that typically, less than three trees per site are being removed. Furthermore, arborists' practice differs from loggers' in that arborists typically install a pull line to the top of the tree to help guide the direction of fall.

In the 86 percent of all removals that could not be accomplished through felling, the tree was cut down in sections with no ropes or rigging 21 percent of the time, taken down with ropes or rigging over 55 percent of the time, and lifted by a crane 9 percent of the time. The arborist doing the cutting to remove the tree climbed it 50.7 percent of the time, operated out of an aerial lift 42.6 percent of the time, and when no other feasible or safe option presented itself, was hoisted by a crane 6.8 percent of the time.

Survey respondents indicate that they perform tree hazard assessments 95 percent of the time before working on a tree, whether for removal, trimming or any other purpose. Ninety-seven (97) percent of the time, the arborist performs a visual inspection; that is, he or she first looks at the overall canopy from a distance, then looks more closely at the trunk, the major limbs and the branches for any obvious hazard. In almost 30 percent of all cases, a closer “root collar inspection” is performed to look for structural defects of the main supporting roots. In 31 percent, the tree’s trunk is “sounded” to help detect internal decay or hollowness. In 3 percent of all cases, very sophisticated techniques are used to quantify and characterize structural defects that are not obvious from visual inspection.

**OSHA Questions - accidents, injuries, and fatalities:** How many and what types of accidents, injuries, and fatalities have been reported in the tree care industry during the past 5 years? In what operations did those accidents, injuries, or fatalities occur, and what operations had the highest number of accidents, injuries, or fatalities? What were the causes (for example, fall, struck by a vehicle or falling tree or limb, cut by chain saw or chipper, and electric shock) of the accidents, injuries, and fatalities? What was the average number of days away from work for those injuries? What was the average age and length of employment of the employees injured or killed during tree care operations?

In order to characterize the fatal and non-fatal accidents that occur in the tree care industry, we will focus on the Standard Industrial Classification (SIC) Code 0783 rather than the North American Industrial Classification System (NAICS) Code 57126, as the latter category is simply too broad and does not help us understand the risks faced by arborists. The graphs to the right and on the next page provide a breakdown of the causes of fatal accidents in our industry. Additionally we will refer to TCIA’s survey as well as two recent reports<sup>6,7</sup> furnished through TCIA’s Alliance with federal OSHA.



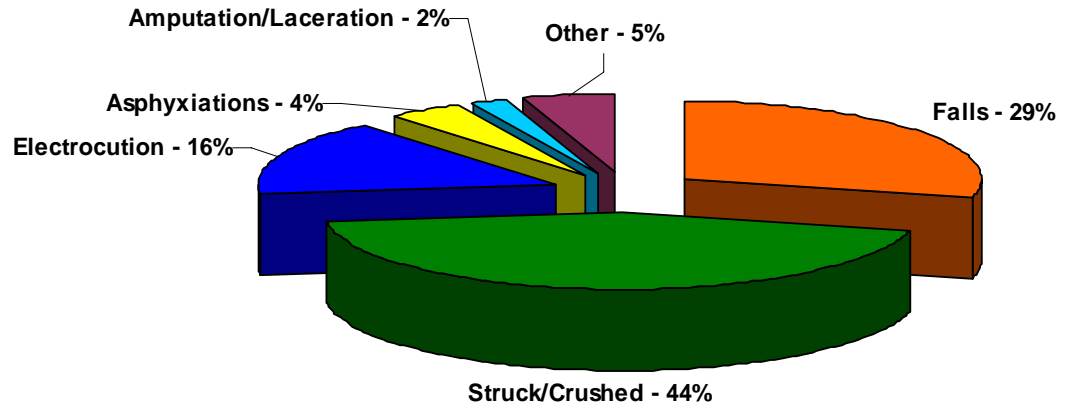
Total calendar year 2006 fatal accidents, SIC 0783 (n=51).

<sup>6</sup> Accidental Injury & Fatality Summary: Investigations Relevant to SIC Code 0783 (calendar year 2006)

<sup>7</sup> Accidental Injury & Fatality Summary: Investigations Relevant to SIC Code 0783 (calendar year 2007)

A detailed analysis of these fatality data is provided in **Appendix A** on page 13.

**Fatal accidents.** For the most part, these fatal accident causations come at no surprise to us. They are the very same types of accident that have plagued us for years, that caused the industry to develop the Z133 Standard and that now motivate us to work with OSHA on new regulation.



There are some relatively new trends that we find alarming.

The first is the rising number of fatal falls due to tree failure. Arborists need more training to be able to recognize and quantify tree hazard due to defect, and they need to exercise better judgment when deciding what methods to use to work on the tree. A crane, as one example, can provide the climber with a tie-in point that is far more secure than the tree itself. The second is the climber who suffocates when trapped under the “skirt” of dead fronds from a palm tree. Finally, there are mounting fatalities associated with chippers – both from being caught in the chipping mechanism and being struck by the chipper “hood” after it makes contact with the rotating knives. The Z133 Standard provides clear guidance on all three of these hazards, and an OSHA standard will help ensure broader compliance in the industry.

**Non-fatal accidents.** The TCIA survey asked companies how many tree care-related, non-fatal lost-time accidents they had experienced in the most recent five year period and captured information on 325 such accidents. That data is summarized below:

Of the 255 respondents, 113 companies (44%) had no lost time accidents in the most recent five-year period. Forty-five percent had between one and four lost time accidents, and 11 percent had five or more accidents.

The average amount of time lost to an injury was just over 30 days, the average age of the injured worker was 32 years old, and 67 percent of the injured workers had one or more year’s experience.

**A New Standard is Needed**

What goals should OSHA have in adopting an Arborist vertical standard? OSHA needs to offer more black-and-white guidance to its CSHOs, to its compliance assistance personnel and frankly, to the industry.

OSHA must move away from use of the General Duty clause, which provides that:

“It shall be the duty of every employer to furnish to each of his employees safe employment and a place of employment which is free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees....”

**Non-fatal accidents: The *ACTIVITY* that the injured worker was engaged in at the time of injury was:**

Ground operations other than chain saw or chipper use – 144	Tree climbing – 71
Brush chipper operation – 22	Chain saw oper. on the ground – 22
Chain saw operation aloft – 21	Tree felling – 14
Transportation to/from work site – 9	Aerial lift operation – 9
Working off a ladder – 6	Equipment maintenance – 5
Unknown – 2	TOTAL ACCIDENTS - 325

As is evident from the wording of the statute, it does not address in any way the issue of hazards associated with tree trimming operations. Instead, the OSHA Field Inspection Reference Manual allows the CSHO to issue a general duty violation and base it on a national consensus standard addressing tree trimming hazards (such as the ANSI Z133.1-20XX standard), or some other reliable industry standard the tree trimmer knew of or should have known about. So-called 5(a)(1) citations are, from year to year, consistently among the top five most frequent citations.

While preferable to no enforcement tool at all, the general duty clause in and of itself does not provide either the regulated community, employees or OSHA with substantive and consistent procedures

**Non-fatal accidents: The accident *PRIMARY CAUSE* was:**

Awkward motion, excess force – 106	Fall – 53
	Lower level – 48
	Same level – 5
Struck-by – 65	Lacerations – 51
Tree/limb – 52	Chain saw – 39
Other obj. – 11	Hand saw – 7
Vehicle – 2	Sharp obj. – 5
Caught in equip. – 13	Motor vehicle accident – 9
Puncture, sharp obj. – 5	Exposure – 6
	Poison plant – 2
	Stinging insect – 2
	Hot surface – 1
	Electricity – 1
Unspecified – 17	TOTAL ACCIDENTS - 325

and guidance on how to reduce or eliminate tree trimming hazards. Other problems with the use of the general duty clause include the inability to use it to enforce consensus standard provisions that use “should” or “may” language, and the inability to cite other-than-serious violations and levy a relatively hefty fine that the employer will surely object to.

A member of TCIA’s staff recently heard a very high-ranking OSHA regional official say that the typical 5(a)(1) citation took 700 hours for OSHA’s compliance staff to research and file. If that figure is even close to the reality for OSHA, then surely a change is needed! OSHA must move away from the use of the Logging Standard in enforcement as well as consultative activities with employers in the tree care industry. An OSHA standard closely modeled after the ANSI Z133 Standard will provide much more effective, more appropriate guidance on arborist tree felling activities than the Logging Standard.

We have filed comments multiple times on behalf of the arborist industry objecting to OSHA’s application of the Logging Standard to our industry, because it is a perfect example of a poorly-fitted standard, never intended for our industry that provides less-than-effective protections for our workers. As we have asserted in the past, the scope of our work, the hazards we face and the measures we use to mitigate those hazards are fundamentally different from logging. Here are some key issues:

- Of foremost importance is the fact that the Logging Standard is silent concerning the practice of piecing trees down, of using roping or rigging to remove trees, or of using a crane to lower a tree in large sections. Our data shows that these practices are what an arborist will use on 86 percent of all trees he or she removes. The Logging Standard is virtually silent on climbing or using an aerial lift or crane to access trees and again, on 86 percent of all trees arborists are using one or more of these means of tree access.
- 1910.266(d)(1)(v) requires the employer to assure that each employee who operates a chain saw wears foot protection that is constructed with cut-resistant material. In contrast, the Z-133 requires footwear appropriate for the job. The biggest conflict here is in the fact that the type of footwear designed for tree climbing is a more flexible shoe with different safety features. Conversely, boots designed for logging are heavier and balanced differently, and often lead to foot and ankle injuries while climbing.
- Note to 1910.266(d)(1)(vii) says that the employee does not have to wear separate eye protection where face protection covering both the eyes and face is worn. By contrast, the Z133 Standard requires separate eye protection for all arborist activities, and full face protection only if warranted. It is rare for arborists to encounter a hazard mitigated by a face shield but common to face hazards requiring eye protection. The Logging Standard affords less protection to the arborist.
- The Logging Standard’s first aid kit stocking requirements ((d)(2)(i) as well as Appendix A are inappropriate for the typical arborist applications. It is our belief that the first aid kit should be equipped to handle the types of injuries that are most common in tree care.

- The two-tree-length separation between adjacent work areas required by 1910.266(6)(ii) is infeasible in many arborist situations, and in the dismantling process of a tree, it is often safer for workers to be within the distance prescribed by the Logging Standard to conduct rigging operations correctly.

We believe that ANSI Z133 provides more effective and more realistic guidance on arborist operations employing cranes than do all other extant regulations and standards.

As OSHA already knows, ANSI Z133.1-2006 contains provisions allowing the use of a crane to lift (hoist) a qualified arborist, using an arborist climbing line and arborist saddle, and secured to a designated anchor point on the boom line or crane. The standard goes on to lay out two pages of requirements that must be met by the overall crane operation before the climber can be hoisted.

By contrast, OSHA general industry regulation and other crane standards prohibit lifting a worker on the load line, but are silent with respect to the circumstances faced by arborists with the removal of trees to dangerous to climb. Specifically, this practice has been deemed to be contrary to 29 CFR § 1910.180, Crawler, Locomotive and Truck Cranes. However, we are convinced that this guidance, when it was written over 30 years ago, was intended to prevent a worker from placing his foot into the crane hook, grabbing the load line and being hoisted into the air. That practice bears no semblance whatsoever to the carefully controlled, safe work practice utilized by arborists.

This concern has been recognized repeatedly by both federal and state agencies, as well as industry professionals. For example, in 1993, Mr. Roy Gurnham of the Directorate of Construction issued a letter of interpretation stating that “OSHA has already determined that when the use of a conventional means of access to an elevated worksite would be impossible or more hazardous, a violation of 1910.180(h)(3)(v) will be treated as de minimis if the employer has complied with the provisions set forth in 1926.550(g)(3), 1926.550(g)(4), 1926.550(g)(5), 1926.550(g)(6), 1926.550(g)(7) and 1926.550(g)(8).” The exception that OSHA made was to allow the use of a personnel basket, sometimes called a man-cage, to hoist workers, under construction conditions, on the load line. With this interpretation, OSHA made an important exception to a dated rule that benefited worker safety.

However, our industry has attempted to use man-cages to enter trees under certain conditions, but at times the man-cage can actually place the tree worker in an extremely hazardous situation. Often, the lack of balance as well as the interference from the cables and metal structure while attempting to use a chain saw creates a situation that increases risk, even jeopardizing the lives of the workers. It is, in part, for these reasons that our industry’s safety professionals developed procedures for tying into a crane above the headache ball or on a clevis near the jib or boom tip with an arborist saddle and climbing line meeting ANSI Z133 requirements. As an industry we have been using cranes this way for almost 50 years.

This issue has most notably been recognized by California OSHA in 2004 when it adopted an emergency amendment that subsequently became a permanent regulation, in their tree access standard, Title 8, Section 3427. Their original justification was: “[f]or the preservation of the

public safety and the safety of the affected workforce, it is necessary to immediately adopt standards that would prescribe a safe alternative means and method to access trees.” Amendments to Title 8, Section 3427 now permit a qualified tree worker to enter a tree suspended by the closed safety type hook of a crane when a tree cannot be safely accessed by conventional methods permitted in existing standards.

In addition, Oregon OSHA has issued a letter of interpretation condoning the practice of hoisting a climber, and Washington State OSHA regulations spell out under what circumstances a “boatswain’s chair” may be used to hoist a worker with a crane. To further understand this issue, we point to OSHA’s industry-specific standards for marine terminals contained in 29 CFR 1917.45(j)(1)(ii) provide in summary, that an employee could be hoisted by a crane or derrick in a “boatswain’s chair” or other device rigged to prevent it from accidental disengagement from the hook or supporting member. For clarification, a boatswain’s chair is a seat supported by slings attached to a suspended rope, designed to accommodate one employee in a sitting position. It is an archaic term for something that was the precursor to the modern-day work-positioning arborist saddle we use in a tree or on a crane load line.

For the record, the safety of our workers is absolutely our first priority, and is in fact the reason we use cranes the way we do. In addition, we recognize that all other safety precautions for both the crane industry and the tree care industry must be followed. The overarching reason that the tree worker is hoisted by the crane or uses the crane as a tie-in point is because it presents the safest alternative for that removal operation. Moreover, in all of the thousands and thousands of hazardous tree removal jobs in which arborists have used cranes, not one climber in our industry has been killed by using the ANSI-compliant and safe work practice of being hoisted by the crane. Juxtaposed against this statistic are the 11 tree workers who died in calendar years 2006 and 2007 when the tree they were in failed. Exercising hindsight, a crane would have offered a far more safe and secure tie-point to any one of them.

We believe that ANSI Z133 provides necessary latitude in which fall protection to use in an aerial lift, in consideration of all hazards faced by the operator.

ANSI Z133.1-2006 contains provisions addressing proper use of personal fall arrest systems while working from an aerial lift, permitting the use of either a body belt and lanyard or full-body harness/fall arrest lanyard at the employer’s/employee’s discretion. As OSHA has pointed out, a full body harness and energy absorbing lanyard are normally required (or at least preferred in a general industry application) while working from aerial lifts.

As an industry, we have struggled with this issue. On the one hand, a significant number of our membership believes that the full body harness and shock absorbing lanyard should be worn when working from an aerial lift. On the other hand, a significant number of our membership believes that there are circumstances where a body belt and lanyard provides greater overall protection, such as working directly over power lines. Both sides present valid points of view, and these viewpoints should be heard by OSHA before a decision is made.

In our experience, the only quantifiable fall protection issue arising in aerial lifts is failure to use any form of fall protection – which should be prosecuted. Between 1984 and 2002, there were 34 OSHA-recorded fatalities in Tree Trimming (SIC 0783) involving aerial lift operators and falls. The details of these accidents illustrate where the greatest problems lie:

- **23 of 34** fatalities were caused by catastrophic mechanical failure of some part of the aerial lift that slammed the victim to the ground from considerable height. Fall protection, or lack of it, was not a factor in these fatalities.
- **5 of 34** fatalities were caused by a tree or limb striking the aerial lift boom, again causing failure of the aerial lift. Again, fall protection was not a factor.
- **6 of 34** fatalities were caused by *unsecured* falls from the aerial lift, and probably would have been prevented by the use of *any* means of fall protection.

To further complicate this issue, the existing OSHA standards seem to refer to outdated information with regards to the load ratings and distances for which fall arrest equipment should be rated. We recommend further discussions with manufacturers and industry professionals before any regulation is promulgated.

At the end of all this analysis of the tree care industry and its safety issues as well as the problems attendant with using existing OSHA standards to affect some difference, the solution is actually quite simple. OSHA should begin by incorporating as much of the content of ANSI Z133.1 to promulgate an OSHA Standard as soon as possible.

We appreciate that there are myriad smaller issues to be worked out prior to adopting an arborist standard, and we are confident that workable compromises can be found. We outlined only three main areas where dialogue between industry professionals and OSHA will benefit the employees that this standard seeks to protect. These are key concerns for our members.

On behalf of our members and the hundreds of thousands of workers this proposal potentially affects, we thank you for the opportunity to comment and look forward to working with OSHA for the expedient adoption of an effective arborist standard.

Sincerely,

A handwritten signature in black ink that reads "Cynthia Mills, CAE". The signature is written in a cursive, flowing style.

Cynthia Mills, CAE, CMC  
President and CEO  
Tree Care Industry Association

## Appendix

### FATAL ACCIDENT SUMMARY INVESTIGATIONS RELEVANT TO SIC CODE 0783 Calendar Year 2006 and 2007 Data

*In keeping with the specific occupational health & safety interests of the OSHA & Tree Care Industry Association (TCIA) Alliance, this data is specifically relevant to SIC Code 0783: Ornamental Shrub and Tree Services.*

*The following summary was compiled from OSHA's IMIS reporting system and encompasses all injury and fatality accident data (available as of 10/10/08) and reported for incidents occurring within the twenty-four-month period from January 01, 2006 through December 31, 2007. Data was compiled to IMIS through standard site reporting via OSHA Forms-170.*

*TCIA presents accident narratives that are representative of the type of accident being reported.*

#### All Fatal Accidents Reported - 98

#### **Falls - 35**

##### **Due to tree failure – 11**

An employee climbed up to the top of the tree to trim the tree's crown. The tree was being cut down due to decay. The employee was strapped to the tree with a harness approximately 35 feet above the ground. The tree trunk snapped and fell over. The employee fell to the ground when the tree fell.

##### **From aerial lift, equipment failure – 7**

During initial start up and equipment inspection of a bucket truck, the employee had extended the boom from the operational basket controls to confirm boom test. However, the employee failed to ensure the truck equipment outriggers were down before test. The truck's front axle was on uneven ground. Employee had 61'-11" extended out over top of the truck before truck turned over. The truck turned over to the passenger side taking with it 60 feet of boom. Employee was slammed into the adjacent roadway. Employee suffered severe head trauma and was pronounced dead shortly before arriving at the hospital.

##### **Unsecured worker – 11**

###### **From aerial lift – 6**

An employee sustained fatal blunt force injuries after falling 35 ft from the bucket of a high lift boom truck while performing tree trimming operations. The victim had not been secured while working in the bucket.

###### **From tree (climber fall) – 4**

An employee suffered a fatal fall from a tree he was climbing to trim. The owner observed EE#1 begin his ascent using tree spikes, harness, 2 lanyards, climbing rope and a small gas chain saw. The owner and EE#2 returned to the task of cleaning up 20-30 feet from the base of the

**Falls - continued**

redwood when the owner heard some branch and leaf noise and then a thud. The owner and EE#2 rushed over to find EE#1 near the base of the tree on the ground with his climbing gear attached. CPR was administered with no success as there appeared to be extensive chest damage. It appears EE#1 fell while trying to climb above the first and second limb of the redwood tree at the height of approximately 75-90 feet above the ground. Normal practice requires using the lowest lanyard below the limb, then the second lanyard above the limb while boot spikes are set in the bark. Then the bottom lanyard may be loosened.

**From crane – 1****From tree, cut line – 2**

An employee was going to cut the branches of a tree that measured approximately 75 feet from the ground. He cut his support lanyard with a chain saw when he was cutting a limb and fell to the ground.

**From tree, cause unknown – 3****From vehicle – 1****Struck By's – 24****Tree branch, worker on ground – 7**

The injured was an owner of the company. The project was to trim some branches which had grown over the property's wood fence to the sidewalk and traffic road. Toward the end of the work, the injured walked up to the chipper on the sidewalk to turn it off. A small branch above (2 inches in diameter, 10 feet long, and 12 to 15 feet high) broke and fell on his head. There were two witnesses who saw the branch coming down. They were working on the ground, 20 feet away from the injured. The injured was taken to the hospital. As a result of the accident, the injured suffered serious head injury. The injured was pronounced dead at the hospital after few hours.

**Tree while felling, saw operator – 5**

An employee was cutting down a dead pine tree. The employee apparently intended to land the tree next to an existing palm tree. As the tree being cut began to fall, it landed on the palm tree. At that point the upper end of the dead pine tree broke off and fell. The bottom section of the pine tree had risen up and began sliding back toward the employee. The employee started to run directly away from the tree but in the direction the tree was sliding. The tree struck the employee in the head sending him to the ground where the tree landed on him and then rolled off. The employee was pronounced at the scene.

**Tree while felling, other crew member – 3**

The employee had been struck by a 50-foot felling tree and had died at the scene while paramedics were tending to him. This tree service company is responsible for cutting and processing dead, decaying trees or trees that are dying. The tree cutting crews are made up of a foreman and one or two helpers. In this case,

**Struck By's - continued**

the deceased was the only one helping the foreman for this day.

**Chipper cover – 2**

A trailer mounted wood chipper's discharge chute clogged. The employee operating the chipper shut the engine off, disengaged the clutch, climbed on the chipper with the chipper still running, removed the upper hood latch pin, and started to open the hood. The knife blade caught the corner of the hood throwing the hood into the impeller. The hood was blown off the chipper hitting the operator in the chest killing him instantly.

**Tow line – 2**

Two employees were guiding the "skidding" of three large sections of logs up an embankment using two 5/8" nylon ropes, a metal pulley system and two-bucket trucks. The 6 to 7 foot red 5/8 nylon anchor line was attached to the rear of bucket truck #1 at the top section of the roof and attached to the hook of the pulley acting as the anchor point. The white 5/8 inch nylon rope was attached to the tow hook and bumper of bucket truck #2 located approximately 30' to 40' away from bucket truck #1 and was being used to winch the white 5/8" nylon rope through the metal pulley to skid the three logs located 70' to 80' away.

**Log – 1**

Worker was struck by a log which was being unloaded from a truck mounted log loader when the log fell from its grasp, striking employee.

**Suspended load – 1****Tree branch, worker aloft – 1****Motorist – 1****Work vehicle – 1****Electrocution – 16****Direct contact, worker aloft – 6**

The worker was positioning himself in a tree near a power line in order to cut branches out of the tree. The worker apparently contacted a power line (7620 Volts to ground) that was 33 inches from the tree while rigging his positioning gear and was electrocuted.

**Through conductive tree branch, worker aloft – 5**

Employees #1 and #2 were trimming trees in a trailer park, growing close to a 34,500 volt power line. Employee #1 only had on-the-job training and he had been employed for about 3 weeks. Employee #1 had been climbing a few small trees but had no formal training. Employee #1 took the saw and cut a limb that was on his side of the power line. The limb started to lean towards the power line and Employee #1 reached over and caught the limb at the same time that it made contact with the 34,500 volt power line. Employee #2 tried to free

***Electrocutions – continued***

Employee #1 from the limb but was shocked and had to let him go.

**Through energized equipment, worker on ground – 2**

**Through energized tool, worker aloft – 2**

The victim was trimming trees near an overhead power-line rated at 22,000 volts when his "flip line" from his climbing gear came into contact with the power-line, causing him to be electrocuted.

**Energized line, worker on ground – 1**

**Crushed – 10**

**In equipment rollover – 7**

**By log/tree – 2**

**In equipment – 1**

**Suffocation, palm frond “skirts” – 6**

An employee was approximately 40 feet up in a palm tree to remove dead fronds, utilizing boot spikes and climbing harness with cable around the tree, when a section of dead fronds slid down the tree trapping the employee. The employee was unable to move or inhale due to the weight of the fronds pinning him into his harness. A co-worker and the supervisor called 911. The fire department attempted rescue, however the employee was pronounced dead by paramedics before the fire department could release him from the fronds pinning him. The body was released to the County Coroner once removed from the tree.

**Caught In chipper – 2**

**All other causes – 5**

**Asphyxiated in mulch pile – 1**

**Caught between bucket and jib – 1**

**Drowning – 1**

**Electric shock/fall from ladder – 1**

**Exposure, heat-related – 1**