

# NJ FACE INVESTIGATION REPORT



*Fatality Assessment & Control Evaluation Project*

FACE 05-NJ-081

February 1, 2007

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## **Groundman Killed by Falling Tree Section at Tree Removal Operation**

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On October 2, 2005, an 18-year-old groundman for a small tree trimming company was killed when he was struck by a falling section of tree. The incident occurred at a private residence where the company had been hired to remove four trees and to prune a fifth. The employer hired two workers as groundmen to assist him in doing the ground work as he cut down the trees. The victim, who was referred to the employer by another employee, was working his first day as a groundman with the company. His training that day was on-the-job, and included warnings from the employer to stay clear when he was working in the trees. At approximately 4:00 p.m., the employer had climbed to the top of a 50-foot-high sweetgum tree, his last tree of the day. He had already removed the branches and was cutting the tree in sections, beginning at the top and working his way down. The employer had just made a cut with his chainsaw and was pushing a section clear when he saw the victim walking on the ground beneath him. He shouted a warning and the victim tried to run clear, but the tree section struck him on the head. The victim was airlifted to the regional trauma center where he died of his injuries approximately seven hours later. NJ FACE investigators recommend following these safety guidelines to prevent similar incidents:

- **All employers and employees involved in tree work should receive training in arborist methods.**
- **Employees should use proper tree removal and communication methods as outlined in the ANSI Standard Z133.1-2000.**
- **The employer should assess each job for safety hazards and design a work plan that addresses methods of dealing with the hazards.**



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## **INTRODUCTION**

On October 3, 2005, NJ FACE staff were informed by the county Medical Examiner of the death of a tree service employee who was killed the day before, after being struck by a falling section of a tree. On the same day, A NJ FACE investigator contacted the Federal Occupational Safety and Health Administration (OSHA) Compliance Officer and arranged to conduct a concurrent investigation. On October 11, 2005, the FACE investigator and OSHA Compliance Officer met at the incident site to interview the employer and his coworker. The FACE investigator explained the program, distributed the NJ FACE “informed consent” material, and obtained permission to investigate the incident from the employer. During the visit the incident site was examined, measured, and photographed. Additional information for this report was obtained from the police report, the county Medical Examiner’s report, and the OSHA investigation file.

The employer was a part-time, self-employed tree trimmer who operated a tree service as a second job (SIC 0783, NAICS 561730). He was primarily employed with a municipal department of public works as a full-time tree trimmer, and operated his tree-trimming business as a side job during the weekend. The employer had nine years of previous experience as an employee with a professional tree-trimming company, where he was promoted to foreman after three years. He had not received any formal training, nor had he developed any written safety procedures after starting his own company, but stated that he used the book, *The Tree Climber’s Companion*, as his primary reference book for daily operations. His company was unincorporated and did not carry workers’ compensation insurance; however, he did carry liability insurance for property damage. The victim was an 18-year-old white male who had recently graduated from high school. He was referred to the job by a friend and was working his first day as a groundman.

## **INVESTIGATION**

The incident site was the backyard of a private home located in a suburban area. The home owner had hired the tree trimmer to remove three trees and prune a fourth tree. The tree trimmer hired two groundman to help him with the job; the first groundman was a 20-year-old male who had worked for him for two months on weekends and usually worked as a waiter at a restaurant.

Their usual second groundman was not available that day, so the first groundman recommended hiring his friend (the victim) to stand in for him.

The incident occurred on Sunday, October 2, 2005. The three-man crew arrived at the house at 9:00 a.m. that morning; the weather was warm and partly cloudy. The employer, who provided all the tools and equipment, instructed the two groundmen about the job before starting work. He also warned them to stay clear from the edge of the trees when he was working overhead. The crew started in the front of the property by removing one tree and pruning a second. The employer's usual procedure was to



**Photo 1**  
**Satellite Photo of Incident Site**  
*(Google Earth)*

climb the trees using climbing spikes and rope. He would take the tree down by first removing the branches from the base and continuing upward to the top. This left the tree stem, which he cut down in sections starting from the top and working his way down to the base. The groundmen were to trim and clear the branches and debris that fell on the ground. After finishing with the front, the crew moved to the back yard to remove three other trees. The crew used the same procedures, with the groundmen hauling the branches to a pile in the wooded back yard. The employer said the victim kept busy and seemed to enjoy the work. Sometime during the day the employer stated that there was a near-miss incident when a branch fell near the victim. The victim apologized and the two discussed the matter before returning to work.

As the afternoon passed, the crew moved on to remove the last tree, a 50-foot-high sweetgum tree. The employer first removed the branches, then started to remove the top in sections. He first yelled a warning to the groundmen before cutting off the top of the tree. He then began to cut a three-foot-long, eight-inch-diameter section of trunk, using a step-cut which kept the section attached to the tree by a small amount of uncut wood. The employer stated that he had cut too deeply and the section was teetering. He looked down and saw the two groundmen standing away from the tree, then pushed the section in the direction of the wood pile. As the

piece snapped away, he saw the victim walking under the tree and yelled “heads up!” and “look out!” The victim started to run, moving into the path of the falling section, which struck him on the back of the head.



**Photo 2**  
**Sweetgum tree**



**Photo 3**  
**Tree section**

The second groundman attempted to help the victim as the employer made his way down from the tree. The victim was unconscious and his breathing was very shallow. The crew yelled for help, and the homeowner called 911. The police received the first call at 4:02 p.m. and immediately dispatched a patrol car, which arrived a few minutes later at 4:05 p.m. The arriving police officers and EMS found the victim unresponsive, and continued CPR which had been started by area residents. The victim was evacuated by helicopter to the regional trauma center, where he was admitted with severe head injuries. His condition deteriorated and he was pronounced dead at 10:50 p.m., nearly seven hours after the incident.

## **RECOMMENDATIONS/DISCUSSIONS**

**Recommendation #1: All employers and employees involved in tree work should receive training in arborist methods.**

**Discussion:** In this incident, the victim was a new employee working his first day on the job. Despite the warnings given by the employer, the victim’s inexperience was evident in that he walked under the tree as the employer was working above. Tree trimming is a high-risk occupation, given the many uncontrolled situations and complex techniques and equipment used

in the field. To reduce risks, NJ FACE recommends that anyone doing tree cutting work receive training specific to their field. For tree climbers and removers, this should include climbing and tree removal techniques, landscaping, equipment operation, electrical hazards, and other related subjects. For groundmen, it should include general working procedures, perimeter safety, machine use and safety (especially using wood chippers), use of personal protective equipment, and other related topics. New employees should be closely supervised. Employers should contact one of the professional arborists associations (see Recommended Resources) for more information.

**Recommendation #2: Employees should use proper tree removal and communication methods as outlined in the ANSI Standard Z133.1-2000.**

**Discussion:** To prevent these types of incidents, NJ FACE recommends that employers follow the guidelines set by the American National Standards Institute (ANSI) in ANSI Z133.1-2000, *Pruning, Repairing, Maintaining, and Removing Trees, and Cutting Brush- Safety Requirements*. This standard requires that employees not involved in removal operations stay clear of the work area by at least two tree lengths, marking out the area where the tree or branch could fall, and that a warning is given and acknowledged before making the final cut to the tree. The standard also outlines safety practices for climbing, pruning, cabling, chipping, and bucking. Please note that an updated version of this ANSI standard Z133.1-2006, *Safety Requirements for Arboriculture*, is due for publication. A copy of these standards can be purchased by contacting ANSI (see Recommended Resources).

**Recommendation #3: The employer should assess each job for safety hazards and design a work plan that addresses methods of dealing with the hazards.**

**Discussion:** When estimating the cost of the job for the customer, and before assigning work, a qualified (experienced) tree worker should visually inspect the tree and the surrounding area to determine if the tree is safe to climb and/or withstand forces exerted by rigging operations. The inspection is done to assess hazards, including environmental, and adapt climbing and work techniques to reduce hazards and ensure safety. Based on the inspection, the employer or supervisor should create a work plan for the employees, including the use of personal protective equipment such as hard hats.

## RECOMMENDED RESOURCES

It is extremely important that employers obtain accurate information on health, safety, and applicable OSHA standards. NJ FACE recommends the following sources of information which should help both employers and employees:

### Professional Arborist Organizations

#### Tree Care Industry Association

3 Perimeter Road, Unit 1, Manchester NH 03031-1094, Telephone: (603) 314-5380

Website: [www.natlarb.com](http://www.natlarb.com)

#### International Society of Arboriculture (ISA) & Professional Affiliates

P.O. Box 3129, Champaign, IL 61826-3129, Telephone: (217) 355-3516

Website: [www.isa-arbor.com](http://www.isa-arbor.com)

#### ISA, New Jersey Chapter

629 Bryant St., Rahway, NJ 07065, Telephone: (732) 574-9100

#### New Jersey Board of Tree Experts

370 East Veterans Highway, Jackson, NJ 08527, Telephone: (732) 833-0500

### U.S. Department of Labor, Occupational Safety & Health Administration (OSHA)

Federal OSHA will provide information on safety and health standards on request. OSHA has four area offices in New Jersey that cover the following counties:

 Hunterdon, Middlesex, Somerset, Union, and Warren counties..... (732) 750-3270

 Essex, Hudson, Morris, and Sussex counties..... (973) 263-1003

 Bergen and Passaic counties..... (201) 288-1700

 Atlantic, Burlington, Cape May, Camden, Cumberland, Gloucester,  
Mercer, Monmouth, Ocean, and Salem counties..... (856) 396-2594

 Federal OSHA Website: [www.osha.gov](http://www.osha.gov)

### New Jersey Public Employees Occupational Safety and Health (PEOSH) Program

The PEOSH Act covers all NJ state, county, and municipal employees. Two state departments administer the act; the NJ Department of Labor and Workforce Development (NJDLWD), which investigates safety hazards, and the NJ Department of Health and Senior Services (NJDHSS),

which investigates health hazards. PEOSH has information available that may also benefit private employers.

#### NJDLWD, Office of Public Employees Safety

☎ Telephone: (609) 633-3896

🌐 Website: [http://lwd.dol.state.nj.us/lsse/employer/Public\\_Employees\\_OSH.html](http://lwd.dol.state.nj.us/lsse/employer/Public_Employees_OSH.html)

#### NJDHSS, Public Employees Occupational Safety & Health Program

☎ Telephone: (609) 984-1863

🌐 Website: [www.nj.gov/health/eoh/peoshweb](http://www.nj.gov/health/eoh/peoshweb)

#### **New Jersey Department of Labor and Workforce Development, Occupational Safety and Health On-Site Consultation Program**

This program provides free advice to private businesses on improving safety and health in the workplace and complying with OSHA standards.

☎ Telephone: (609) 984-0785

🌐 Website:

[http://lwd.dol.state.nj.us/labor/lsse/employer/Occupational\\_Safety\\_and\\_Health\\_Onsite\\_Consultation\\_Program.html](http://lwd.dol.state.nj.us/labor/lsse/employer/Occupational_Safety_and_Health_Onsite_Consultation_Program.html)

#### **New Jersey State Safety Council**

The New Jersey State Safety Council provides a variety of courses on work-related safety.

There is a charge for the seminars.

☎ Telephone: (908) 272-7712. 🌐 Website: [www.njsafety.org](http://www.njsafety.org)

#### **Internet Resources**

Other useful Internet sites for occupational safety and health information:

🌐 CDC/NIOSH - [www.cdc.gov/niosh](http://www.cdc.gov/niosh)

🌐 Employment Laws Assistance for Workers and Small Businesses - [www.dol.gov/elaws](http://www.dol.gov/elaws)

🌐 National Safety Council - [www.nsc.org](http://www.nsc.org)

🌐 American National Standards Institute (ANSI) - [www.ansi.org](http://www.ansi.org)

- ☞ Product recall information - [www.recalls.gov](http://www.recalls.gov)
- ☞ NJDHSS FACE reports - [www.nj.gov/health/eoh/survweb/face.htm](http://www.nj.gov/health/eoh/survweb/face.htm)
- ☞ CDC/NIOSH FACE - [www.cdc.gov/niosh/face](http://www.cdc.gov/niosh/face)

## **REFERENCES**

American National Standards Institute Z133.1-2000, *American National Standards for Tree Care Operations – Pruning, Trimming, Repairing, Maintaining, and Removing Trees, and Cutting Brush – Safety Requirements*. October, 2000.

NAA Pocket Guide, *Preventing Falls*, National Arborist Association, Inc.  
3 Perimeter Road, Unit 1, Manchester, NJ 03103

## **DISTRIBUTION LIST**

NIOSH

Employer

NJ State Medical Examiner

County Medical Examiner

Local Health Officer

USDOL-OSHA New Jersey Area Offices (Avenel, Hasbrouck Heights, Parsippany, and Marlton)

NJDLWD Office of Public Employees Safety

NJDLWD Occupational Safety and Health On-Site Consultation Program

NJDHSS Public Employees Occupational Safety & Health Program

NJDHSS Occupational Health Service Internet Site

NJDHSS Census of Fatal Occupational Injuries (CFOI) Project

**Fatality Assessment and Control Evaluation (FACE) Project**  
**Investigation # 05-NJ-081**

Staff members of the New Jersey Department of Health and Senior Services, Occupational Health Service, perform FACE investigations when there is a report of a targeted work-related fatal injury. The goal of FACE is to prevent fatal work injuries by studying the work environment, the worker, the task and tools the worker was using, the energy exchange resulting in the fatal injury, and the role of management in controlling how these factors interact. FACE gathers information from multiple sources that may include interviews of employers, workers, and other investigators; examination of the fatality site and related equipment; and reviewing OSHA, police, and medical examiner reports, employer safety procedures, and training plans. The FACE program does not determine fault or place blame on employers or individual workers. Findings are summarized in narrative investigation reports that include recommendations for preventing similar events. All names and other identifiers are removed from FACE reports and other data to protect the confidentiality of those who participate in the program.

Please visit the NJ FACE website at [www.nj.gov/health/eoh/survweb/face.htm](http://www.nj.gov/health/eoh/survweb/face.htm) or the CDC/NIOSH FACE website at [www.cdc.gov/niosh/face](http://www.cdc.gov/niosh/face) for more information.

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