

A Review of Logging Fatalities Investigated
by the Occupational Safety and Health
Administration in FY 1996 and FY 1997

Part 2 of 2

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FY 1996 and FY 1997

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Part 2 of 2

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REPORT EVALUATION FORM

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Background. Section 8 of the Occupational Safety and Health Act (the Act) requires employers to maintain records of work-related deaths and gives the Secretary of Labor authority to regulate reporting. In 29 CFR (Code of Federal Regulation), Part 1904.8, the Occupational Safety and Health Administration (OSHA) provides specific instructions governing when and where reports shall be made.¹ This regulation provides that within eight (8) hours after the death of an employee from a work-related incident, the employer of the affected employee shall orally report the fatality to the nearest OSHA Area Office. Each report shall relate the establishment name, location of the incident, time of the incident, number of fatalities and a brief description of the incident.

I. INTRODUCTION ❖ ❖

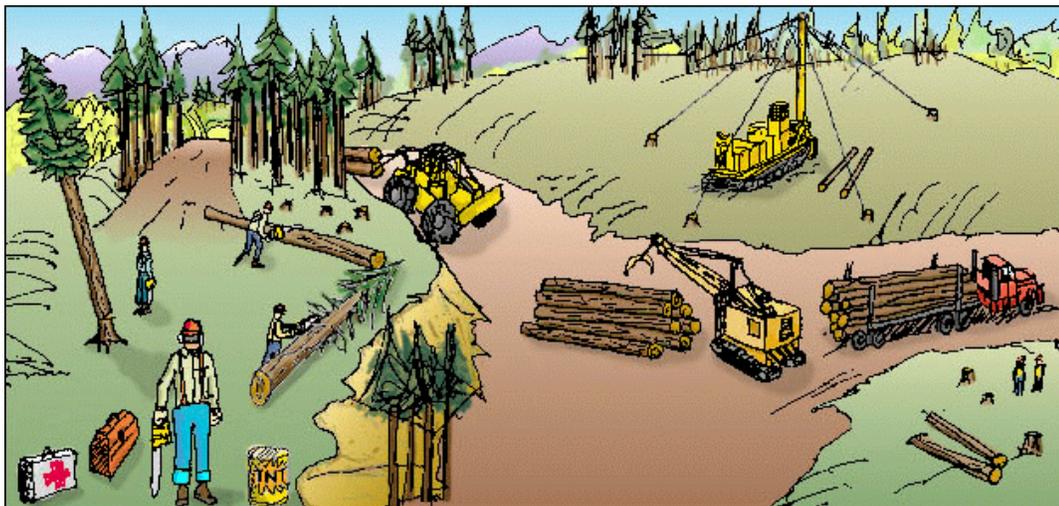
This report is a review of information from the files of logging fatalities investigated by the Occupational Safety and Health Administration (OSHA) in FY 1996 and FY 1997 in facilities classified as Standard Industrial Classification (SIC) 2411. This review focuses on the circumstances of each fatal incident investigated, e.g., the victim's occupation at the time of death, the victim's work location when the fatal injury occurred, the type of accident that caused the fatal injury, the employee's activity at the time of death, the type of incident that resulted in death, etc.

The purpose of this report is to provide some useful information on the results of OSHA activities. This is a reference document. National and Regional personnel may find the information presented here useful in tracking logging industry changes and reviewing resource allocations.

¹ 29 CFR Part 1904.8 as revised April 1, 1994.

This Logging Report (Part 2), is a companion report to Part 1, published separately. The Part 1 report focuses on the objective facts of the fatalities investigated in FY 1996 and FY 1997 (e.g., the date and time of the fatal incidents, the ages of the victims, the geographical location of the fatal incidents, etc.). Part 2 addresses the more subjective and circumstantial information about the fatalities (e.g., the occupations of the victims, the work locations of the victims at the time of death, the type of accidents that caused the victims fatal injuries, etc.). These reports (Parts 1 and 2) are independent and represent different facts about the fatal logging incidents investigated by OSHA in FY 1996 and FY 1997. The information in these two reports cannot be aligned or compared.

Of the 107 logging fatality investigations covered in this report, 51 of the investigations were conducted by states operating comprehensive OSHA-approved safety and health programs, and 56 were conducted by OSHA in states under Federal jurisdiction. Throughout this report, the acronym OSHA is used to collectively refer to activities of the 21 State Plan States with comprehensive State Plans and the activities of OSHA in 29 Federal jurisdiction states.



A logging operation.

Photo credit: OSHA SLC Lab

II. HIGHLIGHTS ❖❖

This section highlights the results of the review of 107 case files of logging fatalities investigated by OSHA in FY 1996 and FY 1997. The complete review is provided in section VI, Logging Report, pages 12-65, and the Appendix. The summary statements that follow reflect the results of the review of ten (10) groups of data or information from these files: (1) the occupation of the victims fatally injured, (2) the location of the victims fatally injured, (3) the type of accidents that resulted in the victims death, (4) the employees' activity at time of the fatal injury, (5) the type of incident that resulted in the victims' death, (6) the factors that may have contributed to the victims death, (7) the source of the victims' fatal injury, (8) the action that resulted in the victims death, (9) the victims' work pattern at the time of the fatal injury, and (10) the specific standards' violations cited by OSHA during its investigation of the fatal incidents.

- A. From FY 1983 - FY 1997, OSHA conducted 18,038 enforcement inspections in logging facilities classified as SIC 2411, 86% were planned inspections and 5 percent were in response to fatal incidents. In FY 1996 and FY 1997, OSHA conducted 1,375 enforcement inspections in logging facilities, 75% were planned inspections and 9 percent were in response to fatal incidents. The level of inspection activity in FY 1996 and FY 1997 represented a decline (52% and 67%, respectively), over FY 1990. See pages 12-13.

- B. Of the 107 logging fatalities investigated by OSHA in FY 1996 and FY 1997, where the occupation of the victims could be determined, 35% of the victims were fellers or fallers of trees, 34% were machine/equipment operators and 21% were limbers/buckers. Of the 36 machine/equipment operators, 36% were operators of skidder machines, and 22% were operators of log trucks. See pages 13-16.

- C. Of the 107 logging fatalities investigated by OSHA in FY 1996 and FY 1997, where the location of the victims at the time of death could be determined, 37% of the victims were working in areas where trees were being cut and felled, and 20% were in areas where felled trees were being limbed or bucked. See pages 16-18.

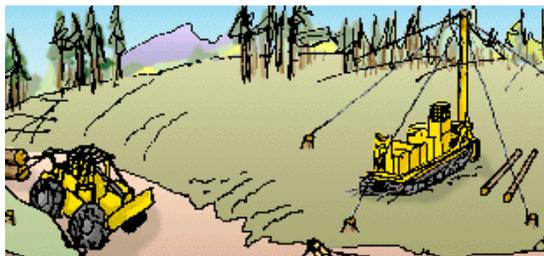
- D. Of the 107 logging fatalities investigated by OSHA in FY 1996 and FY 1997, where the type of accident that caused the victims' fatal injuries could be determined, 77% of the victims were fatally injured when 'struck by' objects. Of the 82 victims struck by objects, 78% were struck by trees or tree parts and 12% were struck by logs. Of the 64 victims struck by trees or tree parts, 64% were struck by falling trees and 15% were struck by lodged trees that dislodged. Of the 41 falling trees that caused fatal injuries, 39% were danger trees. See pages 18-22.

- E. Of the 107 logging fatalities investigated by OSHA in FY 1996 and FY 1997, where the victims' activity at the time of death could be determined, 32% of the victims were felling trees when fatally injured, and 23% were operating machines or equipment. See pages 22-23.

- F. Of the 107 logging fatalities investigated by OSHA in FY 1996 and FY 1997, where the type of fatal incident could be determined, 92% of the fatal incidents resulted from a failure of the victim, other employees or the employer to follow designated safety procedures. See pages 24-25.

- G. Of the 107 logging fatalities investigated by OSHA in FY 1996 and FY 1997, where a specific factor could be determined as directly relating to the cause of the fatal incident, the human factor was determined to relate to 92% of the 107 fatalities. See pages 25-26.

- H. Of the 107 logging fatalities investigated by OSHA in FY 1996 and FY 1997, where the victims' source of injury could be determined, 58% of the victims were fatally injured by a tree and 25% were fatally injured by a machine or equipment. See pages 26-27.
- I. Of the 107 logging fatalities investigated by OSHA in FY 1996 and FY 1997, where the source of the action that fatally injured the victims could be determined, 73% of the victims were fatally injured by their own actions. See pages 28-29.
- J. Of the 107 logging fatalities investigated by OSHA in FY 1996 and FY 1997, where the work pattern of the victims could be determined, 66% of the victims were working alone at the time of death. See pages 29-30.
- K. Of the 107 logging fatalities investigated by OSHA in FY 1996 and FY 1997, 75% of the investigations resulted in citations for violations of Federal or state standards. Of the 80 investigations that resulted in citations, 75% included violations related to the fatal incident. See pages 30-33
- L. Of the 47 investigations where violations of Federal standards were cited, 75% of the safety infractions were for violations of the Federal logging operations standard. Of the eight (8) Federal standards cited during the 47 Federal investigations, the most frequently violated sub part was 1910.266(i), logging operations training. See pages 33-35.



A yarding operation. Photo credit: OSHA SLC Lab

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III. OBSERVATIONS ❖ ❖

- A. In CY 1996 and CY 1997, logging (SIC 2411) was the second most dangerous and the most dangerous occupation in the United States based on rates published by the Bureau of Labor Statistics in the Census of Fatal Occupational Injuries (CFOI). Over a similar period of time, FY 1996 and FY 1997, OSHA conducted 1,038 programmed inspections in logging facilities, a decrease of 52% in FY 1996 and 67% in FY 1997 over FY 1990. See pages 12-13.

Observation. OSHA's enforcement inspection intervention in the logging industry has not kept pace with the escalating safety and health problems. Could an increase in OSHA enforcement interventions reduce the incidence of fatal logging injuries?

- B. Of the 107 OSHA-investigated logging fatalities in FY 1996 and FY 1997, 92% resulted when the victim, other employees or the employer failed to followed designated safety procedures. See pages 24-25.

Observation. Most logging fatalities investigated by OSHA in FY 1996 and FY 1997, could have been prevented. Could an increased presence of OSHA in the industry change employers' commitment to safe practices?

- C. The most frequently cited Federal standard in FY 1996 and FY 1997 was logging operations training. This involved 23 of the 47 Federal investigations where a violation of the training standard was cited. See pages 34-35.

Observation. Half of the logging fatalities investigated by Federal OSHA identified some aspect of training as a major causal factor in the accident. Could an increase of training in the logging industry by OSHA reduce the incidence of fatal injuries?

IV. DATA ISSUES ❖❖

- A. This report reflects logging fatalities investigated by the Occupational Safety and Health Administration (OSHA) and states administering federally approved safety and health programs in FY 1996 and FY 1997. Of the 50 states, 21 are currently operating under approved plans, the remaining 29 states are under Federal (OSHA) jurisdiction. Throughout this review, the acronym OSHA is used to collectively refer to Federal OSHA activities and State OSHA activities.
- B. The scope of the material reviewed for this report is logging fatalities investigated by OSHA in FY 1996 and FY 1997 in facilities classified as Standard Industrial Classification (SIC) 2411.
- C. Only logging fatality case files available in OSHA's Integrated Management Information System (IMIS) or at OSHA's web site were reviewed for this report. Fatalities investigated but not reported to the IMIS are not reflected here. In reviewing material for this report, there was suggestion that some states may be investigating logging fatalities but not reporting this information to the IMIS. There was also suggestion that some states may be inappropriately defining employment situations that are resulting in fatal logging incidents not being investigated that should have been investigated.
- D. Information from 107 fatality case files comprises this report. Ten (10) case files were eliminated from this review because they were incomplete, represented fatalities that occurred away from the logging site (e.g., on the highway en route to or from the logging site), were sole proprietorships, or the facilities were misclassified as SIC 2411 (logging). Three (3) of the 10 eliminated cases were in FY 1996 and seven (7) were in FY 1997.

- E. Only citations of Federal standards are reviewed in this report. States administering federally approved safety and health programs are required to adopt standards that are at least as effective as Federal OSHA standards. More than half of the 21 State Plan states have adopted standards with more stringent requirements. Although work is under way, there are currently no mechanisms for aligning the state standards and the Federal standards. Therefore, only citations of Federal standards are reviewed.

- F. A significant number of the 107 case files were missing required pieces of information about the fatal incidents, e.g., what the victim was doing when he was fatally injured, the work location of the victim when the fatal action occurred, the factors that caused the victim's death, etc. No attempts were made to obtain these missing pieces of information. However, some assumptions were made based on available information as to the sequence of actions of a particular case. For example, if a case file indicated that the victim was fatally struck by a felled tree, but did not describe how this came about, the assumption was that because the victim was working alone felling trees, he felled the tree that struck him.

- G. No effort was made to validate the accuracy of the translation of information used from OSHA's IMIS to its web site, nor to establish the accuracy of the data that resides in the IMIS. However, some clarifications of information were obtained from a number of states.

- H. All numbers represent information available at the time. Where numbers are rounded, the calculation results may equal more or less than 100%.

V. DATA REVIEW ❖❖

- A. One hundred and seven (107) logging fatalities investigated by OSHA in FY 1996 and FY 1997, were reviewed. This represents 37% of the 292 logging fatalities reported by the Bureau of Labor Statistics for CY 1996 and CY 1997, and 42% of the 255 logging fatalities reported by the American Pulpwood Association (APA) for the same period of time.²
- B. Sixty-three (63) of the 107 fatalities investigated by OSHA occurred in FY 1996, and 44, in FY 1997. Of the 107 fatalities, 56 were in states under Federal OSHA jurisdiction, and 51 were in states (State Plan states) operating federally approved safety and health programs. Twenty-four (24 or 48%) of the 50 states reported no logging fatality investigations in FY 1996 or FY 1997, although all states had some level of logging activity over this same period, i.e., the presence of logging establishments. Twelve (12 or 41%) of the 29 Federal states and 12 or 57% of the 21 State Plan states, reported no logging fatality investigations in either year.
- C. This review examines the various elements of each of the 107 fatal logging incidents -- the occupation of the victim at the time of death, the work location of the victim at the time of death, the type of accident that resulted in death, the activity of the employee at the time of death, the type of incident that resulted in death and factors determined to be directly related to the cause of death. The victim's work pattern, the source of the fatal action that caused his death and the source of his injury are also reviewed, as well as, information on citations for violations of Federal standards.

² Bureau of Labor Statistics' Census Of Fatal Occupational Injuries (CFOI), CY 1996 and CY 1997. American Pulpwood Association (APA) Summary Report, National Logging and Wood Fiber Transportation Fatalities for 1996 and 1997.

- D. For each of the 107 fatality case files, 10 different pieces of information were identified for review. In order to analyze, compare and represent this information, standard definitions were developed and applied. See Appendix E. The results are represented in graphic, table and text formats and broken out nationally, regionally, by state and year.



A tree felling operation.

Photo credit: OSHA SLC Lab

VI. LOGGING REPORT ❖❖

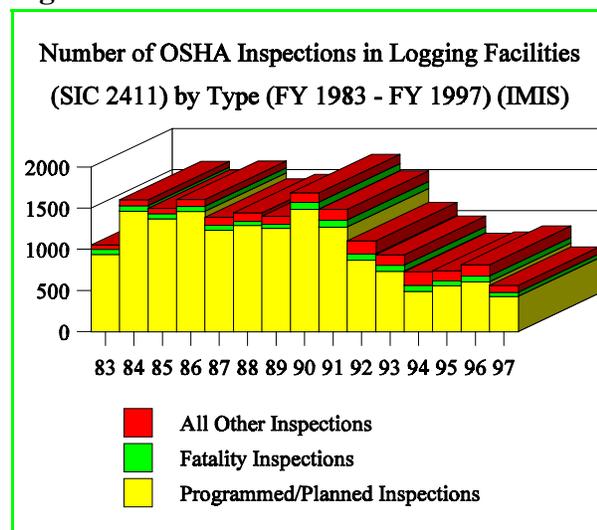
Logging Fatalities and OSHA Intervention ❖❖

- A. Intervention. OSHA uses a number of tools to impact safety and health conditions in America's workplaces. These tools include the promulgation of workplace safety and health standards, the conduct of onsite compliance inspections, the provision of free onsite and offsite assistance to help employers identify and correct workplace hazards, the delivery of training in accident prevention, and the distribution of safety and health educational and other informational materials, as well as, encouraging employers to develop comprehensive safety and health programs which include documented self-audits in the field.

Section 8 of the Occupational Safety and Health (OSH) Act requires employers to maintain records of work-related deaths, and 29 CFR (Code of Federal Regulations), Part 1904.8, provides specific instructions governing when and where information on these fatalities is to be reported. Most reports of fatal incidents are investigated by OSHA through an onsite inspection.

1. Over a 15-year period (FY 1983 - FY 1997), OSHA conducted 18,038 enforcement inspections in logging facilities classified as SIC 2411; eighty-six percent

Figure 1



(86%) were planned inspections. Over this same period of time, the number of OSHA logging inspections also declined, from a high of 1,687 inspections in FY 1990 to a low of 814 in FY 1996 and 561 in FY 1997, the two years covered by this report. The change represents a 52% decline from FY 1990 to FY 1996, and a 67% decline from FY 1990 to FY 1997. See **Figure 1**, page 13, and **Table 1**, page 37.

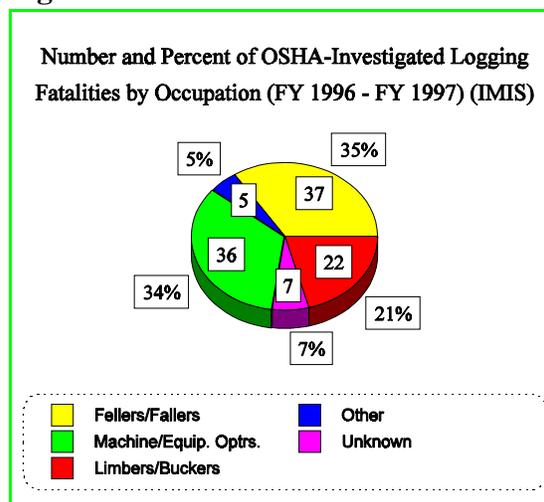
2. Of the 18,038 OSHA inspections in the logging industry from FY 1983 - FY 1997, 5 percent were investigations of fatal logging incidents. Nine percent (9%) of the 1,375 inspections in FY 1996 and FY 1997 were in response to occupational logging fatalities.

Logging Fatalities by Occupation ❖ ❖

B. Occupation. For this review, the victim’s occupation reflects the specific activity the victim was engaged in at the time of the fatal incident. For example, if the victim was cutting down a tree when he was killed, his occupation would be identified as a ‘feller or faller’. See **Appendix E**, page E-1.

1. Of the 107 OSHA-investigated logging fatalities in FY 1996 and FY 1997, where the occupation of the victim could be determined, 37 (35%) of the victims were fellers or fallers of trees, 36 (34%) were machine or equipment operators, 22 (21%) were limbers

Figure 2

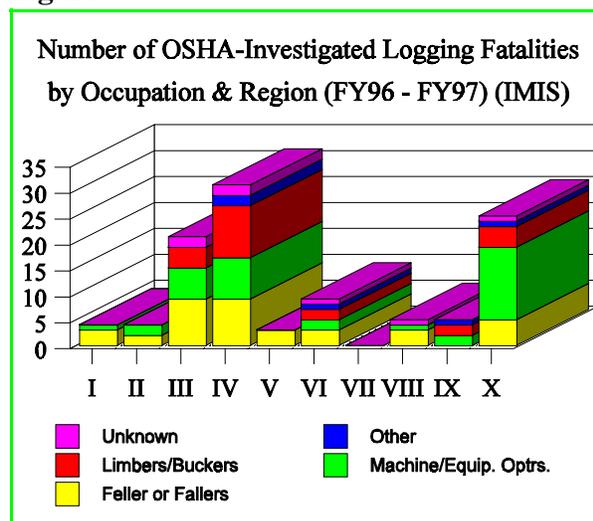


or buckers, and five (5%) were engaged in other occupations. For seven (7) victims (7%), their occupations could not be determined. See **Figures 2**, page 13, **Table 2**, page 38, and **Appendices A-E**.

2. Regions III, IV and X accounted for 72% or 77 of the 107 OSHA-investigated logging fatalities in FY 1996 and FY 1997, 21, 31 and 25 fatalities, respectively.

When looking at the distribution of victims by occupation among these three regions, 43% of the victims in Region III were fellers or fallers, 29% were machine or equipment operators and 19% were limbers or buckers. The occupations of the victims in Region IV were more evenly distributed, 29% were fellers or fallers, 26% were machine or equipment operators, and 32% were limbers or buckers.

Figure 3



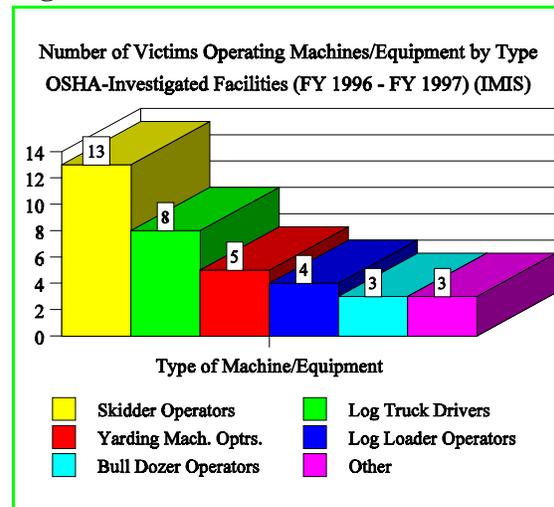
In Region X, 20% were fellers or fallers, 56% of the victims were machine or equipment operators, and 16% were limbers or buckers. See **Figure 3**, page 14, **Table 3**, page 39, and **Appendix I, Table 1**, page I-1.

3. When reviewing information on the 26 states with OSHA-investigated logging fatalities in FY 1996 and/or FY 1997, Virginia, Alabama, and Washington had the highest number of victims who were fellers or fallers, six (6), four (4) and three (3), respectively. Washington, Oregon, Virginia and Alabama had the greatest number of deaths among machine/equipment operators, seven (7), six (6), four (4) and four (4), respectively. Of the twenty-two limber and buckers killed in

FY 1996 and FY 1997, the two states with the highest percent of deaths of all limber and buckers were Alabama (18%), Virginia (14%), and Oregon (14%). See **Appendix I, Table 1**, page I-1.

4. Of the 36 machine/equipment operators, 13 (36%) were operators of skidder machines, eight (8 or 22%) were operators of log trucks, five (5 or 14%) were participating in the operation a yarding machine, four (4 or 11%) were operators of log loaders, three (3 or 8%) were operators of bull dozers, and one each (1 or 3% each) were operating a chip harvester, a chain saw and a de limber. See **Figure 4**, page 15, **Table 3**, page 39, and **Appendices A-E**.

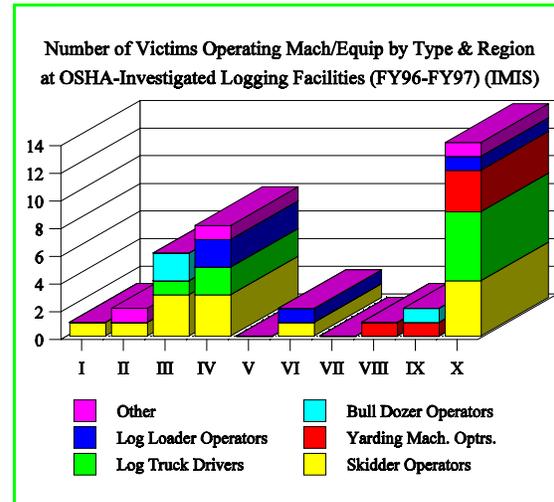
Figure 4



- a. Region X accounted for 39% (14) of the 36 OSHA-investigated logging fatalities where the victim's death was related to the operation of machines or equipment, Region IV accounted for 22% (8) and Region III, 17% (6). Sixty-three percent (63%) of the eight (8) truck drivers killed were in Region X, as were 60% of the five (5) yarding operators, 31% of the 13 skidder operators, and 25% of the four (4) log loader operators. Seventy-seven percent (77%) of the skidder operators died in Regions III, IV and X, 23%, 23% and 31%, respectively. Region III also accounted for 67% of the victims operating bull dozers. See **Figure 5**, page 16, **Table 5**, page 40, and **Appendix I, Table 2**, page I-4

- b. When looking at individual states, Washington, Oregon, Alabama and Virginia had the highest number of deaths related to the operation of machines or equipment, seven (7), six (6), four (4) and four (4), respectively. Virginia, Alabama and Washington alone accounted for 54% of the deaths of skidder operators. Sixty-three percent (63%) of the log truck drivers who died were in Oregon and Washington. See **Appendix I, Table 2**, page I-4.

Figure 5

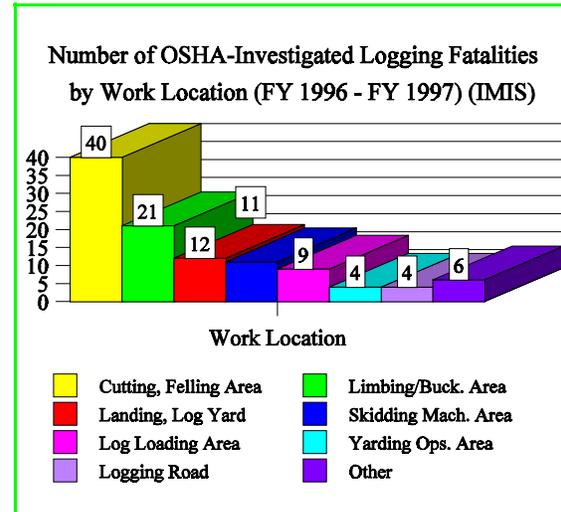


Logging Fatalities by Work Location

- C. Work Location. Getting timber from forest to market involves a number of steps, including, but not limited to, felling the trees, limbing and bucking the trees, and moving the trees and logs from the cutting areas to landing/loading areas. Each of these steps may be completed within the same designated geographical area, but not simultaneously. For this review, the work location of a victim is defined by the primary occupation engaged in by the victim or others in a particular area at the time of the fatal incident. For example, if the feller (the victim) was cutting down a tree when he was killed, his work location is identified as the ‘cutting/felling area’. See **Appendix E**, page E-2.

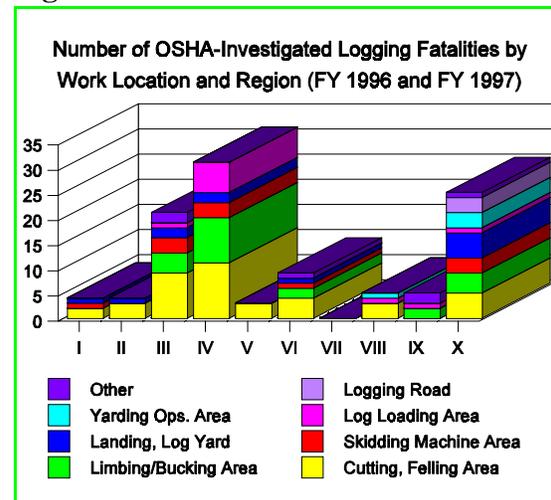
1. Of the 107 OSHA-investigated logging fatalities in FY 1996 and FY 1997, where the work location of the victims at the time of death could be determined, 40 (37%) of the victims were working in areas where trees were being cut and felled. Twenty-one (21 or 20%) of the victims were in areas where felled trees were being limbed, topped or bucked, 12 (11%) were at the landing or log yard, 11 (10%) were in areas where skidders were being operated, nine (9 or 9%) were in log loading areas, four (4 or 4%) were in the yarding operations area, four (4 or 4%) were operating log trucks on logging roads, and six (6 or 6%) were in general logging areas that could not be more specifically identified or in unknown areas. See **Figure 6**, page 17, **Table 6**, page 41, and **Appendices A-E**.

Figure 6



2. Of the 40 victims killed in the cutting/felling area, two Regions, III and IV, accounted for more than half (50% or 20) of those deaths. Region IV also leads all regions in the number of victims killed in the limbing/bucking area, nine (9 or 43%) of the 21 victims. Three (3 or 86%) of the four (4) victims killed on logging roads were in Region X, and all three were in

Figure 7



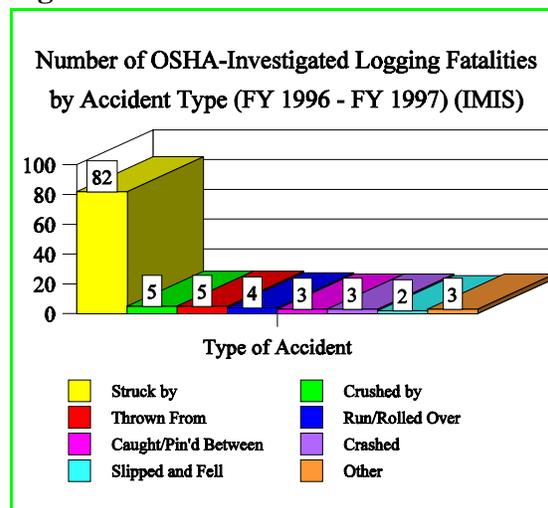
Washington. Virginia lead all states with the highest number of victims killed in the cutting/felling area, six (6) or 15% of all victims in this area, followed by Alabama with five (5) victims (13%). See **Figure 7**, page 17, **Table 7**, page 42, and **Appendix I, Table 3**, page I-7.

Logging Fatalities by Accident Type ❖ ❖

D. Accident Type. For this review, the type of accident reflects the particular action that resulted in the victim’s death, e.g., the victim was ‘struck by’ a tree. When several sequential actions may have contributed to death, the first action in the series is identified as the accident type, e.g., the victim was ‘struck by’ the falling tree and knocked to the ground. The victim was also crushed by the tree when it fell on top of him. The accident type would be listed as ‘struck by’. See **Appendix E**, page E-3.

- Of the 107 OSHA-investigated logging fatalities in FY 1996 and FY 1997, where the type of accident could be determined, 82 or 77% of the victims were fatally injured when ‘struck by’ objects, five (5 or 5%) were ‘crushed by’ objects, five (5 or 5%) were ‘thrown from’ moving machinery, three (3 or 3%) were caught/pinned between two objects, four (4 or 4%) were run or rolled over, three (3 or 3%) were killed when their trucks crashed, two (2 or 2%) slipped

Figure 8

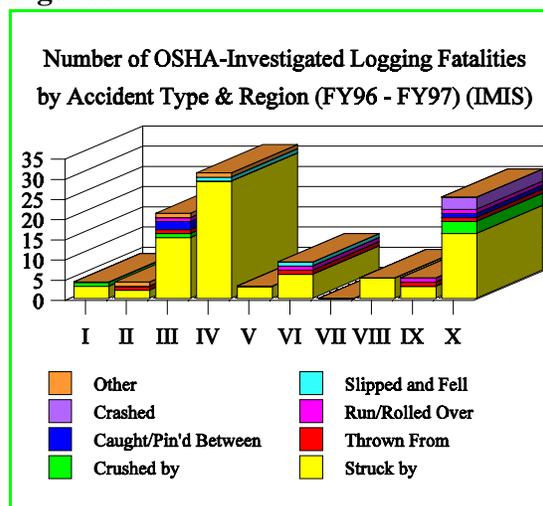


and fell, one (1) each (<1% each) was burned when fuel ignited, cut by a chain saw, or collapsed, sustaining fatal injuries. See **Figure 8**, page 18, **Table 8**, page 43, and **Appendices A-E**.

a. Regions III, IV and X experienced the greatest number of logging fatalities in FY 1996 and FY 1997, 21, 31 and 25, respectively. These three regions accounted for 73% of all victims struck by objects, 80% of all victims crushed by objects, 40% of all victims thrown from machines, 100% of all victims caught and pinned between objects, 50% of all victims run or rolled over by machines, 100% of all victims killed in crashes, and 50% of all victims fatally injured

when they slipped and fell. Region IV had the highest proportion of victims struck by objects, 94% of the 31 deaths in the region. In Region III, 67% of the region's 21 victims were struck by objects, representing 17% of the 82 deaths in this category. Of the 25

Figure 9



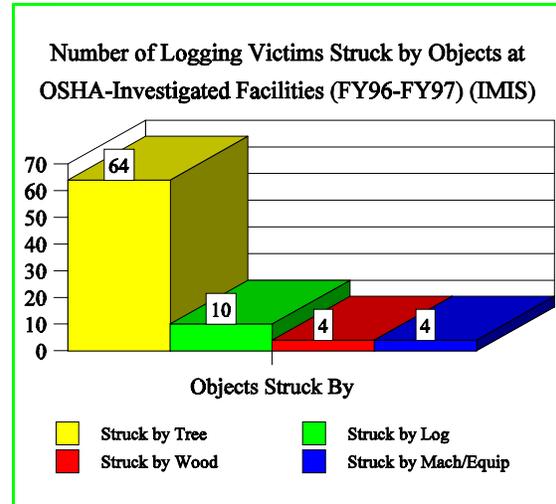
victims in Region X, 36% or 9, were struck by objects. See **Figure 9**, page 19, **Table 9**, page 44, and **Appendix I, Table 4**, page I-10.

b. In 15 (58%) of the 26 states with OSHA-investigated fatalities in FY 1996 and FY 1997, all of the victims died after being struck by an object. These 15 states (New Hampshire, Vermont, Pennsylvania, Alabama, Florida, Georgia, Mississippi, North Carolina, Tennessee, Illinois, Ohio,

Wisconsin, Arkansas, Louisiana, Texas, Montana, Utah and Idaho) represented 46 or 56% of the 82 victims who were fatally injured in this type of accident. Alabama (12), Virginia (8), Mississippi (7) and Oregon (7) had the greatest number of victims struck by objects, representing 34 or 41% of all victims. See **Appendix I, Table 4**, page I-10.

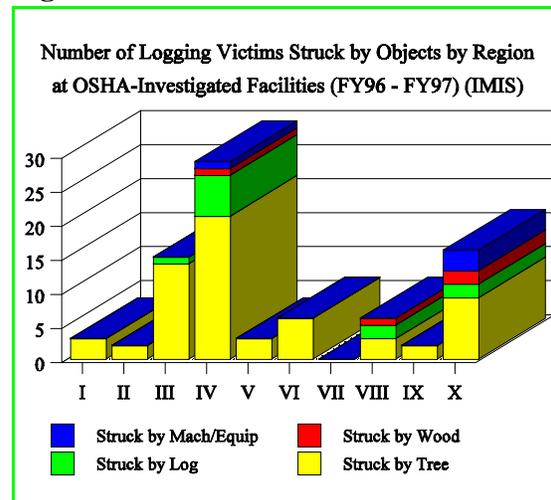
2. Of the 82 victims struck by objects, 64 (78%) were struck by trees or tree parts, 10 (12%) were struck by logs, four (4 or 5%) were struck by logs, four (4 or 5%) were struck by a piece of wood, and four (4 or 5%) were struck by machine/equipment or machine/equipment parts. See **Figure 10**, page 20, **Table 10**, page 45, and **Appendices A-E**.

Figure 10



a. Of the 64 victims struck by trees, 33% (21) were in Region IV, followed by 22% (14) in Region III and 14% (9) in Region X. Of the 10 victims struck by logs, six or 61% were in Regions IV and two (26%) were in Region X. Fifty percent (50%) of the victims struck by a piece of wood (2 of 4), and 75%

Figure 11

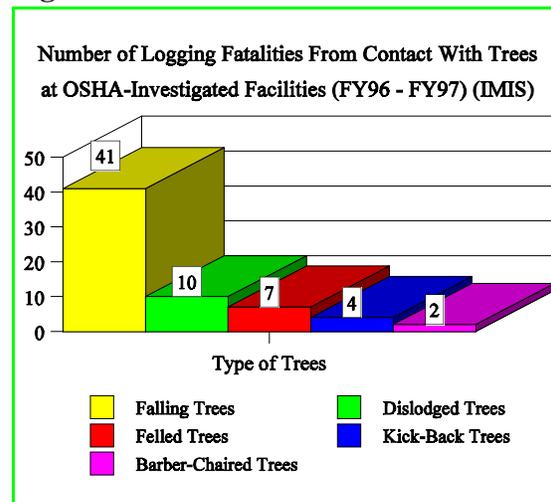


of those struck by machine/equipment or machine/equipment parts (3 of 4) were in Region X. See **Figure 11**, page 20, **Table 11**, page 46, and **Appendix I, Table 5**, page I-13.

b. Alabama and Virginia had the greatest number of victims struck by trees, nine (9) and eight (8), respectively. Victims struck by logs, wood and machine/equipment were more evenly distributed among the states. See **Appendix I, Table 5**, page I-13.

4. Of the 64 victims struck by trees, 41 (64%) of the victims were struck by falling trees, nine (9 or 15%) were struck by lodged trees that dislodged, five (5 or 8%) were struck by cut trees that kicked back, four (4 or 6%) were struck by felled trees being moved, and two (2 or 3%) were struck by trees that barber-chaired. See **Figure 12**, page 21, and **Table 12**, page 47, and **Appendices A-E**.

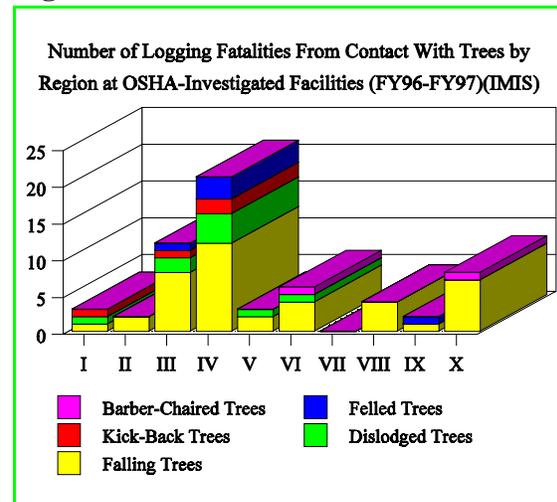
Figure 12



a. Region X had the highest proportion of victims killed by falling trees, seven (7) of eight (8) victims or 88%, followed by Region III with eight (8) of 13 victims and 62%, and Region IV with 12 of 20 victims and 60%. Alabama had the greatest number of victims killed by falling trees (5), followed by Oregon, Virginia and West Virginia, with three (3) each. See **Figure 13**, page 22, **Table 13**, page 48, and **Appendix I, Table 6**, page I-16.

b. Of the 41 falling trees that caused fatal injuries in FY 1996 and FY 1997, 16 (39%) were danger trees, eight (8) each year. Danger trees are dead or live trees that should be removed in order to fell other designated timber safely.

Figure 13



Region IV had the greatest number of deaths by danger trees in FY 1996 and FY 1997, six (6), followed by Region III with three (3), and Regions II, V and X with two (2) each. See **Table 13**, page 48.

Logging Fatalities by Employee Activity

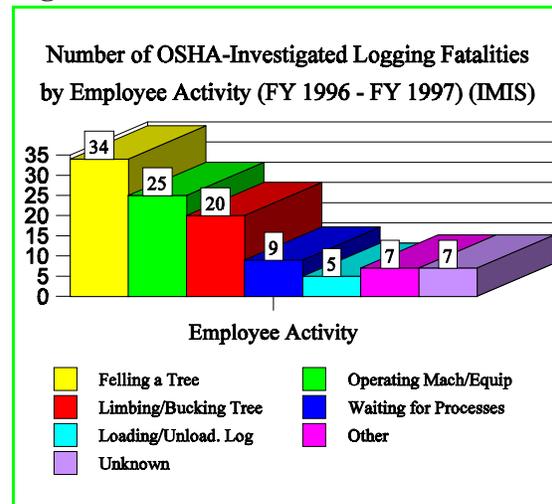
E. **Employee Activity.** For this review, what the employee or victim was doing at the time of his fatal injury is related as ‘employee activity’. In those cases where the employee’s activity was unclear from information in the case file, the determination was based on inferences or suggestions. For example, if the victim was found fatally injured under the tracks of a skidder near limbed, topped or bucked trees, his activity at the time of death might be identified as ‘skidding logs’. See **Appendix E**, page E-3.

1. Of the 107 OSHA-investigated logging fatalities in FY 1996 and FY 1997, where the victim’s activity at the time of death could be determined, 34 (32%) of the victims were felling trees when fatally injured, 25 (23%) were operating machines

or equipment, 20 (19%) were limbing or bucking felled trees, nine (9 or 8%) were killed while waiting for other processes to be completed, five (5 or 5%) were loading or unloading logs, and seven (7 or 7%) were engaged in activities classified as other. The activity of seven (7 or 7%) of the victims could not be determined.

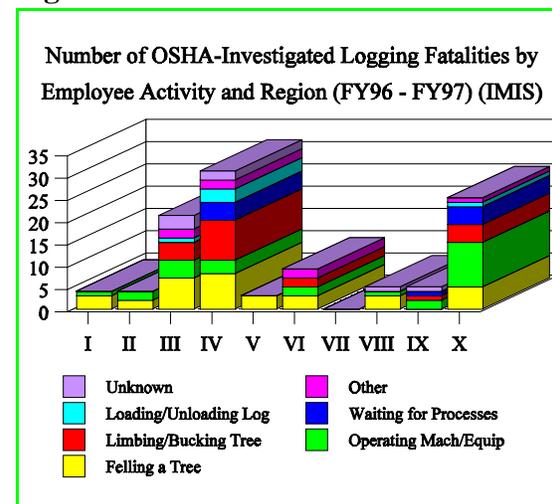
See **Figure 14**, page 23, **Table 14**, page 49, and **Appendices A-E**.

Figure 14



2. When looking at the three regions with the greatest number of logging fatalities in FY 1996 and FY 1997, Region III had the highest proportion of victims killed while felling trees, seven (7) of 21 victims or 33%, followed by Region IV with eight (8) of 31 victims or 26%, and Region X with five (5) of 25 victims or 20%. See **Figure 15**, page 243 **Table 15**, page 50, and **Appendix I**, **Table 7**, page I-19.

Figure 15



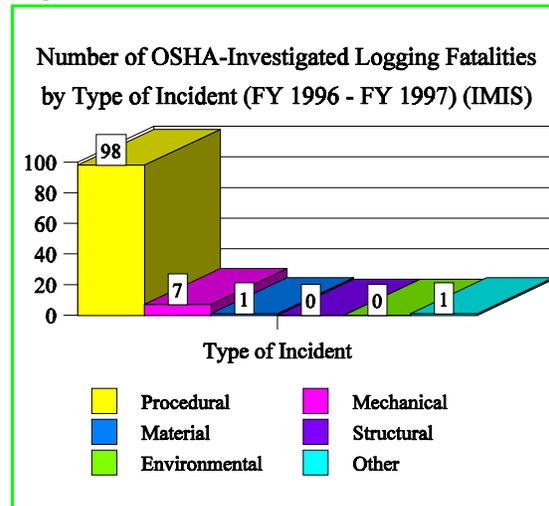
3. Virginia had the greatest number of victims killed while felling trees (6), followed by Alabama and Washington with four (4) and three (3), respectively. See **Appendix I**, **Table 7**, page I-19.

F. Incident Type. For this review, the type of incident represents an assessment or analysis of the events leading up to the fatal event. The type of incident for each fatal event is categorized as procedural, mechanical, material, structural, environmental or other. See **Appendix E**, page E-3.

1. Of the 107 OSHA-investigated logging fatalities in FY 1996 and FY 1997, where the type of fatal incident could be determined, 98 or 92% of the fatal incidents resulted from a failure of the victim, other employees or the employer to follow designated safety procedures. Seven (7) fatal incidents, 7% of all fatal incidents, resulted from mechanical failure, one (1) fatal incident each, slightly less than 1 percent of all fatal incidents each,

resulted when a product or material failed to perform as specified or resulted from other causes. There were no fatal incidents related to structural failures or environmental conditions. See **Figure 16**, page 24, **Table 16**, page 51, and **Appendices A-E**.

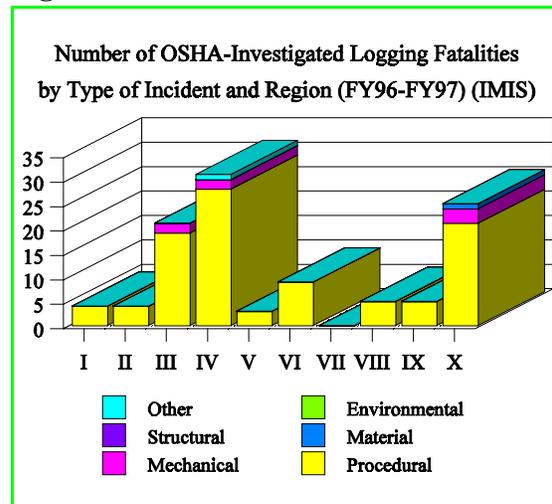
Figure 16



2. Of the 98 fatal incidents resulting from the failure of the victim, other employees or the employer to follow designated procedures, 28 or 29% were in Region IV, 21 or 21% were in Region X and 19 or 19% were in Region III. See **Figure 17**, page 25, **Table 17**, page 52, and **Appendix I, Table 8**, page I-22.

3. Virginia had the greatest number of deaths due to procedural failures, 12, followed by Alabama (10), Oregon (9), Washington (8), Mississippi (7), and West Virginia and California (5 each). See **Appendix I, Table 8**, page I-22.

Figure 17

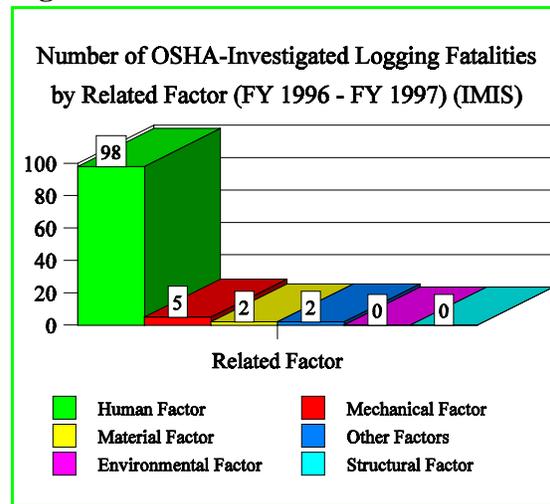


Logging Fatalities by Related Factor ❖ ❖

- G. Related Factor. For this review, a factor related to the incident is an element of the chain of events leading up to the accident that can be directly associated with the cause of the fatal incident. See **Appendix E**, page E-5.

1. Of the 107 OSHA-investigated logging fatalities in FY 1996 and FY 1997, where a specific factor could be determined as directly relating to the cause of the fatal incident, the human factor was determined to relate to 98 of the 107 cases (92%). Mechanical failure was a related factor in five (5) of the 107 cases (5%), and material failure was a factor in two (2) of the 107 cases (2%). Two (2) of the 107

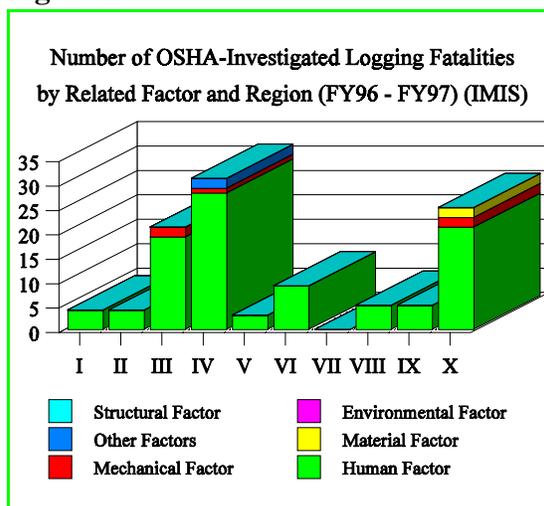
Figure 18



fatalities were related to other causes. There were no causes related to structural failures or environmental conditions. See **Figure 18**, page 25, **Table 18**, page 53, and **Appendices A-E**.

2. The human factor was determined to relate to all of the fatal incidents in FY 1996 and FY 1997, in Regions I, II, V, VI, VIII and IX. For Regions III, IV and X, the human factor was determined to relate to 90%, 90% and 84%, respectively, of the fatal incidents in each region. See **Figure 19**, page 26, **Table 19**, page 55, and **Appendix I, Table 9**, page I-25.

Figure 19



3. Except for one (1) fatal incident in Virginia, one in West Virginia, two in Alabama and two in Washington, all fatal logging injuries investigated by OSHA in FY 1996 and FY 1997, in all states, were determined to be related to the human factor. See **Appendix I, Table 9**, page I-25.

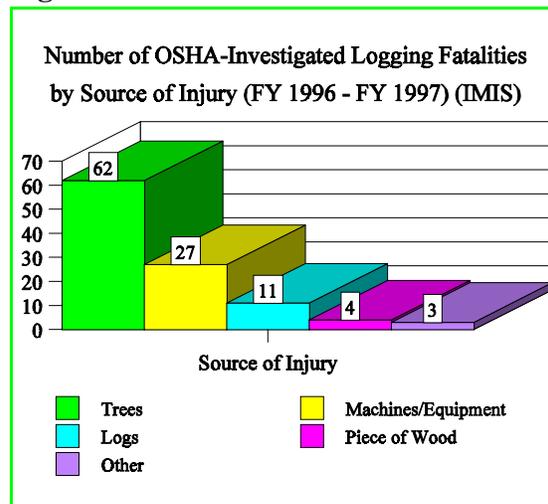
Logging Fatalities by Source of Injury ❖❖

H. Source of Injury. For this review, the source of injury is related as the specific object or material that the victim came in contact with that resulted in his death. For example, if the victim was struck by a tree and died of his injuries, the source of injury would be a 'tree'.

1. Of the 107 OSHA-investigated logging fatalities in FY 1996 and FY 1997, where the source of injury could be determined, 62 or 58% of the victims were fatally injured by a tree, 27 or 25% were injured by machines or equipment, 11 or 10% were injured by a log, four (4) or 4% were injured by a piece of wood, and three (3 or 3%) were injured by other sources. See

Figure 20, page 27, **Table 20**, page 56, and **Appendices A-E**.

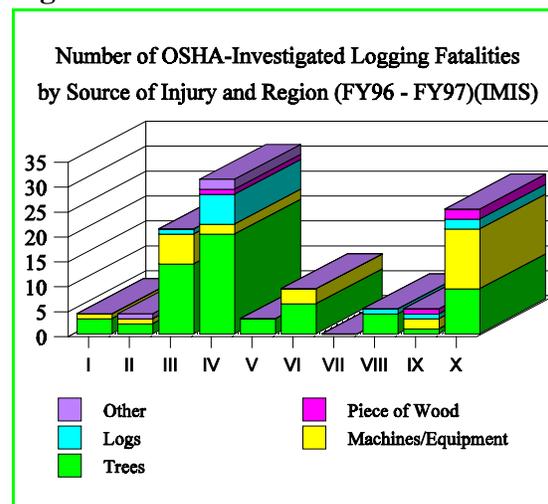
Figure 20



2. For the three regions with the greatest number of fatalities in FY 1996 and FY 1997, Regions III, IV and X also had the greatest

number of victims fatally injured by trees (14, 20, and 9, respectively). See **Figure 21**, page 27, **Table 21**, page 57, and **Appendix I, Table 10**, page I-28.

Figure 21

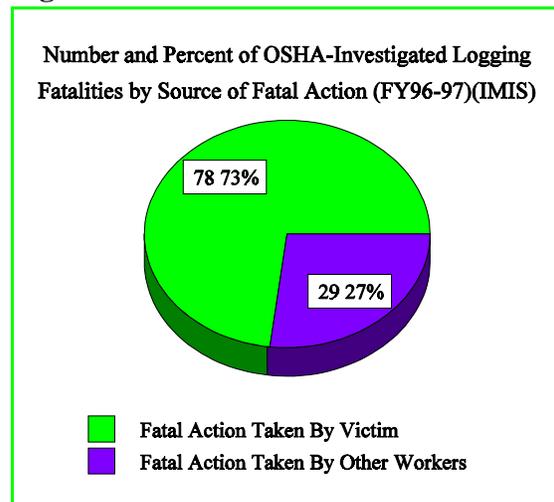


3. Alabama (9), Virginia (8), West Virginia (4), Mississippi (4) and North Carolina (4) had the greatest number of victims fatally injured by trees. See **Appendix I, Table 10**, page I-28.

I. Source of Fatal Action. For this review, the source of the fatal action distinguishes those fatal events that resulted from actions taken by the victims, from those fatal events that resulted from actions taken by other workers.

1. Of the 107 OSHA-investigated logging fatalities in FY 1996 and FY 1997, where the source of the action that fatally injured the victim could be determined, 78 or 73% of the victims were fatally injured by their own actions, compared to 29 or 27% that were fatally injured by actions taken by other workers. In FY 1996, the numbers were 42 and 21, respectively, of 63 cases, compared to 36 and eight (8), respectively, of 44 cases in FY 1997. See **Figure 22**, page 28, **Table 22**, page 58, and **Appendices A-E**.

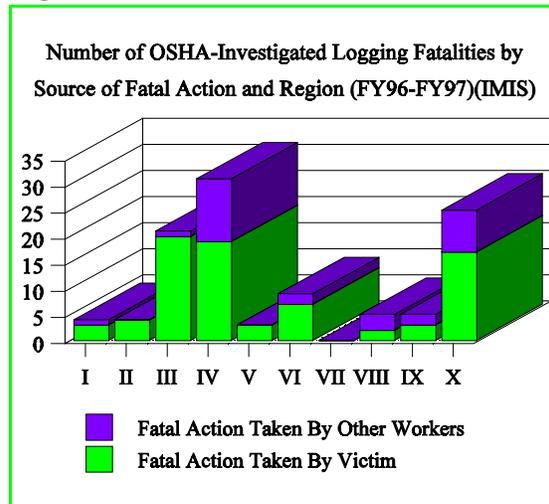
Figure 22



2. In Region IV, where the greatest number of OSHA-investigated fatalities occurred in FY 1996 and FY 1997 (31 of the 107 fatalities), 61% of the victims were killed by their own actions, compared to 39% who were killed by the actions of others. In Region X, where 25 victims died in FY 1996 and FY 1997, 68% of the victims took the fatal action. In Region III, where 21 of the 107 fatalities occurred, 95% of the victims were killed by their own actions. See **Figure 23**, page 29, **Table 23**, page 58, and **Appendix I, Table 11**, page I-31.

3. In Maine, New Hampshire, New York, Pennsylvania, Virginia, South Carolina, Illinois, Ohio, Wisconsin, and Texas, all of the victims were killed by their own actions. See **Appendix I, Table 11**, page I-31.

Figure 23

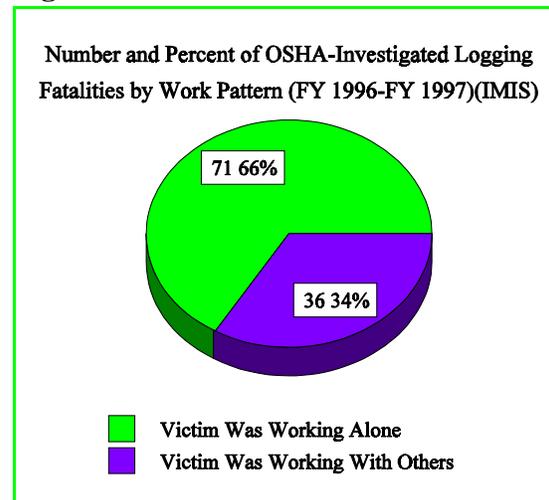


Logging Fatalities by Work Pattern ❖ ❖

- J. Work Pattern. For this review, work pattern is defined by whether the victim was working alone (i.e., was not within sight or hearing of others) or was working with others (i.e., was within the sight or hearing of others) when fatally injured.

1. Of the 107 OSHA-investigated logging fatalities in FY 1996 and FY 1997, where the work pattern could be determined, 71 or 66% of the victims were working alone at the time of death, compared to 36 or 34% who were working within sight and/or hearing of other workers. In FY 1996, the numbers were 36 and 27, respectively, of 63 cases, compared to 35 and nine (9), respectively, of 44

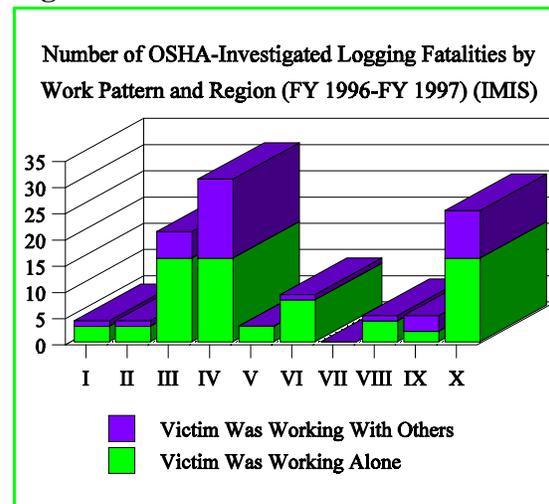
Figure 24



cases in FY 1997. See **Figure 24**, page 29, **Table 24**, page 59, and **Appendices A-E**.

2. In those regions with the greatest number OSHA-reported fatality investigations in FY 1996 and FY 1997 (Regions III, IV and X), more than half of the victims were working alone (76%, 52% and 64%, respectively) when fatally injured. See **Figure 25**, page 30, **Table 25**, page 59, and **Appendix I, Table 12**, page I-34.

Figure 25



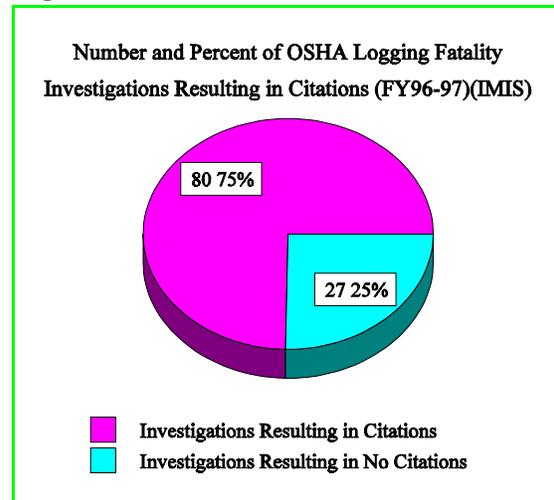
3. In Virginia, 85% of the 13 victims were working alone, compared to 42% of the 12 victims in Alabama. Of the 10 victims in Oregon and 11 victims in Washington, 50% and 72%, respectively, were working alone when they were fatally injured. See **Appendix I, Table 12**, page I-34.

Logging Fatalities by Standards Violations ❖❖

K. **Standards Violations.** OSHA has promulgated a number of standards applicable to logging operations, including those relating to the logging of pulpwood, the control of hazardous energy (lockout/tagout), the communication of information concerning the hazards of chemicals, and the health effects of exposure to occupational noise. In FY 1994, the pulpwood standard was revised to broaden its application to all logging operations regardless of the end product. See **Appendix J**.

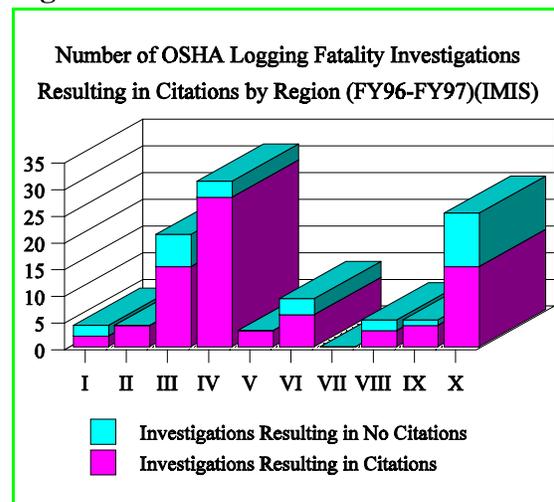
1. Of the 107 logging fatalities investigated by OSHA in FY 1996 and FY 1997, 80 or 75% resulted in citations for violations of Federal or state standards, 48 of 63 in FY 1996 and 32 of 44 in FY 1997. Of the 80 investigations with citations, 46 were conducted by Federal OSHA and represented 82% of all Federal investigations (56), and 34 were conducted by State OSHA and represented 67% of all state investigations (51). See **Figure 26**, page 31, and **Table 26**, page 60.

Figure 26



a. All investigations in Regions II (4) and V (3) resulted in citations for violations of Federal standards. Of the three regions with the greatest number of investigations in FY 1996 and FY 1997 (Regions III, IV and X), Region IV had the highest percent of investigations resulting in the identification of violations (90% or 28 of 31 investigations). See **Figures 27**, page 31, and **Table 26**, page 60.

Figure 27



b. When looking at individual states, violations of standards were found during all investigations in Maine, New York, Alabama, Florida, Georgia, Mississippi, Tennessee, Illinois, Ohio, Wisconsin, Louisiana and Montana. These 12 states represented 48% (38) of the 80 investigations in FY 1996 and FY 1997, resulting in citations. Oregon, with 10 investigations, had the greatest number of investigations resulting in no citations, six (6), and the highest proportion of investigations resulting in no citations, 60%. See **Table 26**, page 60.

2. Of the 80 investigations that resulted in citations in FY 1996 and FY 1997, 60 of those investigations (75%) resulted in citations for violations of standards related to the fatal incident, 39 of 48 in FY 1996 and 21 of 32 in FY 1997. See **Figure 28**, page 32, and **Appendix I, Table 13**, page I-37.

a. All investigations that resulted in citations in Regions I, II and VIII, included violations of standards related to the fatal incidents. See **Figure 29**, page 32, and **Appendix I, Table 13**, page I-37.

Figure 28

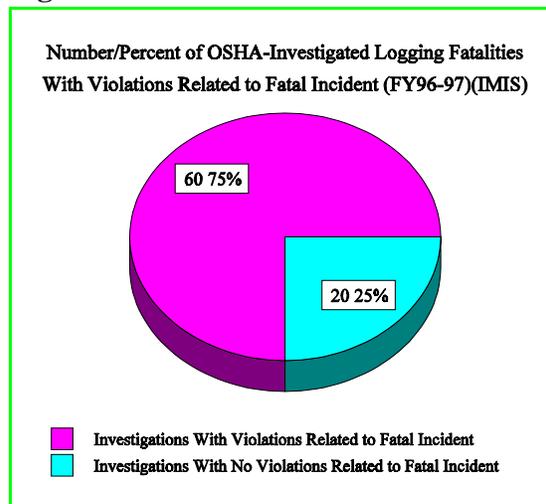
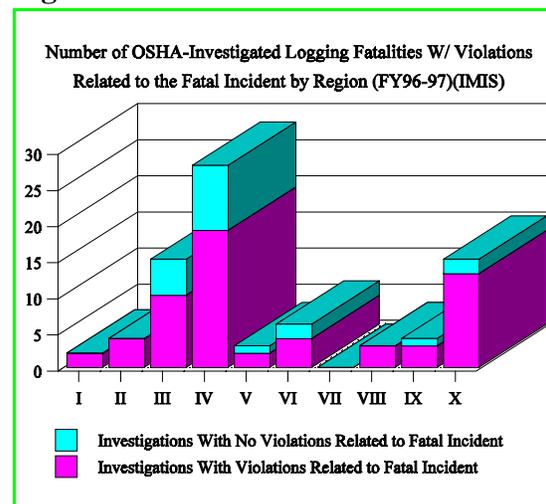


Figure 29



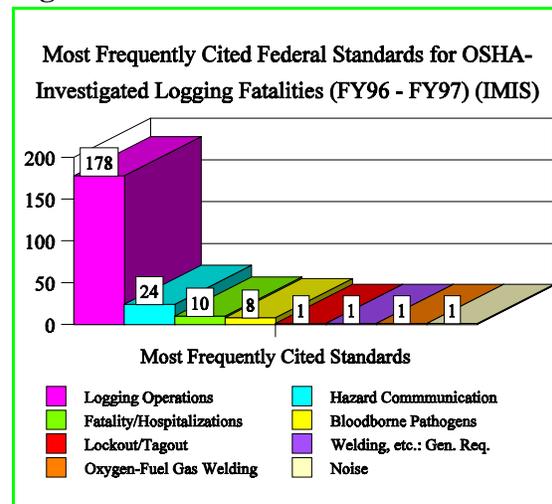
b. For 15 States (Maine, Vermont, New York, Pennsylvania, West Virginia, Florida, Georgia, North Carolina, Tennessee, Illinois, Wisconsin, Louisiana, Montana, Idaho and Oregon), all investigations that resulted in citations, included violations of standards related to the fatal incidents.

See **Appendix I, Table 13**, page I-37.

3. Of the 47 logging fatalities investigated in FY 1996 and FY 1997, where violations of Federal standards were cited, 178 (79%) of the 224 identified safety infractions were for violations of the Federal logging operations standard, 24 (11%) were for violations of the

hazard communication standard, 10 (4%) were for violations of the standard requiring the reporting of fatalities and multiple hospitalizations, and eight (8 or 4%) were for violations of the bloodborne pathogen standard. See **Figure 30**, page 33, **Table 27**, page 62, **Appendix I, Table 14**, page I-43, and **Appendices A-D**.

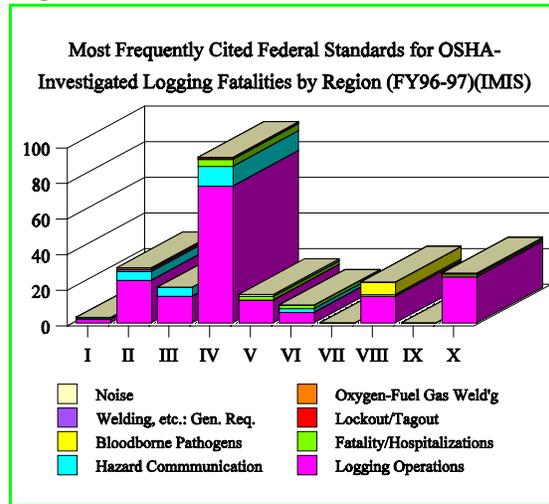
Figure 30



a. Of the three Regions with the highest number of logging investigations in FY 1996 and FY 1997, Region IV had the greatest number of violations of the logging standard (77), while Region X had the greatest proportion of logging standard violations (83%) of all violations identified. See **Figure 31**, page 34, **Table 28**, page 63, and **Appendix I, Table 14**, page I-43.

b. All of the violations identified by Florida, Louisiana, Maine, Pennsylvania and Texas during investigations of fatal incidents in FY 1996 and FY 1997, were of the Federal logging standard.

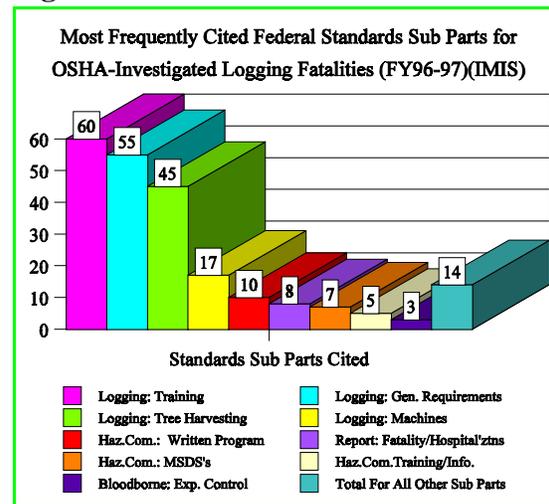
Figure 31



4. Of the eight (8) standards cited by Federal OSHA during its investigation of 47 fatal incidents, the most frequently violated sub parts were logging operations training (60 violations), general logging operations requirements (55 violations), and logging operations tree harvesting (45 violations). See **Figure 32**, page 34, and **Table 29**, page 64.

a. All regions that cited Federal standards found violations related to training and the general requirements of logging. With one exception, all regions cited employers for violations related to tree harvesting, logging machines, hazard communication written program, employee training and information, and the requirement to report fatalities and

Figure 32

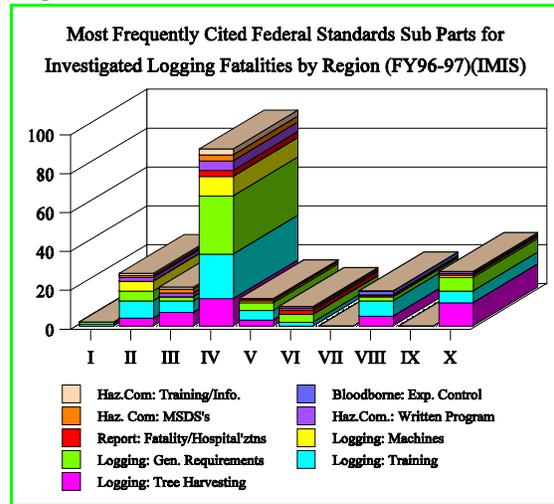


multiple hospitalizations. See **Figure 33**, page 35, **Table 30**, page 65, and **Appendix I, Table 14**, page I-43.

b. The average number of violations related to logging training for Montana and New York was significantly higher

than other states, four violations per investigation for Montana and three for New York. Texas cited three violations of the general logging requirements for the one investigation it conducted in FY 1996. Idaho averaged 2.2 violations of the tree harvesting requirements for its five investigations. See **Appendix I, Tables 13-14**, pages I-37 and I-43.

Figure 33



A Review of Logging Fatalities Investigated
by the Occupational Safety and Health Administration in
FY 1996 and FY 1997

Part 2 of 2

Data Tables

Table 1

**Number of OSHA Enforcement
Inspections in Logging (SIC 2411) by Type**
FY 1983 - FY 1997 * (National Data; Source: IMIS)

Fiscal Year	Number OSHA Enforcement Inspections			
	Programmed/ Planned Inspections	Fatality Inspections	All Other Inspections	Total
1997	428	52	81	561
1996	610	68	136	814
1995	562	56	123	741
1994	490	76	161	727
1993	733	76	126	935
1992	872	77	152	1101
1991	1273	86	126	1485
1990	1489	85	113	1687
1989	1258	50	92	1400
1988	1292	50	102	1444
1987	1234	63	90	1387
1986	1462	61	83	1606
1985	1373	62	62	1497
1984	1466	65	69	1600
1983	940	63	50	1053
Total	15,482	990	1,566	18,038

* Prior to FY 1990, not all States operating approved safety and health programs submitted inspection data to OSHA.

Table 2

Number of OSHA-Investigated Logging Fatalities by Occupation
 FY 1996 and FY 1997 (Data Source: IMIS)

Occupation*	Number of Fatalities		
	FY 1996	FY 1997	Total
Feller or Faller A Feller or Faller cuts down trees.	20	17	37
Machine/Equipment Operator These operators use machines or equipment or participate in the operation of machines or equipment to assist in the felling of trees, or to move or transport felled trees or logs. Examples of machines and equipment are skidders, yarding machines, chain saws, bull dozers, tractors, log trucks, and log loaders.	23	13	36
Limber/Bucker A limber cuts branches and tops from felled trees. A bucker saws felled trees into sections called logs.	11	11	22
Other Occupations not identified above are classified as other, e.g., chasers, loggers, company owners/co-owners, etc.	3	2	5
Unknown Where a victim's occupation could not be identified, it is classified as unknown.	6	1	7
Total	63	44	107

* The victim's occupation was determined by the activity the victim was engaged in at the time of the fatal incident, see Appendices A-E and Appendix I, Table 1, page I-1.

Table 3

Number of OSHA-Investigated Logging Fatalities by Occupation and Region
 FY 1996 and FY 1997 (Data Source: IMIS)

Occupation*	Number of Fatalities by Region (Numbers with no parentheses = FY96; numbers in parentheses = FY97)									
	I	II	III	IV	V	VI	VII	VIII	IX	X
Feller or Faller	2(1)	1(1)	3(6)	7(2)	2(1)	1(2)	-	0(3)	0	4(1)
Mach./Equipment Operators	1(0)	2(0)	3(3)	4(4)	0	1(1)	-	1(0)	1(1)	10(4)
Limber/Bucker	0	0	2(2)	5(5)	0	0(2)	-	0	1(1)	3(1)
Other	0	0	0	2(0)	0	1(0)	-	0	0(1)	0(1)
Unknown	0	0	1(1)	2(0)	0	1(0)	-	1/0	0	1(0)
Total (All)	4	4	21	31	3	9	-	5	5	25

* The victim's occupation was determined by the activity the victim was engaged in at the time of the fatal incident, see Appendices A-E and Appendix I, Table 1, page I-1.

Table 4

Number of Victims Operating Machines/Equipment
at OSHA-Investigated Logging Facilities by Type
 FY 1996 and FY 1997 (National Data; Source: IMIS)

Machine/Equipment Operators by Type*	Number of Victims		
	FY 1996	FY 1997	Total
Skidder Operators	9	4	13
Log Truck Drivers	5	3	8
Yarding Machine Operators	4	1	5
Log Loader Operators	2	2	4
Bull Dozer Operators	2	1	3
Other Operators **	1	2	3
Total	23	13	36

* See Appendices A-E and Appendix I, Table 2, page I-4.

** Other includes, one chip harvester operator in FY 1996, and one chain saw operator and one delimeter operator in FY 1997.

Table 5

**Number of Victims Operating Machines/Equipment at
OSHA-Investigated Logging Facilities by Type and Region
FY 1996 and FY 1997 (Data Source: IMIS)**

Machine/Equipment Operators*	Number of Victims by Region (Numbers with no parentheses = FY96; numbers in parentheses = FY97)									
	I	II	III	IV	V	VI	VII	VIII	IX	X
Skidder Operators	1(0)	1(0)	1(2)	2(1)	0	1(0)	-	0	0	3(1)
Log Truck Drivers	0	0	1(0)	1(1)	0	0	-	0	0	3(2)
Yarding Machine Operators	0	0	0	0	0	0	-	1/0	0/1	3/0
Log Loader Operators	0	0	0	1(1)	0	0(1)	-	0	0	1(0)
Bull Dozer Operators	0	0	1(1)	0	0	0	-	0	1/0	0
Other**	0	1(0)	0	0(1)	0	0	-	0	0	0(1)
Total (All)	1	2	6	8	0	2	-	1	2	14

* See Appendices A-E and Appendix I, Table 2, page I-4.

** Other includes, one delimeter operator in FY 1996, and one chain saw operator and one chip harvester operator in FY 1997.

Table 6

**Number of OSHA-Investigated
Logging Fatalities by Work Location**
FY 1996 and FY 1997 (National Data; Source: IMIS)

Work Location*	Number of Fatalities		
	FY 1996	FY 1997	Total
Cutting, Felling Area In this area, standing trees are cut and felled.	23	17	40
Limbing, Bucking Area In this area, felled trees are limbed, topped and cut into specified lengths.	12	9	21
Skidding Machine Area In this area, the felled trees or logs are collected by machines and hauled to the landing.	6	5	11
Landing, Log Yard In these areas, logs are collected and loaded onto transport vehicles. Further processing of the trees or logs, either manually or by machine, may be performed at the landing.	7	5	12
Log Loading Area In this area, logs are picked up and loaded onto transport vehicles, and transported to other designated locations.	6	3	9
Yarding Operations Area In this area, logs are moved via cable systems to the landing or log yard.	4	0	4
Logging Road In this area, felled trees or logs are transported by truck to other designated locations.	1	3	4
Other The work location for two victims was identified, generally, as the logging area. For three victims the work location could not be determined based on the information provided and are classified as unknown.	4	2	6
Total	63	44	107

* The work location was defined by the activity being performed in the area at the time of the victim's fatal injury. See also Appendices A-E and Appendix I, Table 3, page I-7.

Table 7

**Number of OSHA-Investigated
Logging Fatalities by Work Location and Region**
FY 1996 and FY 1997 (Data Source: IMIS)

Work Location*	Number of Fatalities by Region (Numbers with no parentheses = FY96; numbers in parentheses = FY97)									
	I	II	III	IV	V	VI	VII	VIII	IX	X
Cutting, Felling Area	2(0)	2(1)	3(6)	8(3)	2(1)	2(2)	-	0(3)	0	4(1)
Limbing, Bucking Area	0	0	3(1)	5(4)	0	0(2)	-	0	1(1)	3(1)
Skidding Machine Area	0(1)	0	1(2)	2(1)	0	1(0)	-	0(0)	0	2(1)
Landing, Log Yard	1(0)	1(0)	1(1)	1(1)	0	0(1)	-	0	0	3(2)
Log Loading Area	0	0	0/1	4(2)	0	0	-	1(0)	0(1)	1(0)
Yarding Opts. Area	0	0	0	0	0	0	-	1(0)	0	3(0)
Logging Road	0	0	0	0	0	0	-	0	0	1(2)
Other	0	0	1(1)	0	0	1(0)	-	0	1(1)	1
Total (All)	4	4	21	31	3	9	-	5	5	25

* The work location was defined by the activity being performed in the area at the time of the victim's fatal injury. See also Appendices A-E and Appendix I, Table 3, page I-7.

Table 8

Number of OSHA-Investigated Logging Fatalities by Accident Type
 FY 1996 and FY 1997 (National Data; Source: IMIS)

Accident Type*	Number of Fatalities		
	FY 1996	FY 1997	Total
Struck by Victims struck by objects (trees, logs, wood, machines, equipment) may also have been crushed or pinned by those objects after being struck.	48	34	82
Crushed by Victims were fatally crushed by machines, equipment, trees or logs.	3	2	5
Thrown from Victims thrown from machines may also have been rolled over or pinned by those same machines.	4	1	5
Caught/Pinned Between Victims were caught and pinned between two objects and then crushed.	1	2	3
Run/Rolled Over Victims were fatally injured by moving or tumbling machines, e.g., trucks, tractors, skidders, etc.	3	1	4
Crashed Victims were fatally injured in traffic accidents.	1	2	3
Slipped and Fell Victims slipped and fell from elevations (equipment, platforms) or on slippery surfaces.	1	1	2
Other Other includes one victim who was injured when he collapsed, one victim who was burned while interacting with a flammable chemical, and one victim who was cut while using equipment (a chain saw).	2	1	3
Total	63	44	107

* The type of accident was determined by the first contact the victim had with the object that caused his death, e.g., if a victim was killed by a falling tree, he would first be struck by the tree. The second and third actions could be crushed by or pinned by the same tree. See also Appendices A- E , Appendix I, Table 4, page I-10.

Table 9

**Number of OSHA-Investigated
Logging Fatalities by Accident Type and Region**
FY 1996 and FY 1997 (Data Source: IMIS)

Accident Type*	Number of Fatalities by Region (Numbers with no parentheses = FY96; numbers in parentheses = FY97)									
	I	II	III	IV	V	VI	VII	VIII	IX	X
Struck by	2(1)	1(1)	7(8)	18(11)	2(1)	2(4)	-	2(3)	1(2)	13(3)
Crushed by	1(0)	0	1(0)	0	0	0	-	0	0	1(2)
Thrown from	0	1(0)	0(1)	0	0	1(0)	-	0	1(0)	1(0)
Caught/Pinned Between	0	0	0(2)	0	0	0	-	0	0	1(0)
Run/Rolled Over	0	0	1(0)	0	0	1(0)	-	0	0(1)	1(0)
Crashed	0	0	0	0	0	0	-	0	0	1(2)
Slipped and Fell	0	0	0	1(0)	0	0(1)	-	0	0	0
Other	0	1(0)	0(1)	1(0)	0	0	-	0	0	0
Total (All)	4	4	21	31	3	9	-	5	5	25

* The type of accident was determined by the first contact the victim had with the object that caused his death, e.g., if a victim was killed by a falling tree he would first be struck by the tree and knocked down. The second and third actions could be crushed by or pinned by the same tree. See Appendices A- E and Appendix I, Table 4, page I-10. Other equals one victim in Region II who was burned while handling a flammable chemical, one victim in Region III, who was cut while operating a chain saw, and one victim in Region IV, who was fatally injured when he collapsed.

Table 10

**Number of Logging Victims
Struck by Objects at OSHA-Investigated Facilities
FY 1996 and FY 1997 (National Data; Source: IMIS)**

Objects Struck by*	Number of Victims		
	FY 1996	FY 1997	Total
Struck by Tree Victims struck by trees or tree parts may also have been crushed by those trees or tree parts after being struck.	36	28	64
Struck by Log Victims struck by logs, elevated or rolling, may also have been crushed by or pinned by those logs after being struck.	7	3	10
Struck by Wood Victims struck by a piece of wood may have also been impaled by the same piece of wood.	2	2	4
Struck by Machine/Equipment Victims struck by machines/equipment or machine/ equipment parts may also have been crushed by or pinned by those same machines or equipment after being struck.	3	1	4
Total	48	34	82

* See also Appendices A-E and Appendix I, Table 5, page I-13.

Table 11

**Number of Logging Victims Struck by Objects
by Region at OSHA-Investigated Facilities**
FY 1996 and FY 1997 (Data Source: IMIS)

Objects Struck by*	Number of Victims by Region (Numbers with no parentheses = FY96; numbers in parentheses = FY97)									
	I	II	III	IV	V	VI	VII	VIII	IX	X
Struck by Tree	2(1)	1(1)	6/8	15(6)	2(1)	2(4)	-	1(2)	1(1)	6(3)
Struck by Log	0	0	1(0)	3(3)	0	0	-	1(1)	0	2(0)
Struck by Wood	0	0	0	0(1)	0	0	-	0(1)	0	2(0)
Struck by Machine/Equipment	0	0	0	0(1)	0	0	-	0	0	3(0)
Total (All)	3	2	15	29	3	6	-	6	2	16

* See also Appendices A-E and Appendix I, Table 5, page I-13.

Table 12

**Number of Logging Fatalities From
Contact With Trees at OSHA-Investigated Facilities
FY 1996 and FY 1997 ((National Data; Source: IMIS)**

Type of Contact With Trees*	Number of Victims		
	FY 1996	FY 1997	Total
<p>Falling Trees These are trees that when cut, fall unobstructed to the ground, or are dead or live trees that should be removed in order to fell other timber safely. These trees also may be intentionally or mistakenly forced over, knocked over, or may fall over on their own. When these trees fall, victims may be fatally struck by their limbs, trunk or top.</p> <p>★ Of the 41 falling trees that fatally injured logging employees, 16 or 39% were danger trees, eight each in FY 1996 and FY 1997.</p>	21	20	41
<p>Dislodged Trees These are cut trees that are lodged or hung up in other trees and subsequently become dislodged and fall to the ground. When these trees become dislodged, victims may be fatally struck by their limbs, trunk or top.</p>	7	3	10
<p>Kick-Back Trees These are cut, falling trees that strike another tree or object and kick back over the stump toward the faller. This kind of kickback generally results from a tree being felled into standing timber and/or lack of stump-shot. When kickbacks occur, victims may be fatally struck by the trunk of the tree.</p>	3	1	4
<p>Felled Trees These are trees that have been successfully felled and are being processed, e.g., limbed, topped, bucked or skidded. Any one of these processes may result in fatal contact with the victim.</p>	4	3	7
<p>Barber-Chaired Trees These are cut, falling trees that split vertically during the falling process. This kind of action generally results from an improper face cut or back cut and is characterized by a portion of the fallen tree being left on the stump. When a tree barber-chairs, victims may be fatally struck by a portion of the trunk of the tree.</p>	1	1	2
Total	36	28	64

* See also Appendices A-E and Appendix I, Table 6, page I-16.

Table 13

**Number of Logging Fatalities From Contact
With Trees by Region at OSHA-Investigated Facilities**
FY 1996 and FY 1997 (Data Source: IMIS)

Contact With Trees by Type of Tree*	Number of Victims by Region (Numbers with no parentheses = FY96; numbers in parentheses = FY97)									
	I	II	III	IV	V	VI	VII	VIII	IX	X
Falling Trees	0(1)	1(1)	4(4)	6(6)	1(1)	2(2)	-	1(3)	1(0)	5(2)
★ Danger Trees **	[1]	[2]	[3]	[6]	[2]	[0]	[-]	[0]	[0]	[2]
Dislodged Trees	1(0)	0	1(1)	4(0)	1(0)	0(1)	-	0	0	0
Kick-Back Trees	1(0)	0	0(1)	2(0)	0	0	-	0	0	0
Felled Trees	0	0	1(0)	3(0)	0	0	-	0	0(1)	0
Barber-Chaired Tree	0	0	0	0	0	0(1)	-	0	0	1(0)
Total (All)	3	2	12	21	3	6	-	4	2	8

* See also Appendices A-E and Appendix I, Table 6, page I-16.

** 'Danger trees' is a subtotal of the number of falling trees and equals the number of falling trees determined to be danger trees in both years, FY 1996 and FY 1997.

Table 14
Number of OSHA-Investigated
Logging Fatalities by Employee Activity
 FY 1996 and FY 1997 (National Data; Source: IMIS)

Employee Activity*	Number of Fatalities		
	FY 1996	FY 1997	Total
Felling a Tree Employees engaged in this activity were in the process of cutting down a tree, i.e., making the standard cuts to fell the tree, waiting for the tree to fall, etc.	18	16	34
Operating Machines or Equipment Employees engaged in this activity were operating either machines or equipment, e.g., a skidder, log trucks, chainsaw, etc., or performing various functions associated with the operation of machines or equipment, e.g., setting chokers on a yarding machine, machine maintenance or repair, etc.	15	10	25
Limbing or Bucking a Felled Tree Employees engaged in this activity were removing either limbs or tops from felled trees or cutting the limbed trees into specified lengths.	11	9	20
Waiting for Other Processes to Be Completed A number of employees were waiting for other actions to be completed (e.g., waiting for an adjacent tree to be felled by a co-worker) when they were fatally injured by the results of those actions.	8	1	9
Loading or Unloading Logs Employees engaged in this activity were loading or assisting in the loading of logs onto trucks, or trailers or wrapping or unwrapping loads of logs.	3	2	5
Other A number of employees were engaged in activities at the time of their death that do not fall in any of the above categories -- walking beside a moving log truck, leaving the work site, stacking short logs, checking the property line, cutting a stump, or stamping logs.	4	3	7
Unknown For seven employees, their activity at the time of death could not be determined based on the information available.	4	3	7
Total	63	44	107

* The employee's activity was determined by the activity or occupation the victim was engaged in at the time of the fatal injury. See also Appendices A-E and Appendix I, Table 7, page I-19.

Table 15

**Number of OSHA-Investigated
Logging Fatalities by Employee Activity and Region**
FY 1996 and FY 1997 (Data Source: IMIS)

Employee Activity*	Number of Fatalities by Region (Numbers with no parentheses = FY96; numbers in parentheses = FY97)									
	I	II	III	IV	V	VI	VII	VIII	IX	X
Felling a Tree	2(1)	1(1)	2(5)	6(2)	2(1)	1(2)	-	0(3)	0	4(1)
Operating Machine/Equipment	1(0)	2(0)	1(3)	2(1)	0	1(1)	-	1(0)	1(1)	6(4)
Limbing/Bucking a Tree	0	0	3(1)	4(5)	0	0(2)	-	0	1(0)	3(1)
Waiting for Other Processes**	0	0	0	4(0)	0	0	-	0	0(1)	4(0)
Loading/Unloading Logs	0	0	1(0)	1(2)	0	0	-	0	0	1(0)
Other	0	0	0(2)	2(0)	0	2(0)	-	0	0	0(1)
Unknown	0	0	2(1)	1(1)	0	0	-	1(0)	0(1)	0
Total (All)	4	4	21	31	3	9	-	5	5	25

* The employee's activity was determined by the activity or occupation the victim was engaged in at the time of the fatal injury. See also Appendices A-E and Appendix I, Table 7, page I-19.

** Waiting for other processes = 'Waiting for other processes to be completed.'

Table 16

**Number of OSHA-Investigated
Logging Fatalities by Type of Incident**
FY 1996 and FY 1997 (National Data; Source: IMIS)

Type of Incident*	Number of Fatalities		
	FY 1996	FY 1997	Total
<p>Procedural Procedural incidents are incidents that result when the victim, other employee(s) or the employer does not follow designated safety and health work procedures, or when there are no available operating procedures, as required. Required work procedures include the safe guarding of the work area, the use of appropriate personal protective equipment, and all work activities under the control of the employees and the employer.</p>	58	40	98
<p>Mechanical Mechanical incidents are incidents that result from the malfunctioning of equipment. For example, the employee or victim parks a skidder on a 20-degree slope of a hill and engages the parking brake. As he walks downhill from the skidder, the parking brake disengages causing the skidder to roll backwards, striking and pinning the employee against a tree.</p>	3	4	7
<p>Material Material incidents are incidents that result from the failure of component parts.</p>	1	0	1
<p>Structural Structural incidents are incidents that result from the collapse of buildings or other structures, including platforms.</p>	0	0	0
<p>Environmental Environmental incidents are incidents where extreme, sudden and unexpected changes in environmental conditions played a primary part in triggering the incident. High winds, icy surfaces, the sudden presence of hazardous gases, etc., are examples.</p>	0	0	0
<p>Other Other incidents are incidents that do not fall into any of the above categories. One victim collapsed in South Carolina and another was struck by the tree he was preparing to dislodge in Alabama.</p>	1	0	1
Total	63	44	107

* The type of incident was the result of an assessment or analysis of the description of events leading up to each fatality. See also Appendices A-E and Appendix I, Table 8, page I-22.

Table 17

**Number of OSHA-Investigated
Logging Fatalities by Type of Incident and Region**
FY 1996 and FY 1997 (Data Source: IMIS)

Type of Incident*	Number of Fatalities by Region (Numbers with no parentheses = FY96; numbers in parentheses = FY97)									
	I	II	III	IV	V	VI	VII	VIII	IX	X
Procedural	3(1)	3(1)	8(11)	19(9)	2(1)	4(5)	-	2(3)	2(3)	15(6)
Mechanical	0	0	1(1)	0(2)	0	0	-	0	0	2(1)
Material	0	0	0	0	0	0	-	0	0	1(0)
Structural	0	0	0	0	0	0	-	0	0	0
Environmental	0	0	0	0	0	0	-	0	0	0
Other	0	0	0	1(0)	0	0	-	0	0	0
Total (All)	4	4	21	31	3	9	-	5	5	25

* The type of incident was the result of an assessment or analysis of the description of events leading up to each fatality. See also Appendices A-E and Appendix I, Table 8, page I-22.

Table 18

**Number of OSHA-Investigated
Logging Fatalities by Related Factor**
FY 1996 and FY 1997 (National Data; Source: IMIS)

Related Factor*	Number of Fatalities		
	FY 1996	FY 1997	Total
<p>Human Factor The human factor is a factor that can be directly associated with what the victim, other employee(s) or the employer did or failed to do that caused the fatal incident. For example, improper or dangerous work procedures were used, safety procedures were not followed or personal protective equipment was not worn when required. Included is any work activity or procedure under the direct control of the victim, fellow employees and the employer.</p> <p>★ <u>Employers are responsible for providing safe and healthful operating procedures and ensuring employee compliance.</u></p>	57	41	98
<p>Mechanical Factor A mechanical factor is a factor that can be associated with the failure of machines or equipment to function properly, and the interaction between the machines and equipment and the workers. For example, the employee or victim parks a skidder on a 20-degree slope of a hill and engages the parking brake. As he walks downhill from the skidder, the parking brake disengages causing the skidder to roll backwards, striking and pinning the employee against a tree.</p> <p>★ <u>Employers are responsible for the safety of machines and equipment.</u></p>	2	3	5
<p>Material Factor A material factor is a factor that can be associated with the failure of products to perform as specified by the manufacturer, and the interaction between the product and the workers.</p> <p>★ <u>Employers are responsible for the safety of materials.</u></p>	2	0	2

Related Factor*	Number of Fatalities		
	FY 1996	FY 1997	Total
<p>Structural Factor A structural factor is a factor that can be associated with the collapse of buildings, platforms or other structures, & the interaction between the structures and the workers.</p> <p>★ <u>Employers are responsible for the safety of structures.</u></p>	0	0	0
<p>Environmental Factor An environmental factor is a factor related to extreme, sudden and unexpected changes in environmental condition in the workplace which strongly and adversely affects the working conditions. High winds, icy surfaces, the sudden presence of hazardous gases, etc., are examples.</p> <p>★ <u>The employer has little control over extreme and unexpected changes in the weather or the sudden and unexpected presence of hazardous gases.</u></p>	0	0	0
<p>Other Factors Other factors are factors that cannot be assigned to the other categories, e.g., a victim's heart fails while he is stacking logs.</p>	2	0	2
Total	63	44	107

* A factor related to a fatal incident is an element of the chain of events that can be directly associated with the cause of the fatal incident. See also Appendices A-E and Appendix I, Table 9, page I-25.

Table 19

**Number of OSHA-Investigated
Logging Fatalities by Related Factor and Region**
FY 1996 and FY 1997 (Data Source: IMIS)

Related Factor*	Number of Fatalities by Region (Numbers with no parentheses = FY96; numbers in parentheses = FY97)									
	I	II	III	IV	V	VI	VII	VIII	IX	X
Human Factor	3(1)	3(1)	8(11)	18(10)	2(1)	4(5)	-	2(3)	2(3)	15(6)
Mechanical Factor	0	0	1(1)	0(1)	0	0	-	0	0	1(1)
Material Factor	0	0	0	0	0	0	-	0	0	2(0)
Structural Factor	0	0	0	0	0	0	-	0	0	0
Environmental Factor	0	0	0	0	0	0	-	0	0	0
Other Factors	0	0	0	2(0)	0	0	-	0	0	0
Total (All)	4	4	21	31	3	9	-	5	5	25

* A factor related to a fatal incident is an element of the chain of events that can be directly associated with the cause of the fatal incident. See also Appendices A-E and Appendix I, Table 9, page I-25.

Table 20

**Number of OSHA-Investigated
Logging Fatalities by Source of Injury**
FY 1996 and FY 1997 (National Data; Source: IMIS)

Source of Injury*	Number of Fatalities		
	FY 1996	FY 1997	Total
Tree The source of injury from trees includes contact with any part of the tree, i.e., the trunk, the limbs or the top.	36	26	62
Machines/Equipment The source of injury from machines or equipment includes mountable and non mountable machines and any associated parts, e.g., skidders, and hand held and stationery equipment, such as, chain saws and yarding machines.	14	13	27
Log The source of injury from a log includes contact with any limbed tree that is on the ground and any part of that tree, i.e., the trunk or top.	8	3	11
Piece of Wood The source of injury from a piece of wood generally includes any piece of wood that is separated from a tree.	2	2	4
Other Other sources of injury are those sources that cannot be classified as a tree, log, piece of wood, machine or equipment.	3	0	3
Total	63	44	107

* The source of injury is the object or material that the victim had first contact with that was determined to be the leading cause of fatal injury to the victim. See also Appendices A-E and Appendix I, Table 10, page I-28.

Table 21

**Number of OSHA-Investigated
Logging Fatalities by Source of Injury and Region**
FY 1996 and FY 1997 (Data Source: IMIS)

Source of Injury*	Number of Fatalities by Region (Numbers with no parentheses = FY96; numbers in parentheses = FY97)									
	I	II	III	IV	V	VI	VII	VIII	IX	X
Tree	2(1)	1(1)	6(8)	14(6)	2(1)	2(4)	-	1(3)	1(0)	7(2)
Machine/Equipment	1(0)	1(0)	2(4)	0(2)	0	2(1)	-	0	1(1)	7(5)
Log	0	0	1(0)	4(2)	0	0	-	1(0)	0(1)	2(0)
Piece of Wood	0	0	0	0(1)	0	0	-	0	0(1)	2(0)
Other	0	1(0)	0	2(0)	0	0	-	0	0	0
Total (All)	4	4	21	31	3	9	-	5	5	25

* The source of injury is the object or material that the victim had first contact with that was determined to be the leading cause of fatal injury to the victim. See also Appendices A-E and Appendix I, Table 10, page I-28.

Table 22

**Number of OSHA-Investigated
Logging Fatalities by Source of Fatal Action
FY 1996 and FY 1997 (National Data; Source: IMIS)**

Sources of Fatal Action*	Number of Fatalities		
	FY 1996	FY 1997	Total
Action Taken by Victim The source of fatal injury is related to the victim when the injury resulted from an action taken by the victim, e.g., the victim was fatally injured by a tree he was felling.	42	36	78
Action Taken by Other Workers The source of fatal injury is related to other workers when the victim's fatal injuries resulted from an action taken by another worker, e.g., the victim was fatally injured by a tree felled by his co-worker.	21	8	29
Total	63	44	107

* The source of the fatal action is the action that resulted in fatal injury to the victim. See also Appendix A-E and Appendix I, Table 11, page I-31.

Table 23

**Number of OSHA-Investigated
Logging Fatalities by Source of Fatal Action and Region
FY 1996 and FY 1997 (Data Source: IMIS)**

Sources of Fatal Action*	Number of Fatalities by Region (Numbers with no parentheses = FY96; numbers in parentheses = FY97)									
	I	II	III	IV	V	VI	VII	VIII	IX	X
Action Taken by Victim	3(0)	3(1)	8(12)	11(8)	2(1)	3(4)	-	0(2)	1(2)	11(6)
Action Taken by Other Workers	0(1)	0	1(0)	9(3)	0	1(1)	-	2(1)	1(1)	7(1)
Total (All)	4	4	21	31	3	9	-	5	5	25

* The source of the fatal action is the action that resulted in fatal injury to the victim. See also Appendix A-E and Appendix I, Table 11, page I-31.

Table 24

Number of OSHA-Investigated Logging Fatalities by Work Pattern
 FY 1996 and FY 1997 (National Data; Source: IMIS)

Work Pattern*	Number of Fatalities		
	FY 1996	FY 1997	Total
Victim Was Working Alone Victims working alone were not within sight or hearing of other workers when the fatal injury occurred.	36	35	71
Victim Was Working With Others Victims working with others were within sight and/or hearing of other workers when the fatal injury occurred.	27	9	36
Total	63	44	107

* The work pattern is defined by the work activity and the proximity of the workers to each other. See also Appendix A-E and Appendix I, Table 12, page I-34.

Table 25

**Number of OSHA-Investigated
 Logging Fatalities by Work Pattern and Region**
 FY 1996 and FY 1997 (Data Source: IMIS)

Work Pattern*	Number of Fatalities (Numbers with no parentheses = FY96; numbers in parentheses = FY97)									
	I	II	III	IV	V	VI	VII	VIII	IX	X
Victim Was Working Alone	3(0)	2(1)	6(10)	7(9)	2(1)	4(4)	-	1(3)	1(1)	10(6)
Victim Was Working With Others	0(1)	1(0)	3(2)	13(2)	0	0(1)	-	1(0)	1(2)	8(1)
Total	4	4	21	31	3	9	-	5	5	25

* The work pattern is defined by the work activity and the proximity of the workers to each other. See also Appendix A-E and Appendix I, Table 12, page 34.

Table 26

**Number of OSHA-Investigated Logging Fatalities Resulting
in Citations for Violations of Federal or State Standards, by Region**
FY 1996 and FY 1997 (Data Source: IMIS)

Regions and States	Fatality Investigations Resulting in Citations			
	Number of Investigations		Number Resulting in Citations	
	FY 1996	FY 1997	FY 1996	FY 1997
Region I	3	1	2	0
Maine	1	0	1	-
New Hampshire	1	0	0	-
Vermont*	1	1	1	0
Region II	3	1	3	1
New York	3	1	3	1
Region III	9	12	8	7
Pennsylvania	1	1	1	0
Virginia*	5	8	5	6
West Virginia	3	3	2	1
Region IV	20	11	18	10
Alabama	8	4	8	4
Florida	1	1	1	1
Georgia	2	1	2	1
Mississippi	4	3	4	3
North Carolina*	2	2	1	1
South Carolina*	2	0	1	-
Tennessee*	1	0	1	-
Region V	2	1	2	1

Regions and States	Fatality Investigations Resulting in Citations			
	Number of Investigations		Number Resulting in Citations	
	FY 1996	FY 1997	FY 1996	FY 1997
Illinois	1	0	1	-
Ohio	1	0	1	-
Wisconsin	0	1	-	1
Region VI	4	5	1	5
Arkansas	2	2	0	2
Louisiana	0	3	-	3
Texas	2	0	1	-
Region VIII	2	3	1	2
Montana	1	1	1	1
Utah*	1	2	0	1
Region IX	2	3	2	2
California*	2	3	2	2
Region X	18	7	11	4
Idaho	3	1	2	0
Oregon*	8	2	4	0
Washington*	7	4	5**	4
Total	63	44	48	32

* State plan states.

** One of the five fatalities in Washington in FY 1996 that resulted in citations was on Federal land and was investigated by Federal OSHA. Citations were issued against Federal standards.

Table 27

**Number of Times Federal Standards Were Cited
During Federal OSHA Fatality Investigations at Logging Facilities
FY 1996 and FY 1997 (National Data; Source: IMIS)**

Federal Standards Cited		Number of Times Cited		
		FY 1996	FY 1997	Total
1910.266	Logging Operations	116	62	178
1910.1200	Hazard Communication	18	6	24
1904.8	Reporting Fatality/Multiple Hospitalizations	6	4	10
1910.1030	Bloodborne Pathogens	4	4	8
1910.147	Lockout/Tagout	1	0	1
1910.252	Welding/Cutting/Brazing: General Requirements	1	0	1
1910.253	Oxygen-Fuel Gas Welding	0	1	1
1910.95	Occupational Noise Monitoring	0	1	1
Total		146	78	224

Table 28

**Number of Times Federal Standards Were Cited During
Federal OSHA Fatality Investigations at Logging Facilities, by Region
FY 1996 and FY 1997 (Data Source: IMIS)**

Federal Standards Cited	Number of Times Cited (Numbers with no parentheses = FY96; numbers with parentheses = FY97)									
	I	II	III	IV	V	VI	VII	VIII	IX	X
1910.266 Logging Operations	2(-)	17(7)	11(4)	52(25)	5(8)	4(2)	-	7(8)	-	18(8)
1910.1200 Hazard Communication	1(-)	1/4	5/0	11(0)	0	-(2)	-	0	-	0
1904.8 Reporting Fatality/ Multiple Hospitalizations	0	0	0	3(1)	2(0)	-(2)	-	0(1)	-	1(0)
1910.1030 Bloodborne Pathogens	0	0	0	0	0	0	-	4(3)	-	0(1)
1910.147 Lockout/Tagout	0	0	0	1(0)	0	0	-	0	-	0
1910.252 Welding/Cutting/ Brazing: General Requirements	0	1(0)	0	0	0	0	-	0	-	0
1910.253 Oxygen-Fuel Gas Welding	0	0(1)	0	0	0	0	-	0	-	0
1910.95 Occupational Noise Monitoring	0	0	0	0	0(1)	0	-	0	-	0
Total (All)	3	31	20	93	16	10	-	23	-	28

Table 29
Number of Times Federal Standards Sub Parts Were Cited During
Federal OSHA Fatality Investigations at Logging Facilities (FY 1996 and FY 1997)

Federal Standards Cited (National Data; Source: IMIS)		No. of Times Cited		
		FY96	FY97	Total
1910.266(i)	Logging (Training)	41	19	60
1910.266(d)	Logging (General Requirements)	40	15	55
1910.266(h)	Logging (Tree Harvesting)	24	21	45
1910.266(f)	Logging (Machines)	10	7	17
1910.1200(e)	Hazard Communication (Written Communications Program)	8	2	10
1904.8	Reporting of Fatality or Multiple Hospitalization Incidents	5	3	8
1910.1200(g)	Hazard Communication (Material Safety Data Sheets)	0	2	7
1910.1200(h)	Hazard Communication (Employee Information & Training)	4	1	5
1910.1030(c)	Bloodborne Pathogens (Exposure Control)	1	2	3
1904.8(a)	Reporting of Fatality or Multiple Hospitalization Incidents (Within 8 hours . . .)	1	1	2
1910.1030(d)	Bloodborne Pathogens (Methods of Compliance)	1	1	2
1910.1030(g)	Bloodborne Pathogens (Communication of Hazards to Employees)	1	1	2
1910.1030(f)	Bloodborne Pathogens (Hepatitis B Vaccination and Post-Exposure Evaluation)	1	0	1
1910.1200(f)	Hazard Communication (Labels & Other Forms of Warning)	0	1	1
1910.147(c)	Lockout/Tagout (General)	1	0	1
1910.252(a)	Welding, Cutting and Brazing: General Requirements (Fire Prevention and Protection)	1	0	1
1910.253(a)	Oxygen-Fuel Gas Welding/Cutting (General Requirements)	0	1	1
1910.266(e)	Logging (Hand and Portable Powered Tools)	1	0	1
1910.266(g)	Logging (Vehicles)	1	0	1
1910.95(d)	Noise (Monitoring)	0	1	1
Total		146	78	224

Table 30

**Number of Times Federal Standards Sub Parts Were Cited During
Federal OSHA Fatality Investigations at Logging Facilities, by Region
FY 1996 and FY 1997 (Data Source: IMIS)**

Federal Standards Sub Parts	Number Violations by Region (Numbers with no parentheses = FY96; numbers in parentheses = FY97)									
	I	II	III	IV	V	VI	VII	VIII	IX	X
Logging: Training (1910.266(i))	1(0)	6(3)	6(0)	14(9)	3(2)	1(1)	-	4(4)	-	6(0)
Logging: Gen. Requirements (1910.266(d))	1(0)	4(1)	2(0)	21(9)	2(2)	3(1)	-	1(1)	-	6(1)
Logging: Tree Harvesting (1910.266(h))	0(0)	3(1)	3(4)	11(3)	0(3)	0(0)	-	2(3)	-	5(7)
Logging: Machines (1910.266(f))	0(0)	3(2)	0(0)	6(4)	0(1)	0(0)	-	0(0)	-	1(0)
Hazard Communications: Written Program (1910.1200(e))	0(0)	1(1)	2(0)	5(0)	0(0)	0(1)	-	0(0)	-	0(0)
Reporting: Fatality/Multiple Hospitalizations (1904.8)	0(0)	0(0)	0(0)	3(0)	1(0)	0(2)	-	0(1)	-	1(0)
Hazard Communications: MSDS's (1910.1200(g))	0(0)	0(1)	2(0)	3(0)	0(0)	0(1)	-	0(0)	-	0(0)
Hazard Communications: Employee Training/Info. (1910.1200(h))	0(0)	0(1)	1(0)	3(0)	0(0)	0(0)	-	0(0)	-	0(0)
Bloodborne Pathogens: Exp. Control (1910.1030(e))	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	-	1(1)	-	0(1)
All Others	1(0)	2(2)	0(1)	1(0)	1(1)	0(0)	-	4(3)	-	0(1)
Total (All)	3	31	21	92	16	10	-	25	-	29

APPENDIX

A Review of Logging Fatalities Investigated by the Occupational Safety and Health Administration in FY 1996 and FY 1997

APPENDIX

(Part 2 of 2)

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**Logging Fatalities Investigated by the
Occupational Safety and Health Administration (OSHA) in FY 1996
(Part 2 of 2)**

(The following logging fatality cases are in chronological order by date of the event, October - September.)

Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p style="text-align: center;">1 (Region X) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 124819103</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>At approximately 11:30 a.m. on October 2, 1995, a 37-year-old male employee of Thomas H. Ireland, Inc. of Oregon was fatally injured when struck by a log. The employee or victim was attempting to wrap his load of logs before moving his truck. He had thrown a wrapper over the load of logs and was attempting to place it around the right front bunk to create a strip wrapper. As he pulled on the wrapper, the outside top log rolled off the load striking him in the chest and abdomen and knocking him to the ground. The chaser heard the log fall and turned to see the victim sitting on the ground. He started CPR while the crew called for assistance. The victim was dead on arrival to the hospital.</p> <hr style="border-top: 1px dotted black;"/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	<p>a. Machine/Equipment Operator: Truck: Driver b. Log loading area** c. Struck by elevated log+ d. Wrapping a load of logs e. Procedural f. Human (contact: log)</p>

- ✓ The citation for this standard was identified in the Integrated Management Information System (IMIS) as relating to the fatal event. Other citations, those with no ✓ mark, are also included here because they appear to relate to the circumstances of the fatal event.
- * The victim was working alone, i.e., the victim was not within hearing and/or sight of other workers when he was fatally injured.
- ** The victim was working within hearing and/or sight of other workers when he was fatally injured.
- + The action that caused the victim's death resulted from tasks the victim was performing or actions the victim failed to take that caused his death, e.g., the victim was fatally struck by the tree he was felling or the victim failed to remove a standing danger tree before felling a near by tree.
- ++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>2</p> <p>(Region X) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 108237959</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>At approximately 11:45 a.m. on October 5, 1995, a 38-year-old male employee of Mark T. Jones & Gregory P. Jones of Oregon was found caught between a crawler tractor and a log. The employee had yarded a turn of four logs to a transfer point and was unhooking the four chokers. He had unhooked three chokers and was unhooking the fourth when it appears that the tractor rolled backwards on top of the victim, pinning him to one of the logs in the turn. The skidder operator returned to the transfer point to find the victim. He removed the tractor and proceeded with CPR. Help was summoned and the victim was carried 300 yards downhill to an ambulance where he was pronounced deceased and transported to a local funeral home.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 0</p> <p>b. Number of citations issued related to the event: 0</p>	<p>a. Machine/Equipment Operator: Skidder/Crawler Tractor</p> <p>b. Landing, log yard*</p> <p>c. Rolled over (pinned by and crushed by) tractor+</p> <p>d. Unhooking chokers from logs</p> <p>e. Procedural</p> <p>f. Human (contact: equipment)</p>
<p>3</p> <p>(Region VI) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 122259278</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On October 17, 1995, a 46-year-old male employee of B & B Logging Company, Inc. of Texas was fatally injured when he accidentally stepped in front of the rear tires of a moving log truck as he walked beside it.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 0</p> <p>b. Number of citations issued related to the event: 0</p>	<p>a. Unknown</p> <p>b. Other: Unknown*</p> <p>c. Run over by log truck+</p> <p>d. Other (Walking beside moving log truck)</p> <p>e. Procedural</p> <p>f. Human (contact: log truck)</p>

- ✓ The citation for this standard was identified in the Integrated Management Information System (IMIS) as relating to the fatal event. Other citations, those with no ✓ mark, are also included here because they appear to relate to the circumstances of the fatal event.
- * The victim was working alone, i.e., the victim was not within hearing and/or sight of other workers when he was fatally injured.
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- + The action that caused the victim's death resulted from tasks the victim was performing or actions the victim failed to take that caused his death, e.g., the victim was fatally struck by the tree he was felling or the victim failed to remove a standing danger tree before felling a near by tree.
- ++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>4</p> <p>(Region X) (State)</p> <p>(NOTE: This investigation was conducted by Federal OSHA.)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 109427021</p> <p>Scope: Complete</p> <p>LEP: Yes</p>	<p>On October 20, 1995, a 20-year-old male employee of Elk Creek Contractors, Inc., of Washington was fatally injured by a skidder. The employee drove a rubber tired skidder up a 32-degree slope and backed around sideways to the slope. The skidder rolled over sideways. There were some old stumps and loose logs in the area hidden by undergrowth which may have contributed to the rollover. At some point during the two or more revolutions of the skidder, the employee was ejected from the cab and the skidder rolled over his chest and head. The contributing factors were, (a) the employee was not wearing the available seat belt, (b) the employee had two months experience operating the skidder and was not provided effective training, and (c) safety meetings were irregular and did not cover necessary topics.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 7</p> <p>b. Number of citations issued related to the event: 3</p> <p>✓--1910.266(d)(3)(ii) (failure to use a seat belt)</p> <p>✓--1910.266(i)(3) (employer failed to train employees)</p> <p>✓--1904.8 (employer failed to report fatality)</p> <p>--1910.266(i)((11) (no monthly safety and health meetings)</p>	<p>a. Machine/Equipment Operator: Skidder/Skidder</p> <p>b. Skidding machine area*</p> <p>c. Thrown from (rolled over by) skidder+</p> <p>d. Operating a skidder on a 32-degree slope</p> <p>e. Procedural</p> <p>f. Human (contact: equipment)</p>

- ✓ The citation for this standard was identified in the Integrated Management Information System (IMIS) as relating to the fatal event. Other citations, those with no ✓ mark, are also included here because they appear to relate to the circumstances of the fatal event.
- * The victim was working alone, i.e., the victim was not within hearing and/or sight of other workers when he was fatally injured.
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- + The action that caused the victim's death resulted from tasks the victim was performing or actions the victim failed to take that caused his death, e.g., the victim was fatally struck by the tree he was felling or the victim failed to remove a standing danger tree before felling a near by tree.
- ++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>5</p> <p>(Region I) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 123529422</p> <p>Scope: Partial</p> <p>LEP: Yes</p>	<p>On October 23, 1995, a 41-year-old male employee of Hanington Brothers, Inc. of Maine was fatally injured by a skidder. The employee was hauling cut trees to his collection area when he experienced trouble with his shift mechanism on the skidder. He moved the skidder down the road to a grassy area and lowered the blade but did not set the parking brake. He dismounted and got between the wheels on the right side of the skidder and removed a 12"x14" plate from the side of the skidder. The transmission is located behind the plate. Two cables run from the shift lever to the transmission, one for the eight forward gears and one for the four reverse gears. The reverse cable had become defective and the employee apparently tried to maneuver it manually by reaching into the opening behind the removed plate. In doing so, the skidder was placed into a reverse gear and began to back up. The parking brake had not been set and the skidder blade and skidder backed over and crushed the employee.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 3</p> <p>b. Number of citations issued related to the event: 2</p> <p>✓-1910.266(i)(3)(ii) (failure to train employee in safe maintenance of machine)</p> <p>✓-1910.266(g)(3) (operating instructions not available in vehicle)</p>	<p>a. Machine/Equipment Operator: Skidder/Skidder</p> <p>b. Landing, Log yard*</p> <p>c. Crushed by skidder+</p> <p>d. Operating machinery: Repairing the skidder</p> <p>e. Procedural</p> <p>f. Human (contact: equipment)</p>

- ✓ The citation for this standard was identified in the Integrated Management Information System (IMIS) as relating to the fatal event. Other citations, those with no ✓ mark, are also included here because they appear to relate to the circumstances of the fatal event.
- * The victim was working alone, i.e., the victim was not within hearing and/or sight of other workers when he was fatally injured.
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- + The action that caused the victim's death resulted from tasks the victim was performing or actions the victim failed to take that caused his death, e.g., the victim was fatally struck by the tree he was felling or the victim failed to remove a standing danger tree before felling a near by tree.
- ++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>6</p> <p>(Region X) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 115340481</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On October 31, 1995, a 68-year-old male employee of George Max Catlin dba Max Catlin Cutting of Washington was fatally injured. The employee or victim was felling timber in a clear-cut unit. He was attempting to fell an alder tree (approximately 80 feet tall) south into the clear cut. He sawed over half way into the tree for the under cut; the tree sat back, leaning toward the north. He sawed a back cut, approximately one inch, into the tree before moving back about 30 feet behind and to the north of the sawed tree. He then attempted to fell another alder tree, approximately 80 feet tall, into the sawed-up tree to push/drive it over. The falling tree did not directly hit the sawed-up tree but pushed it forward. However, it did not break off with the amount of holding wood on the back side of the tree, but instead the tree swung backwards and fell toward the north, in the direction of the feller. The victim attempted to run from the falling tree, but fell down over a log and was crushed by the falling tree.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 2</p> <p>b. Number of citations issued related to the event: 2</p> <p>✓--296-54-529(28) (tree with face cut and back cut left standing)</p> <p>-296-54-507(5) (no accident prevention program)</p>	<p>a. Feller/Faller</p> <p>b. Cutting, felling area*</p> <p>c. Crushed by falling tree+</p> <p>d. Felling a tree</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>

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- ++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>7</p> <p>(Region IV) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 106102064</p> <p>Scope: Partial</p> <p>LEP: Yes</p>	<p>On November 15, 1995, a 38-year-old male employee of George Bradford Timber of Alabama died after being seriously injured. The victim was cutting down a white oak tree. As the tree fell, its limbs broke a limb off a sweet gum tree. The limb from the sweet gum tree struck the victim on the back, breaking some of his bones. He was hospitalized on October 27, 1995, and died on November 15, 1995, apparently from a blood clot that stopped his heart.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 4</p> <p>b. Number of citations issued related to the event: 4</p> <p>✓-1910.266(h)(2)(i) (failure to plan and clear retreat path)</p> <p>✓--1910.266(h)(2)(ii) (failure to assess for hazards prior to felling tree)</p> <p>✓--1910.266(i)(3)(iii) (employer failed to train employees)</p> <p>-1910.266(i)(10)(i) (no certification of training)</p>	<p>a. Feller/Faller</p> <p>b. Cutting, felling area*</p> <p>c. Struck by falling limb from danger tree+</p> <p>d. Felling a tree</p> <p>e. Procedural</p> <p>f. Human (contact: a tree limb)</p>

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- ++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>8</p> <p>(Region X) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 115340580</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On November 19, 1995, a 34-year-old male employee of Ectc Inc. of Washington was fatally injured. The victim was felling timber on a side hill in a clear-cut unit, while another employee was felling timber on the other side of a ridge from the victim. The victim moved to within 100-150 feet of the other employee to fell some trees. Because of the ridge and heavy brush, the two fellers were not in visual contact and hearing was poor. The other employee felled a large fir tree approximately 120 feet tall in the direction where the victim was working. The victim was just starting to place an under cut in a large tree to fall in the direction away from the other employee. With his power saw running and facing in the opposite direction, the victim did not see or hear the tree falling toward him. The victim died after being struck in the head by the falling tree that fell approximately 90 feet from his location.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 1</p> <p>b. Number of citations issued related to the event: 1 ✓-296-54-529(31) (timber fallers working too close together)</p>	<p>a. Feller/Faller b. Cutting, felling area** c. Struck by falling tree++ d. Felling a tree e. Procedural f. Human (contact: a tree)</p>

- ✓ The citation for this standard was identified in the Integrated Management Information System (IMIS) as relating to the fatal event. Other citations, those with no ✓ mark, are also included here because they appear to relate to the circumstances of the fatal event.
- * The victim was working alone, i.e., the victim was not within hearing and/or sight of other workers when he was fatally injured.
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- ++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>9</p> <p>(Region IV) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 107092678</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On November 20, 1995, a 54-year-old male employee of Carl Gandy of Mississippi was fatally injured when he was struck by a log. The employee was standing in close proximity to a knuckle boom while logs were being loaded on a trailer. The knuckle boom operator lost part of the log load and one of the logs struck the employee in the back of the head as he tried to run.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 5</p> <p>b. Number of citations issued related to the event: 3</p> <p>✓-1910.266(d)(6)(i) (employees working too close together)</p> <p>✓-1910.266(i)(1) (employer failed to train employees)</p> <p>✓-1910.266(d)(1)(i) (no head protection)</p>	<p>a. Unknown</p> <p>b. Log loading area**</p> <p>c. Struck by elevated log++</p> <p>d. Standing near a knuckle boom while logs were being loaded on a trailer</p> <p>e. Procedural</p> <p>f. Human (contact: a log)</p>
<p>10</p> <p>(Region II) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 114090350</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On November 29, 1995, a 29-year-old male employee of J. A. Yansick Lumber Co. of New York was fatally injured. The cutter attached the skidder winch cable to the base of the tree to be cut and then made a notch and a back cut. The skidder operator (the victim) was to gently pull back on the base of the tree so that the tree did not roll to the bottom of the embankment. The force created by the falling tree and the angle of the slope caused the skidder to flip over backwards and roll to the bottom of the 100-foot embankment. The skidder operator (the victim) was dead at the scene from massive internal injuries.</p>	<p>a. Machine/Equipment Operator: Skidder/Skidder</p> <p>b. Cutting, felling area**</p> <p>c. Thrown from (rolled over by) skidder+</p> <p>d. Operating the skidder</p> <p>e. Procedural</p> <p>f. Human (contact: equipment)</p>

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- ++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<u>Standards/Citation Information</u> a. Total number of citations issued: 10 b. Number of citations issued related to the event: 2 -1910.266(f)(2)(iv) (machine not operated within its stability limitations) -1910.266(h)(1)(iii) (yarding machine operated within two trees lengths of felling operations)	
11 (Region I) (Federal) <u>Inspection Information</u> Insp. No: 108774555 Scope: Partial LEP: No	On December 7, 1995 , a 58-year-old male employee of Roger Doyon of New Hampshire was fatally injured when the tree he was felling was caught in another tree, kicked back, striking and crushing him. <u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0	a. Feller/Faller b. Cutting, felling area* c. Struck by (crushed by) tree kick back+ d. Felling the tree e. Procedural f. Human (contact: a tree)
12 (Region IV) (State) <u>Inspection Information</u> Insp. No: 120520614 Scope: Partial LEP: No	On December 8, 1995 , a 39-year-old male employee of Teddy Smith Logging of Tennessee was fatally injured. A mechanical skidder was pulling an un-topped tree from a gully when the branches end of the tree slid to the side striking down a small ash tree which hit and killed a feller working on the hillside. [The skidder was operating too close to the feller.]	a. Feller/Faller b. Skidding/machine area* c. Struck by falling tree++ d. Felling a tree e. Procedural f. Human (contact: a tree)

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<u>Standards/Citation Information</u> a. Total number of citations issued: 1 b. Number of citations issued related to the event: 1 –1910.266(f)(2)(vii) (machine operated too close to other employees)	
13 (Region III) (Federal) <u>Inspection Information</u> Insp. No: 116231481 Scope: Complete LEP: No	<p>On December 11, 1995, a 32-year-old male employee of Sayre logging Company of West Virginia was fatally injured when he was struck by a dislodged tree. The employee had cut one oak tree that fell to the ground. The second oak hit a small sugar maple breaking it; both trees became lodged in a larger sugar maple. While the employee (the victim) was talking with another employee, the smaller sugar maple fell to the ground. The victim decided to delimb and top the previously felled oak tree which was under the lodged oak. While the victim was topping the felled oak tree, the lodged oak tree fell striking the victim.</p> <hr/> <u>Standards/Citation Information</u> a. Total number of citations issued: 5 b. Number of citations issued related to the event: 2 ✓–1910.266(h)(1)(vi) (failure to fell, remove or avoid danger trees) ✓–1910.266(i)(3)(iii) (employer failed to train employees)	a. Feller/Faller b. Limbing/bucking area (Cutting, felling area)** c. Struck by dislodged tree+ d. Limbing/Bucking: Topping a felled tree e. Procedural f. Human (contact: a tree)

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<p>14</p> <p>(Region II) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 114090475</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On December 11, 1995, a 59-year-old male employee of Baldwin's Forest Products, Inc., of New York was fatally injured. The employee was cutting a tree when it became lodged in another tree. The employee moved about a tree length away and began cutting a second tree. He had his back to the first tree when it became dislodged, hitting a dead tree. The dead tree fell on the employee.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 5</p> <p>b. Number of citations issued related to the event: 2</p> <p> -1910.266(h)(1)(vi) (improper felling technique)</p> <p> -1910.266(i)(10) (no certification of training)</p>	<p>a. Feller/Faller</p> <p>b. Cutting, felling area*</p> <p>c. Struck by falling dead or danger tree+</p> <p>d. Felling a tree</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>
<p>15</p> <p>(Region IV) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 116442005</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>At approximately 8:30 a.m. on December 21, 1995, a 62-year-old male employee of Warrior International, Inc. of Alabama was injured by a tree he was felling, and later died, December 22. The employee was cutting down a sycamore tree (approximately 16 inches at the base and 40-50 feet tall) on a hillside adjacent to a small water pond when a portion of the tree apparently struck him on the head. He was hospitalized on December 21, 1995. He died on December 22, 1995, after being removed from life support.</p>	<p>a. Feller/Faller</p> <p>b. Cutting, felling area*</p> <p>c. Struck by falling tree+</p> <p>d. Felling the tree</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>

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	<u>Standards/Citation Information</u> a. Total number of citations issued: 6 b. Number of citations issued related to the event: 0	
16 (Region VI) (Federal) <u>Inspection Information</u> Insp. No: 109096594 Scope: Partial LEP: No	<p>On December 22, 1995, a 19-year-old male employee of P & S Logging Corporation of Texas was fatally injured when he was struck, pinned and crushed by the tree he was felling.</p> <hr/> <u>Standards/Citation Information</u> a. Total number of citations issued: 3 b. Number of citations issued related to the event: 3 ✓-1910.266(i)(2)(ii) (employer failed to train employees) ✓-1910.266(d)(2)(i) (no first aid kit) ✓-1910.266(d)(2)(ii) (first aid kit did not include all listed items)	a. Feller/Faller b. Cutting, felling area* c. Struck by (pinned by and crushed by) falling tree+ d. Felling the tree e. Procedural f. Human (contact: a tree)

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<p>17</p> <p>(Region X) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 124814542</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>At approximately 9:00 a.m. on January 3, 1996, a 26-year-old male employee of Don Whitaker Logging & Hauling, Inc. of Oregon was fatally injured by a falling tree. A four-man crew was setting chokers on each side of the rigging. The second rigging slinger (the victim) and a choker setter, set chokers on three logs and an 80-foot tall standing tree on the west side of the rigging. They then walked over to the east side of the rigging where the hook tender and the first rigging slinger were setting chokers. The victim blew three whistles for the yarder operator to haul in the turn. When the carriage began to travel uphill, the chokers came taunt on the standing tree and a log that pulled up behind it, caused the tree to fall straight across the main line and haul back lines 31 feet away. The top 49-foot section of the tree that fell over the side of the lines struck the victim who was standing near by. He died at the scene.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 2</p> <p>b. Number of citations issued related to the event: 2</p> <p> –437-006-0015 (no written safety and health program)</p> <p> –437-006-0405(8) (employee not in clear while rigging was moving)</p>	<p>a. Machine/Equipment Operator: Yarding Machine: Rigging Slinger</p> <p>b. Yarding operations area**</p> <p>c. Struck by tree knocked down by pulled log+</p> <p>d. Waiting for process: Watching a turn of logs come in</p> <p>e. Procedural</p> <p>f. Human (contact: tree)</p>

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<p>18</p> <p>(Region V) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 121913289</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On January 22, 1996, a 18-year-old male employee of Stutzman Lumber of Ohio was fatally injured by a tree that became dislodged. The victim was cutting a line of trees when one tree hung up in another tree. He was instructed to leave any tree that was not down on the ground for the bull dozer operator to get down. Before proceeding, the victim cut the tree down with the lodged tree in it. The lodged tree fell, striking the victim and landing on his windpipe. He was found dead. He died of asphyxiation; his neck was not broken.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 2 b. Number of citations issued related to the event: 0</p>	<p>a. Feller/Faller b. Cutting, felling area* c. Struck by dislodged tree+ d. Felling a tree e. Procedural f. Human (contact: a tree)</p>

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<p>19</p> <p>(Region III) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 126630276</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>At approximately 10:09 a.m. on January 25, 1996, a 48-year-old male employee of Mcdaniel Timber of Virginia was fatally injured. The victim and his partner were felling a 35-inch by 50-foot white oak tree. They had notched and back cut the tree and were waiting for a skidder to come and push the tree over safely. They heard a crack and moved away from the tree. The victim moved uphill when a second crack was heard and the tree began to fall in his direction. When he attempted to escape the falling tree, he tripped over previously cut limbs or underbrush and fell on his face in the snow, where he was struck by the falling tree at a place where the forked trunk was 10" in diameter. He sustained a fractured upper left arm, a fractured left upper thigh and head trauma on the right side. He died immediately.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 5</p> <p>b. Number of citations issued related to the event: 0</p>	<p>a. Feller/Faller b. Cutting, felling area** c. Struck by falling tree+ d. Felling the tree e. Procedural f. Human (contact: a tree)</p>

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<p>20</p> <p>(Region IV) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 105985253</p> <p>Scope: Complete</p> <p>LEP: Yes</p>	<p>At approximately 2:30 p.m. on January 31, 1996, a 32-year-old male employee of Boykin Equipment, Llc of Alabama was fatally injured by a tree he was felling. The victim was cutting a large pine tree down with a chain saw. Before felling the tree, he yelled to his fellow employees that a tree would be falling in their direction, allowing them time to move to a safe location. The victim proceeded to fell the pine tree. As the tree was falling, it struck a standing tree, causing the pine tree to kick back striking the victim in the chest.</p> <p>[The victim did not retreat to a safe location as the tree was falling.]</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 14</p> <p>b. Number of citations issued related to the event: 14</p> <ul style="list-style-type: none"> ✓-1910.266(d)(1)(iv) (no chain saw leg protection) ✓-1910.266(d)(1)(v) (no foot protection) ✓-1910.266(d)(1)(vi) (no head protection) ✓-1910.266(d)(1)(vii)(A) (no eye protection) ✓-1910.266(f)(3)(viii)(C) (no rearward visibility) ✓-1910.266(f)(3)(xiii) (no deflectors) ✓-1910.266(f)(6) (no exhaust pipes) ✓-1910.266(h)(2)(vi) (improper felling technique) ✓-1910.266(i)(1) (employer failed to train employees) ✓-1904.8 (employer failed to report fatality) ✓-1910.266(i)(7)(i) (no first aid/CPR training) ✓-1910.1200(e)(1) (no written hazard communication program) ✓-1910.1200(g)(8) (no safety data sheets) ✓-1910.1200(h) (employer failed to provide effective information and training) 	<p>a. Feller/Faller</p> <p>b. Cutting, felling area**</p> <p>c. Struck by tree kick back+</p> <p>d. Felling the tree</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>

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<p>21</p> <p>(Region III) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 126635986</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On February 14, 1996, a 59-year-old male employee of Raymond Robinson, Inc., of Virginia was run over by a skidder. The victim was operating a Tree Farmer skidder when a limb hit the hydraulic line causing air to get inside and disabling the cabling system. The owner told the victim to park the Tree Farmer skidder and use the Clark skidder. After lunch, the victim asked another employee for assistance in getting the Tree Farmer skidder cranked so he could move it further away from the logging road. After the skidder was cranked, the other employee returned to the log yard where he worked. The victim drove the Clark skidder into the woods and brought back several logs to the log yard. After unhooking the logs, the victim returned to where the Tree Farmer skidder was located. About 20 minutes later, the other employee looked toward the woods and noticed that the Clark skidder was still parked where he had seen it earlier. The employee walked to the Clark skidder, found it still running, and noticed the Tree Farmer skidder located approximately 90 feet west of the Clark skidder. The Tree Farmer skidder was wedged in some brush. At this time he also noticed the victim laying face down, he had apparently been run over by the skidder.</p>	<p>a. Machine/Equipment Operator: Skidder/Skidder b. Skidding machine area* c. Run over by skidder+ d. Unknown e. Procedural f. Human (contact: equipment)</p>

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	<u>Standards/Citation Information</u> a. Total number of citations issued: 14 b. Number of citations issued related to the event: 0	
22 (Region III) (Federal) <u>Inspection Information</u> Insp. No: 116159591 Scope: Complete LEP: No	<p>On February 19, 1996, a 41-year-old male employee of L. E. Chubb Logging, Inc., of Pennsylvania was fatally injured while trimming a tree. The employee was cutting timber in a forest. He made a felling cut in a 28-inch poplar tree and left it freestanding while he went over to another red oak tree that was already felled and proceeded to trim it. Suddenly, the poplar tree fell, striking the employee behind the neck and pinching him between the two trees and causing death by asphyxiation.</p> <hr/> <u>Standards/Citation Information</u> a. Total number of citations issued: 2 b. Number of citations issued related to the event: 2 ✓-1910.266(h)(1)(vi) (failure to fell, remove or avoid danger trees) ✓-1910.266(i)(2)(i) (employer failed to train employee)	a. Limber/Bucker (Feller) b. Limbing, bucking area* (Cutting, felling area) c. Struck by falling tree+ d. Limbing a tree e. Procedural f. Human (contact: a tree)

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- ++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>23</p> <p>(Region IV) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 126477397</p> <p>Scope: Partial</p> <p>LEP: Yes</p>	<p>On February 21, 1996, a 39-year-old male employee of H. H. Keziah Logging of South Carolina drowned while logging in a swampy, flooded timber area. The victim, a skidder operator, was hooking up felled trees to cable behind the skidder in water 2-3 feet deep. According to the nearest witness, the victim had hooked up a third log when he slipped and fell face down into the water. The witness got to the victim in 5-8 minutes (due to terrain conditions) and attempted resuscitation/CPR unsuccessfully. The coroner's preliminary report revealed that the victim's death was due to asphyxia from drowning. The victim operated a John Deere Model 548 cable skidder with dual tires on front and rear. He had been doing this type of work approximately 25 years; he was wearing a hard hat when found.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 0</p> <p>b. Number of citations issued related to the event: 0</p>	<p>a. Machine/Equipment Operator: Skidder/Skidder</p> <p>b. Skidding machine area**</p> <p>c. Slipped and fell in water+</p> <p>d. Hooking skidder cable to felled tree</p> <p>e. Procedural</p> <p>f. Human (contact: other)</p>

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>24</p> <p>(Region I) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 124436452</p> <p>Scope: Complete</p> <p>LEP: No</p>	<p>On February 29, 1996, a 52-year-old male employee of Archie Bussino Logging Land Clearing of Vermont was fatally injured while logging when a hung tree dislodged and fell on him.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 6</p> <p>b. Number of citations issued related to the event: 2</p> <p> -1910.266(h)(1)(vi) (failure to fell, remove or avoid danger tree)</p> <p> -1910.266(i)(3)(iii) (employer failed to train employee)</p>	<p>a. Feller/Faller</p> <p>b. Cutting, felling area*</p> <p>c. Struck by dislodged tree+</p> <p>d. Felling a tree</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>25</p> <p>(Region IV) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 018004713</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On March 4, 1996, a 37-year-old male employee of R & M Pulpwood, Inc. of Florida was fatally injured. Three employees, including the victim, were measuring and cutting trees which had already been cut down with chain saws into specific lengths for shipment to a sawmill. A 44-foot high pine tree (with no green vegetation and thin bark) that had not been cut down, stood in the general area where the men were working. Various pieces of equipment, including a skidder and buncher, had been operating near this tree, and there had been several large trees cut down close to this tree. The wind was blowing at about 10-20 miles per hour with an approaching cold front. Employee number two took the end of the tape and placed it at the base of a tree, while employee number one (the victim), with his back to the dead pine tree, started walking along the length of the tree being measured. Employee number three was watching. The dead pine tree fell onto the back and head of employee number one fatally injuring him.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 4</p> <p>b. Number of citations issued related to the event: 4</p> <ul style="list-style-type: none"> ✓-1910.266(h)(1)(vi) (failure to fell, remove or avoid danger trees) ✓-1910.266(i)(1) (employer failed to train employees) ✓-1910.266(d)(1)(iv) (no chain saw leg protection) ✓-1910.266(d)(1)(vii) (no eye/face protection) 	<p>a. Limber/Bucker</p> <p>b. Limbing, bucking area**</p> <p>c. Struck by falling dead or danger tree+</p> <p>d. Limbing/Bucking: Measuring a felled tree</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>

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<p>26</p> <p>(Region IV) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 106103831</p> <p>Scope: Complete</p> <p>LEP: Yes</p>	<p>On March 6, 1996, a 27-year-old male employee of Tyler Grace Logging & Pulpwood of Alabama was fatally injured when a lodged tree became dislodged. A crew was cutting trees which had been damaged by hurricane Opal. The procedure was that when a tree became lodged, the feller would advise the skidder operator and he would use his machine to take it down. In this particular instance, the tree was lodged in another pine tree that was not going to be cut. After being advised of the lodged tree, the skidder operator (the victim) got off his skidder and was pulling the skidder cable to tie the tree down and fell it. The tree came loose and the victim ran in the direction of the falling tree.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 1 b. Number of citations issued related to the event: 0</p>	<p>a. Machine/Equipment Operator: Skidder/Skidder b. Cutting, felling area** c. Struck by dislodged tree+ d. Operating machinery: Pulling skidder cable to tie down a lodged tree e. Procedural f. Other (contact: a tree)</p>

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<p>27</p> <p>(Region IV) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 107097917</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>At approximately 7:30 a.m. on March 19, 1996, a 55-year-old employee of Tucker Timber Harvesting of Mississippi was severely injured when he was struck in the head by the butt of a tree that had been topped. The victim was working at the pre ramp area on a logging site delimiting trees when his chain saw became stuck in one of the trees he was topping. The skidder operator had pulled more trees to the area and was turning the skidder around when the victim motioned for help. While moving the skidder into position at the direction of the victim, the skidder tire struck the butt of an already topped tree, causing it to pop up and swing to the side striking the victim on the head below his hard hat. The victim was given first aid treatment at the site and transported to the hospital where he died approximately 15 hours later of his injuries.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 5</p> <p>b. Number of citations issued related to the event: 0</p>	<p>a. Limber/Bucker</p> <p>b. Limbing, bucking area**</p> <p>c. Struck by swinging tree++</p> <p>d. Topping a tree</p> <p>e. Procedural</p> <p>f. Human (contact: a felled tree)</p>

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<p>28</p> <p>(Region X) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 126687201</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>At approximately 10:00 a.m. on March 26, 1996, a 23-year-old male employee of Flansberg & Son, Inc. of Oregon was working as a choker setter using an Eagle III motorized carriage and 30 feet, 3/4 inch chokers. The carriage was returned to the location when the chokers were being removed to be preset. After the carriage stopped and was clamped, the victim approached from in front and reached to the side for the chokers. At this time the haul back that was wrapped around the skyline came unwrapped causing the slack to whip toward the front of the carriage. It was this whip of slack that struck the victim in the head causing his fatal injuries.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 2</p> <p>b. Number of citations issued related to the event: 2</p> <p>✓-437-006-0012(5) (employees not in clear when rigging was moving)</p> <p>✓-437-006-0056(5)(a) (radio control carriage did not have operable warning signal)</p>	<p>a. Machine/Equipment Operator: Yarding Machine: Choker Setter</p> <p>b. Yarding operations area*</p> <p>c. Struck by haul back cable+</p> <p>d. Setting chokers</p> <p>e. Mechanical</p> <p>f. Material (contact: equipment part)</p>

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<p>29</p> <p>(Region VIII) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 122436561</p> <p>Scope: Complete</p> <p>LEP: No</p>	<p>On April 3, 1996, a 31-year-old male employee of Valvo Logging of Montana was fatally injured when a tree that was cut but standing fell over striking him on the head as he was unhooking logs from a log skidding machine.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 10</p> <p>b. Number of citations issued related to the event: 3</p> <p> -1910.266(h)(2)(vi)(and (vii) (improper felling technique)</p> <p> -1910.266(i) (employer failed to train employees)</p> <p> -1910.266(i)(7)(i) (no first aid/CPR training)</p>	<p>a. Machine/Equipment Operator: Yarding Machine</p> <p>b. Yarding operations area*</p> <p>c. Struck by falling tree++</p> <p>d. Operating machinery: Unhooking logs from a skidding machine</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>
<p>30</p> <p>(Region IX) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 120174503</p> <p>Scope: Complete</p> <p>LEP: No</p>	<p>On April 3, 1996, a 27-year-old male employee of R & B Logging of California was fatally injured. The employee was working as a cat skinner for a small logging company. He was driving his bull dozer across the hillside when he drove up on a downed pine tree (log). When the bull dozer was centered on the log, it slid sideways down the log for 40 feet and began rolling over when it came to the end of the log. It rolled over at least six times for approximately 300 feet. The employee was fatally injured when he was ejected from and rolled over by the dozer at about 200 feet.</p>	<p>a. Machine/Equipment Operator: Bull Dozer</p> <p>b. Other: Logging area*</p> <p>c. Thrown from (rolled over by) bull dozer+</p> <p>d. Driving a bull dozer across hillside</p> <p>e. Procedural</p> <p>f. Human (contact: equipment)</p>

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<u>Standards/Citation Information</u> a. Total number of citations issued: 1 b. Number of citations issued related to the event: 1 ✓-6309(h) (failure to use seat belt)	
31 (Region VI) (Federal) <u>Inspection Information</u> Insp. No: 123378812 Scope: Partial LEP: No	<p>On April 8, 1996, a 40-year-old male employee of Edward Keith Jewell Logging of Arkansas received numerous broken bones and a broken neck when he lost control of the log skidder he was operating on a steep incline. The skidder rolled and tumbled approximately 150 feet down the steep hill. The employee was thrown from the skidder and it is believed the skidder rolled over the employee. The employee was pronounced dead at the scene.</p> <hr/> <u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0	a. Machine/Equipment Operator: Skidder/Skidder b. Skidding machine area* c. Thrown from (rolled over by) skidder+ d. Operating a skidder on a steep hill e. Procedural f. Human (contact: equipment)

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<p>32</p> <p>(Region X) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 126687193</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>At approximately 11:15 a.m. on April 11, 1996, a 24-year-old male employee of Keith Dahl Logging, Inc. of Oregon was fatally injured. As the victim stood next to the deck of the under carriage of the log loader, he was struck on the right side by the rotating superstructure and caught between the deck of the under carriage and the counter balance. The operator continued to swing, unaware of the situation, until the victim's body fell out of the area it was trapped in. The victim had such severe injuries that first aid was not possible.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 2</p> <p>b. Number of citations issued related to the event: 2</p> <p>✓-437-006-0260(15) (employee approached pinch point area of machine)</p> <p>✓-437-006-0015 (lack of a written safety and health program)</p>	<p>a. Machine/Equipment Operator: Truck: Driver</p> <p>b. Landing, log yard**</p> <p>c. Struck by (caught between) machine parts++</p> <p>d. Waiting for truck to be loaded with logs</p> <p>e. Procedural</p> <p>f. Human (contact: machinery)</p>

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<p>33</p> <p>(Region X) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 115777278</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>At approximately 10:30 a.m. on April 16, 1996, a 27-year-old male employee of Rick Roberts Cutting, Inc. of Oregon was fatally injured. The feller felled an old growth fir tree and bucked off the butt. He then went to fell more trees while the bucketer started bucking the old growth. He felled a 60-foot cedar while the bucketer was 42 feet away bucking the old growth. He told the bucketer he was going to fell a fir tree which was about 153 ½ feet tall. He faced up the fir tree toward the bucketer, shut his saw off, then yelled to the bucketer, “coming toward you.” The bucketer yelled back, “let it go.” The feller made the back cut and the tree fell striking the bucketer at 118 ½ feet where he was standing on the old growth log. He was found dead at the scene by the feller a few minutes later.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 3</p> <p>b. Number of citations issued related to the event: 2</p> <p>✓-437-006-0355(1) (employees working too close together)</p> <p>✓-437-006-0355(16) (undercut made in tree while other employees were in the work area)</p>	<p>a. Limber/Bucker</p> <p>b. Limbing, bucking area**</p> <p>c. Struck by falling tree++</p> <p>d. Bucking a tree</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>

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<p>34</p> <p>(Region IV) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 300255437</p> <p>Scope: Complete</p> <p>LEP: Yes</p>	<p>On April 17, 1996, a 38-year-old male employee of Michael A. Martin Dba Martin's Logging of North Carolina was fatally injured. The victim was working alone manually felling trees when he was struck in the head by a tree (approximately seven inches in diameter) that had been lodged in a larger pine tree he was cutting down. Evidence indicated that the 7-inch tree rolled off the larger tree striking the victim.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 26</p> <p>b. Number of citations issued related to the event: 7</p> <ul style="list-style-type: none"> ✓-1910.266(h)(1)(vi) (employee working underneath lodged tree) ✓-1910.266(h)(2)(v) and (vi) (improper felling technique) ✓-1910.266(d)(6)(iii) (all employees not within visual or audible contact) ✓-1910.266(i)(1) (employer failed to train employees) ✓-1910.266(d)(1)(vi) (no head protection) ✓-1910.266(d)(6)(iv) (employer did not account for each employee at end of work shift) ✓-1910.266(i)(10) (no certification record of training) -1904.8 (employer failed to report fatality) 	<p>a. Feller/Faller</p> <p>b. Cutting, felling area*</p> <p>c. Struck by dislodged tree+</p> <p>d. Felling a tree</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>

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- ++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>35</p> <p>(Region III) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 116232760</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On April 17, 1996, the 52-year-old male owner of Circle H. Enterprises, Inc. of West Virginia was fatally injured while delivering a tractor trailer load of logs to a lumber company. The load was pulled onto the log yard. The victim (the owner of Circle H. Enterprises) proceeded to remove the nylon straps securing the logs. The logs were stacked higher than the side rails at the passenger side of the trailer and the nylon straps were thrown over the top of the logs to the driver side where they were to be rolled up on the side of the trailer. As the victim was rolling up the strap, a log rolled off the top of the trailer and struck the victim. The victim was the individual that loaded the logs on the trailer.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 0</p> <p>b. Number of citations issued related to the event: 0</p>	<p>a. Machine/Equipment Operator: Log Truck: Driver</p> <p>b. Landing, log yard*</p> <p>c. Struck by falling log+</p> <p>d. Loading/Unloading: Unbinding a load of logs</p> <p>e. Procedural</p> <p>f. Human (contact: log)</p>

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>36</p> <p>(Region X) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 107243453</p> <p>Scope: Complete</p> <p>LEP: Yes</p>	<p>On May 3, 1996, a 24-year-old male employee of Millard Cutting Company of Idaho was fatally struck by the 34-inch diameter cedar tree he was felling when the tree barber-chaired. The victim was attempting to recut a face cut on the opposite side of the tree from the original face cut, as the tree had sat back on the stump, when the tree barber-chaired approximately 21 feet up the trunk, twisted and fell in the direction of the original face cut. The employee had not cleared a safe escape route at a diagonal away from the intended fall, so he apparently ran directly back from the original face cut.</p> <p>[The victim was a new employee and the employer had not trained the employee on their logging practices nor closely supervised the employee until judged competent.]</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 2</p> <p>b. Number of citations issued related to the event: 2</p> <p>✓-1910.266(i)(5)(iv) (employer failed to assure employees could safely perform tasks)</p> <p>✓-1910.266(i)(6) (employee did not work under close supervision of a designated person)</p>	<p>a. Feller/Faller</p> <p>b. Cutting, felling area*</p> <p>c. Struck by barber-chair tree+</p> <p>d. Recutting a face cut</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>37</p> <p>(Region IV) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 109675801</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On May 13, 1996, a 54-year-old employee of Posey Logging L.L.C. of Alabama was fatally injured. Employees of Posey Logging were cutting timber when the tree being cut fell into another tree that had been partially uprooted by a storm and lodged against two other trees. The lodged tree fell, striking the victim on the head.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 6</p> <p>b. Number of citations issued related to the event: 4</p> <p>✓-1910(h)(1)(iv) (employee approached closer than two tree lengths to felling operations)</p> <p>✓-1910.266(h)(1)(vi) (danger tree not felled, removed or avoided)</p> <p>✓-1910.266(i)(1) (employer failed to train employees)</p> <p>✓-1910.266(d)(1)(vi) (no head protection/hard hat)</p>	<p>a. Feller/Faller</p> <p>b. Cutting, felling area**</p> <p>c. Struck by dislodged tree+</p> <p>d. Felling a tree</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>
<p>38</p> <p>(Region III) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 116501586</p> <p>Scope: Complete</p> <p>LEP: No</p>	<p>On May 23, 1996, a 25-year-old male employee of David Berry D.b.a. David Berry Trucking of West Virginia was fatally injured. The deceased employee was within 30 feet of a 50-foot tree being cut by another company. The tree fell into another tree and became lodged causing a limb to fall, fatally striking the deceased.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 9</p> <p>b. Number of citations issued related to the event: 2</p> <p>-1910.266(h)(1)(iv) (employee approached closer than two tree lengths to felling operations)</p> <p>-1910.266(i)(3) (employer failed to train employees)</p>	<p>a. Unknown</p> <p>b. Cutting, felling area**</p> <p>c. Struck by falling tree limb++</p> <p>d. Unknown</p> <p>e. Procedural</p> <p>f. Human (contact: a tree limb)</p>

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- ++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>39</p> <p>(Region X) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 300201530</p> <p>Scope: Complete</p> <p>LEP: No</p>	<p>On June 3, 1996, a 32-year-old male employee of Pack Sack Log Cutting of Idaho was killed by a falling tree. Three workers (a bull dozer operator, a tree bucker/delimiter, and a tree feller) were pioneering a road by cutting trees in a forested area. They were working within 100 feet (or one tree length) of each other at a landing area. The tree feller cut down two trees and was cutting a third tree when the bucker/delimiter (the victim) started delimiting the second tree, unbeknownst to the tree feller. The third tree was cut down, fatally striking the tree bucker.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 3</p> <p>b. Number of citations issued related to the event: 3</p> <p>✓-1910.266(d)(6)(i) (adjacent work areas not separated by safe distance)</p> <p>✓-1910.266(d)(6)(ii) (felling operations not spaced two or more tree lengths apart)</p> <p>✓-1910.266(d)(7)(i) (inadequate signaling system)</p>	<p>a. Limber/Bucker</p> <p>b. Limbing, bucking area**</p> <p>c. Struck by falling tree++</p> <p>d. Limbing a tree</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>

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- ++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>40</p> <p>(Region IV) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 300326584</p> <p>Scope: Complete</p> <p>LEP: Yes</p>	<p>At approximately 2:00 p.m. on June 12, 1996, a 25-year-old male employee of Lanier Logging, Inc. of Alabama was seriously injured by a tree limb, and later died, June 17, 1996. The employee was watching a skidder pull two trees to a location where he could top them when a tree limb of one of the trees swung and struck him in the head. The employee was immediately hospitalized; he died on June 17, 1996, during brain surgery.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 2</p> <p>b. Number of citations issued related to the event: 2</p> <p>✓-1910.266(d)(6)(i) (adjacent work areas not separated by safe distance)</p> <p>✓-1910.266(i)(7)(i) (no first aid/CPR training)</p>	<p>a. Limber/Bucker</p> <p>b. limbing, bucking area**</p> <p>c. Struck by swinging tree limb++</p> <p>d. Waiting for process: Watching a skidder operator pull trees to the topping area</p> <p>e. Procedural</p> <p>f. Human (contact: a tree limb)</p>
<p>41</p> <p>(Region IV) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 107096331</p> <p>Scope: Complete</p> <p>LEP: No</p>	<p>On June 17, 1996, a 66-year-old male employee of Jerry Hoop & Sons Logging of Mississippi was fatally injured.</p> <p>[The file provided no description of the incident. The headliner indicated that the victim was struck by a log being swung by a loader.]</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 4</p> <p>b. Number of citations issued related to the event: 0</p>	<p>a. Unknown</p> <p>b. Landing, log yard**</p> <p>c. Struck by a log++</p> <p>d. Unknown</p> <p>e. Procedural</p> <p>f. Human (contact: log)</p>

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>42</p> <p>(Region X) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 115474801</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On June 21, 1996, a 46-year-old male employee of Jim Wytko Logging, Inc. of Washington was fatally injured. The employee was standing on the road of the cold deck, approximately 30 feet from the yarder, when a guyline broke. This caused the yarder tower to separate from its carriage and be pulled in the direction of the turn. The top of the tower turned in the direction of the employee, and one of the guy lines snapped taut, striking the employee in the back of the head.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 0</p> <p>b. Number of citations issued related to the event: 0</p>	<p>a. Unknown</p> <p>b. Landing, log yard**</p> <p>c. Struck by guy line++</p> <p>d. Waiting for other processes to be completed (standing on road of cold deck near yarder)</p> <p>e. Material</p> <p>f. Material (contact: equipment part)</p>
<p>43</p> <p>(Region IV) (Federal)</p> <p><u>Inspection Information</u></p>	<p>At approximately 11:00 a.m. on July 16, 1996, a 48-year-old male employee of Simpkins Logging of Alabama was fatally injured. As the employee (the victim) was cutting the top out of a hardwood tree that had been felled by a three-wheel feller buncher, the feller buncher felled another hardwood tree that fell on the victim.</p>	<p>a. Limber/Bucker</p> <p>b. Limbing, bucking area**</p> <p>c. Struck by a falling tree++</p> <p>d. Limbing/Bucking: Topping a tree</p> <p>e. Procedural</p> <p>f. Human (contact: tree)</p>

Insp. No:
300326642

Scope:
Complete

LEP: Yes

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<u>Standards/Citation Information</u> a. Total number of citations issued: 3 b. Number of citations issued related to the event: 3 ✓-1910.266(d)(6)(ii) (workers felling trees not separated by two tree lengths or more) ✓-1904.8 (failure to report fatality) ✓-1910.1200 (E)(1) (no written hazard communication program)	
44 (Region X) (State) <u>Inspection Information</u> Insp. No: 115346066 Scope: Partial LEP: No	On July 16, 1996 , a 26-year-old male employee of Weyerhaeuser Company of Washington was fatally injured. The #2 rigging slinger and #1 choker man was struck by a 3' x 6' x 25" maple chunk thrown by moving lines or rigging while pulling a tagged-out turn of logs. <u>Standards/Citation Information</u> a. Total number of citations issued: 1 b. Number of citations issued related to the event: 1 ✓-54-555(1) (worker not positioned in the clear during winching)	a. Machine/Equipment Operator: Yarding Machine: Choker Setter b. Yarding operations area** c. Struck by piece of wood (jill poke)++ d. Watching the choked log being pulled e. Procedural f. Human (contact: piece of wood)
45 (Region III) (State) <u>Inspection Information</u>	On July 23, 1996 , a 45-year-old male employee of T & S Renewable Resources, Inc., of Virginia was performing maintenance on a stalled D4H Caterpillar dozer when the dozer drifted backward, catching the victim's clothing in the cleats of the track. This resulted in fatal crushing injuries to the victim.	a. Machine/Equipment Operator: Bull Dozer b. Other: Unknown* c. Crushed by dozer+ d. Operating machinery: Performing maintenance e. Mechanical (brakes) f. Mechanical (contact: machine: dozer)

Insp. No:
125433029

Scope:
Complete

LEP: No

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<u>Standards/Citation Information</u> a. Total number of citations issued: 11 b. Number of citations issued related to the event: 2 –1910.252(f)(7)(i) (defective brake on machinery) –1910.266(i)(3)(vi) (employer failed to train employees)	
46 (Region X) (State) <u>Inspection Information</u> Insp. No: 115235590 Scope: Partial LEP: No	<p>At approximately 7:00 a.m. on July 24, 1996, a 65-year-old male employee of Gwt, Inc. of Washington was fatally injured while operating a 1976 Peter Bilt logging truck. The victim had picked up his first load of logs from the loading site. While descending a 10 percent grade, he lost control of the truck as he attempted to make a right-hand curve. The vehicle's tire tracks were in an arch indicating that the vehicle went into a critical speed scuff or yaw coming into the curve (believed to be from brakes being out of adjustment). In the middle of the curve, the vehicle tipped over onto the driver's side at the east edge of the roadway causing extensive damage to the driver's side of the cab and driver's compartment, pinning the driver into the cab by the steering wheel. He was pronounced dead at the scene.</p> <hr/> <u>Standards/Citation Information</u> a. Total number of citations issued: 2 b. Number of citations issued related to the event: 2 ✓–296-54-567(18) (failure to use seat belt) ✓–296-54-569(1) (defective brakes on vehicle)	a. Machine/Equipment Operator: Truck: Driver b. Logging road* c. Crashed: Pinned (crushed) between steering wheel and cab+ d. Driving truck e. Mechanical (brakes) f. Mechanical (contact: vehicle)

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>47</p> <p>(Region X) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 124819137</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>At approximately 9:30 a.m. on July 26, 1996, a 46-year-old male employee of Michael J. Bruer of Oregon was fatally injured by a log. The victim was bucking a felled tree when a previously felled and bucked log rolled down a 40-degree slope striking him from behind. The victim was knocked to the ground along side other logs, and the fir log (39 inches in diameter and 35 feet long) rolled on top of him, pinning him underneath and to another log. A co-worker found the victim after hearing his power saw idling and received no response when hailed. The co-worker checked for vital signs, found none, and called for assistance.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 0</p> <p>b. Number of citations issued related to the event: 0</p>	<p>a. Limber/Bucker</p> <p>b. Limbing, bucking area*</p> <p>c. Struck by rolling log (pinned between logs)++</p> <p>d. Bucking a felled tree</p> <p>e. Procedural</p> <p>f. Human (contact: a log)</p>

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<p>48</p> <p>(Region IV) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 122239213</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>At approximately 12:25 p.m. on July 26, 1996, a 31-year-old male employee of A. W. Herndon Land Timber Development of Georgia was fatally injured. A logging crew was working on a hardwood timber track harvesting oak, cherry, hickory and gum, and loading the limbed trees into one of two log trailers that were sitting at the ramp. The log trailer that was attached to a Mack truck was almost fully loaded by the knuckle boom log loader operator when a 43-foot long limbed gum tree fell between the two log trailers parked about 40 inches apart. This gum tree struck the victim, the truck driver, and crushed him.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 3</p> <p>b. Number of citations issued related to the event: 3</p> <p>✓-1910.266(h)(6)(ii) (victim too close to loading operation)</p> <p>✓-1910.266(h)(6)(iv) (loaded logs on truck not piled in orderly secure manner)</p> <p>-1910.266(i)(10) (no training certification)</p>	<p>a. Machine/Equipment Operator: Truck: Driver</p> <p>b. Log loading area**</p> <p>c. Struck by (crushed by) elevated tree++</p> <p>d. Waiting for process: Standing between trailers being loaded with trees</p> <p>e. Procedural</p> <p>f. Human (contact: a log)</p>

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- ++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>49</p> <p>(Region V) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 300602935</p> <p>Scope: Complete</p> <p>LEP: No</p>	<p>On July 29, 1996, a 35-year-old male employee of Falling Oaks Timber Co., Inc. of Illinois died after being struck on the head by a dead tree limb. The employee was felling trees with a chain saw. He was wearing a hard hat, mesh screen for eye protection, steel-toed shoes, blue jeans and no shirt. As he felled a large diameter tree, the branches became entangled in a tree about 12' away, dislodging a large dead tree branch that fell on the victim. The victim had retreated away from the falling tree and did not see the large tree branch that fell on his head. His hard hat was knocked off. He was pronounced dead at the hospital.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 4</p> <p>b. Number of citations issued related to the event: 3</p> <ul style="list-style-type: none"> ✓ -1904.8(a) (failure to report fatality) ✓ -1910.266(i)(1) (employer failed to train employees) ✓ -1910.266(i)(7)(i) (no first aid training) 	<p>a. Feller/Faller</p> <p>b. Cutting, felling area*</p> <p>c. Struck by falling dead or danger tree limb+</p> <p>d. Felling a tree</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>

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- + The action that caused the victim's death resulted from tasks the victim was performing or actions the victim failed to take that caused his death, e.g., the victim was fatally struck by the tree he was felling or the victim failed to remove a standing danger tree before felling a near by tree.
- ++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>50</p> <p>(Region IV) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 126492610</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On July 30, 1996, a 54-year-old male employee of James Otis Young of South Carolina died after falling. While stacking short logs, the victim complained of being "hot around head." He rested for five minutes but fell when he tried to walk, impaling his throat on a branch stud to a depth of 4 1/2". He died after pulling himself off the stud.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 3 b. Number of citations issued related to the event: 0</p>	<p>a. Other: Logger b. Log loading area** c. Other: Collapsed, impaled throat on branch stud+ d. Stacking short logs e. Other (medical) f. Other (medical) (Contact: other)</p>
<p>51</p> <p>(Region IX) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 111968723</p> <p>Scope: Complete</p> <p>LEP: No</p>	<p>At approximately 11:45 a.m. on July 30, 1996, a 18-year-old male employee of Daryle Smeltzley of California suffered fatal head injuries when he was struck by a falling tree. The victim was limbing and bucking a tree on a steep side hill when he was struck by a tree felled by another person located on a side hill from him and down in a brushy gully.</p> <p>[The faller and the buckler were working too close together and the faller did not know where the buckler was. The buckler (the victim) had taken off one day from another logging job to help his friend, the faller, fall timber on a small logging site for a property owner.]</p>	<p>a. Limber/Bucker b. Limbing, bucking area** c. Struck by falling tree++ d. Limbing and bucking a tree e. Procedural f. Human (contact: a tree)</p>

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<u>Standards/Citation Information</u> a. Total number of citations issued: 3 b. Number of citations issued related to the event: 3 ✓-3203(a) (no injury/illness prevention program) ✓-6275(c) (head timber faller did not stay informed of other employee's work location) ✓-6275(a) (timber fallers were not spaced so they would not endanger others)	
52 (Region IV) (Federal) <u>Inspection Information</u> Insp. No: 300326709 Scope: Partial LEP: Yes	At approximately 12:00 p.m. on April 26, 1996, a 44-year-old employee of Dixon Burpo Logging of Alabama was severely injured when a log struck him on the head. He died on July 31, 1996 . The employee was guiding a log that was being winched onto a log truck by the owner of the company. The employee was positioned below the log he was guiding. The log came loose from the winch striking the employee on his hard hat. The victim was immediately hospitalized on April 26, 1996; he died on July 31, 1996. <u>Standards/Citation Information</u> a. Total number of citations issued: 2 b. Number of citations issued related to the event: 2 ✓-1910.266(h)(6)(v) (log not positioned to prevent slippage during handling) ✓-1904.8 (failure to report fatality)	a. Machine/Equipment Operator: Log Loader b. Log loading area** c. Struck by elevated log++ d. Guiding log being winched onto log truck e. Procedural f. Human (contact: a log)

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- ++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
53 (Region III) (State) <u>Inspection Information</u> Insp. No: 125468678 Scope: Partial LEP: No	<p>At approximately 11:00 a.m. on August 2, 1996, a 34-year-old male employee of L. E. Martin Iii Logging of Virginia was fatally injured. The employee was struck on the head and neck area of the body by the top of a “danger tree” that became dislodged when it was struck by another falling “danger tree.” The force of the blow resulted in the death of the victim.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 19</p> <p>b. Number of citations issued related to the event: 3</p> <ul style="list-style-type: none"> -1910.266(h)(1)(iv) (employee approached closer than two tree lengths to felling operations) -1910.266(h)(1)(vi) (danger trees not felled, removed or avoided) -1910.266(i)(1) (employer failed to train employees) 	<p>a. Feller/Faller</p> <p>b. Cutting, felling area*</p> <p>c. Struck by falling danger tree+</p> <p>d. Felling a danger tree</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>
54 (Region X) (State) <u>Inspection Information</u> Insp. No: 115409948 Scope: Partial LEP: No	<p>On August 2, 1996, the 46-year-old male owner of Ronald W. Broadfoot D.b.a. Broadfoot of Washington was fatally injured while operating a track skidder. As the owner was backing the skidder up a narrow road to grapple a log, it is believed that the skidder tracks picked up a small piece of wood, threw it back and impaled the owner. The skidder then rolled approximately 50 feet downhill, throwing the owner from it.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 0</p> <p>b. Number of citations issued related to the event: 0</p>	<p>a. Machine/Equipment Operator: Skidder/Skidder (Owner)</p> <p>b. Skidding machine area*</p> <p>c. Struck by (impaled by) piece of wood (jill poke)+</p> <p>d. Moving logs with a skidder</p> <p>e. Procedural</p> <p>f. Human (contact: piece of wood)</p>

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>55</p> <p>(Region X) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 300201969</p> <p>Scope: Partial</p> <p>LEP: Yes</p>	<p>On August 5, 1996, a 35-year-old male employee of Ed Fackrell Logging, Inc. of Idaho was fatally injured while felling a fir tree. The fir tree was adjacent to a standing dead snag. When the employee finished his back cut, the snag broke off approximately six feet above the ground, striking the employee.</p> <p>[The employer had communicated a policy of avoiding or removing danger trees. The victim apparently misjudged the condition of the snag.]</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 0</p> <p>b. Number of citations issued related to the event: 0</p>	<p>a. Feller/Faller</p> <p>b. Cutting, felling area*</p> <p>c. Struck by falling dead or danger snag tree+</p> <p>d. Felling a tree</p> <p>e. Procedural</p> <p>f. Human (contact: tree)</p>

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>56</p> <p>(Region VI) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 123438517</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On August 14, 1996, a 57-year-old (male) self-employed logger and private contractor of Charles Forga Company of Arkansas was fatally injured by a falling tree. On leaving the work site for the day, the contractor walked by an area where a tree was being cut, the tree fell on the victim crushing him. He was pronounced dead at the scene.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	<p>a. Other: Logger b. Cutting, felling area* c. Struck by (crushed by) falling tree++ d. Leaving the work site e. Procedural f. Human (contact: a tree)</p>
<p>57</p> <p>(Region II) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 300523008</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On July 29, 1996, a 42-year-old male employee of Green Mountain Forest Products, Inc. of New York was seriously injured, and later died, August 1996. The victim was at a remote site. He noticed a leak in a diesel fuel tank of a Total Chip Harvester, Model 30 RXL, SN 1948, and proceeded to repair it without first cleaning out the fuel tank. After applying a first bead of the weld to the seam, the victim put in a new rod and touched the fuel tank seam. The fuel tank exploded spilling the contents onto the ground and onto the victim, igniting the ground and the victim. The victim sustained second and third degree burns over more than 65% of his body. The victim died 15 days later of cardiac arrest resulting from fungal sepsis, an infection from the burns.</p>	<p>a. Machine/Equipment Operator: Chip Harvester b. Landing, log yard* c. Other: Burned+ d. Operating machinery: Repairing fuel tank e. Procedural f. Human (contact: Other)</p>

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<u>Standards/Citation Information</u> a. Total number of citations issued: 4 b. Number of citations issued related to the event: 1 -1910.252(a)(2)(vi)(C) (welding in the presence of explosive atmosphere)	
58 (Region X) (State) <u>Inspection Information</u> Insp. No: 115777302 Scope: Partial LEP: No	At approximately 7:30 a.m. on August 26, 1996 , a 31-year-old male employee of B & S Logging, Inc. of Oregon was fatally injured while using a Cat 320 track log loader to shovel logs on a 20-degree slope side hill. The diagonal, from right front to left rear tracks, was a 45-degree slope. When the employee traveled forward to pick up a log, the right track hit a stump causing the machine to tip over on its left side. The operator's cab landed on a large stump which came through the cab door pinning the operator against the cab wall. The operator expired after being air lifted to the hospital. <hr/> <u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0	a. Machine/Equipment Operator: Shovel Log Loader b. Other: Logging area* c. Pinned between stump and cab wall of log loader+ d. Operating machinery: Shoveling logs with a log loader e. Procedural f. Human (contact: equipment)

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>59</p> <p>(Region III) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 126605484</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On August 27, 1996, a 39-year-old male employee of Victory L.L.C. of Virginia was limbing/topping a tree when the top section kicked back, striking the employee and causing massive abdominal injuries.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 3 b. Number of citations issued related to the event: 0</p>	<p>a. Limber/Bucker b. Limbing, bucking area* c. Struck by felled tree top+ d. Limbing a tree e. Procedural f. Human (contact: a tree)</p>
<p>60</p> <p>(Region IV) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 300258431</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On August 28, 1996, the 52-years-old co-owner of Hodges Logging of North Carolina was fatally injured. The co-owner had been operating a skidder that he turned over to an employee. He left the machine informing the employee that he was going to check the property line on the east side of the track where two trees had been cut earlier and become lodged against other trees. Apparently, one of the trees came loose and fell on the co-owner as he surveyed the area.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	<p>a. Other: Co-owner b. Cutting, felling area* c. Struck by dislodged tree++ d. Checking property line where two previously cut trees were lodged e. Procedural f. Human (contact: a tree)</p>

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>61</p> <p>(Region IV) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 107094880</p> <p>Scope: Complete</p> <p>LEP: No</p>	<p>At approximately 8:15 a.m. on September 11, 1996, a 53-year-old male employee of Hill Logging, Inc. of Mississippi was struck by a pine tree. At the time of the fatal injury, the employee was starting to cut a pine tree down when he stopped to wait for another cut up tree to fall. The employee was struck in the rib cage when the falling tree (approximately 20 inches in diameter, 48 feet tall and several feet from him) hit the ground and kicked back up from a limb sticking out, pushing him into the tree he had been cutting. The impact of the tree caused multiple abdominal and chest injuries.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 8</p> <p>b. Number of citations issued related to the event: 1</p> <p>✓-1910.266(h)(1)(iv) (victim was less than two tree lengths from timber felling operations)</p>	<p>a. Feller/Faller</p> <p>b. Cutting, felling area*</p> <p>c. Struck by tree kick back+</p> <p>d. Waiting for other actions to be completed (was felling a tree when he stopped to wait for another cut up tree to fall)</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>

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<p>62</p> <p>(Region IV) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 300966850</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On September 26, 1996, a 18-year-old male tree trimmer employed with the Carey Locke Logging Co. of Georgia was struck in the head by a dead tree.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 3</p> <p>b. Number of citations issued related to the event: 3</p> <p>--1910.266(h)(1)(vi) (failure to fell, remove or avoid danger tree)</p> <p>--1904.8(a) (failure to report a fatality)</p> <p>✓-1910.266(i-10) (no written certification of training)</p>	<p>a. Limber/Bucker</p> <p>b. Limbing, bucking area*</p> <p>c. Struck by falling dead tree++</p> <p>d. Limbing a tree</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>
<p>63</p> <p>(Region VIII) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 126763408</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>At approximately 9:30 a.m. on September 26, 1996, a 24-year-old male employee of Larry N. Reidhead & Sons Logging of Utah was fatally injured by a log being moved with a log loader. The log was elevated when it broke into two pieces, one of which struck the victim.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 0</p> <p>b. Number of citations issued related to the event: 0</p>	<p>a. Unknown</p> <p>b. Log loading area**</p> <p>c. Struck by elevated log++</p> <p>d. Unknown</p> <p>e. Procedural</p> <p>f. Human (contact: a log)</p>

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**Logging Fatalities Investigated by the
Occupational Safety and Health Administration (OSHA) in FY 1997
(Part 2 of 2)**

(The following logging fatality cases are in chronological order by date of the event, October - September.)

Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p style="text-align: center;">1</p> <p>(Region III) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 116516634</p> <p>Scope: Complete</p> <p>LEP: No</p>	<p>On October 2, 1996, a 42-year-old male employee of R. Petrice Logging of West Virginia was fatally injured when the top of a tree broke off striking him.</p> <hr style="border-top: 1px dotted black;"/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	<p>a. Unknown b. Other: Unknown* c. Struck by tree top+ d. Unknown e. Procedural f. Human (contact: a tree)</p>

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- + The action that caused the victim's death resulted from tasks the victim was performing or actions the victim failed to take that caused his death, e.g., the victim was fatally struck by the tree he was felling or the victim failed to remove a standing danger tree before felling a near by tree.
- ++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

<p>Case Number</p> <p>(Region) (Federal) (State)</p>	<p>Description of Fatal Incident and Standard(s) Cited Related to the Incident</p>	<p>Summary Information:</p> <p>a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident</p>
<p>2</p> <p>(Region IX) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 119762953</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On October 7, 1996, a 24-year-old male employee of Erickson Air-Crane of California was fatally injured. The employer operates a helicopter logging operation at the site of the accident. The helicopter was bringing a turn in and the loader was between the log deck and the chaser safe area, with the tracks pointed toward the drop zone and the boom toward the log deck. The loader operator said he checked and his men were in the safe area. The turn hit the ground and the loader operator saw the chasers run toward the turn. The operator then swung the boom away from the drop zone to clear the long line of the helicopter. He watched the long line clear and started to travel toward the drop zone as he swung the boom toward the drop zone while he checked his men out the right window. The loader operator heard a chaser (Tom) who was on light duty and in the safe zone coiling chokers, yell, so he stopped and started swinging back and looking to see what the yelling was about. The operator was Tom pointing to go the other way, so he started traveling away from the drop zone and while looking back saw feet sticking out from under the track.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 2 b. Number of citations issued related to the event: 0</p>	<p>a. Other: Chaser b. Log loading area** c. Run over by loader++ d. Unknown e. Procedural f. Human (contact: equipment)</p>

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>3</p> <p>(Region X) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 115268633</p> <p>Scope: Partial</p> <p>LEP: Yes</p>	<p>On October 8, 1996, a 56-year-old male employee of M & T Logging, Inc. of Washington was fatally injured. The deceased had undercut and back cut a douglas fir tree, 120-foot high and 19-20 inches in diameter at the butt. The tree was faced up to fall toward the east. The tree fell toward the south when it finally fell. The deceased was found between the felled tree and another standing tree that was eight feet, six inches behind the stump of the felled tree.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 4</p> <p>b. Number of citations issued related to the event: 4</p> <ul style="list-style-type: none"> ✓ -296-54-513 (no written accident prevention program) ✓ -296-54-529(15) (supervisor did not regularly inspect work of the cutting crews to ensure the work was done in a proper and safe manner) ✓ -296-54-529(12) (inadequate undercut and hinges) ✓ -296-54-529(27) (improper back cut) 	<p>a. Feller/Faller</p> <p>b. Cutting, felling area*</p> <p>c. Struck by falling tree+</p> <p>d. Felling the tree</p> <p>e. Procedural</p> <p>f. Human (contact: tree)</p>

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>4</p> <p>(Region X) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 126680156</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On October 18, 1996, a 42-year-old male employee of K & W Timber, Inc. of Oregon was fatally injured. The employee (the victim) was the chaser on a log landing. The operator of the cat log loader stated that he had last seen the victim working over by the log truck that he had just finished loading. The victim was stamping the logs at the truck end of the load. The log loader operator tracked to the north to pick up some logs the log processor had placed in a pile. The loader picked some logs and tracked back to the south and placed the logs. As he was tracking back to the north, he got a glimpse of the victim under his track face down in the mud. The operator immediately spun the cat around and used the thumb of the loader to lift the track off the victim. He died on the landing.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	<p>a. Other: Chaser b. Landing, Log Yard* c. Crushed under tracks+ d. Stamping logs e. Procedural f. Human (contact: equipment)</p>

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<p>5</p> <p>(Region IV) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 300172137</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On October 21, 1996, a 60-year-old male employee of S. L. Miller & Sons Lumber Company of Georgia was fatally injured. A crew of four men, three laborers and a crew leader were assigned to harvest more than 54,000 board feet of timber. One employee, the victim, was loading his truck with a knuckle boom and was unable to load one limbed tree properly. He placed the tree back into the yard. The yard was located on a 20-degree slope, and the victim placed the tree perpendicular to the slope of the mountain side. After securing the load in the truck, the victim exited the cab of the knuckle boom and proceeded to manually limb the tree with a nearby chain saw. While limbing, the tree began to roll down the hill. The tree rolled approximately 12-14 inches, striking the victim and rolling onto his legs and stopping at his hips. The victim received serious injuries and was immediately transported to the local hospital. He later died of additional complications.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 1</p> <p>b. Number of citations issued related to the event: 1 --1910.266(i)(3) (employer failed to train employees)</p>	<p>a. Limber/Bucker (Laborer)</p> <p>b. Landing, log yard*</p> <p>c. Struck by the limbed tree log+</p> <p>d. Limbing the tree</p> <p>e. Procedural</p> <p>f. Human (contact: a log)</p>

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>6</p> <p>(Region IV) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 107097164</p> <p>Scope: Complete</p> <p>LEP: Yes</p>	<p>At approximately 11:00 a.m. on October 22, 1996, a 44-year-old male employee of Harold Harris Logging of Mississippi was fatally injured while attempting to cut pine trees behind a residential area. The employee (the victim) started cutting a tree but did not finish cutting it before going to a second tree. The second tree was within 35 feet of the base of the first cut tree. The victim cut the second tree and was limbing it when the first tree fell across the second tree, hitting the victim with limbs from the upper portion of the tree and causing crushing blows. The victim had been with the company six months. The day of the accident, the wind was at or about 20 mph and gusty. This would have contributed to the tree falling prior to it being cut completely through.</p> <p>[The company does not have any formal training for the employees. The employees are watched by the owner while they work during the first week to see if they can do the job. It was not understood why the victim did not get the skidder driver to pull the tree down before going to the second tree. The Owner said the victim should have had the skidder operator pull the tree over if he thought it would hang up in another tree. The owner was advised that he needed safety training to tell the employees what to do if they believe there will be a hang up.]</p>	<p>a. Limber/Bucker (Feller/Faller) b. Limbing, bucking area* c. Struck by (crushed by) a falling tree+ d. Limbing a tree e. Procedural f. Human (contact: a tree)</p>

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<u>Standards/Citation Information</u> a. Total number of citations issued: 7 b. Number of citations issued related to the event: 0	
7 (Region IV) (Federal) <u>Inspection Information</u> Insp. No: 107097156 Scope: Complete LEP: Yes	<p>On October 23, 1996, a 44-year-old male employee of Jerry Mcgehee Logging of Mississippi was fatally injured. The employee (the victim) was attempting to cut a large oak tree that was next to a dead oak about the same size. When the live oak fell it went beside the dead oak and the spring action caused the dead oak to fall backwards onto the victim who was about 50 feet away from the butt of the tree he had cut. The victim may have been looking down at the saw or the ground when the dead tree fell on him. He told his boss that he did not see the tree coming. This company has new equipment with enclosed skidder doors and uses the hydro saw harvester to cut most of the trees. The employees wear chaps, hard hats, eye glasses, safety boots and gloves. They also have hearing protection available.</p> <p>[This company has all required safety equipment but should have made everyone aware of the dead trees and the problems they can cause during cutting and felling around them. If the employees get effective safety and health training and first aid training they will be up to our standards and should protect the other employees.]</p>	a. Feller/Faller b. Cutting, felling area* c. Struck by falling dead or danger tree+ d. Felling a tree e. Procedural f. Human (contact: a tree)

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<p>9</p> <p>(Region III) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 125470146</p> <p>Scope: Partial</p> <p>LEP: Yes</p>	<p>At approximately 4:33 p.m. on October 31, 1996, a 43-year-old male employee of Collie, Inc. of Virginia was fatally injured. The victim was cutting a tree which had another felled tree lodged in it. When the victim completed his felling cut, the lodged tree fell, crushing him.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 8</p> <p>b. Number of citations issued related to the event: 1 --1910.266(i)(3) (employer failed to train employees)</p>	<p>a. Feller/Faller b. Cutting, felling area* c. Struck by dislodged tree+ d. Felling a tree e. Procedural f. Human (contact: a tree)</p>
<p>10</p> <p>(Region VIII) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 126764729</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>At approximately 3:30 p.m. on November 1, 1996, a 31-year-old male employee of Triple R. Timber Harvesting of Utah was fatally injured when he was struck in the head by a falling tree while logging on Forest Service Land in Utah. The accident occurred because the victim was not where he was supposed to be. Four loggers were each assigned a 'strip' within which they were to remain while felling trees by cutting the trees at the base with a chain saw and allowing them to drop. The strips were spaced far enough apart to maintain safe working distances. The victim strayed from his assigned strip and was working closer to the strip next to him than he was supposed to have been. He was 91 feet from the base of the tree that killed him.</p>	<p>a. Feller/Faller b. Cutting, felling area* c. Struck by falling tree++ d. Felling trees e. Procedural f. Human (contact: a tree)</p>

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	<u>Standards/Citation Information</u> a. Total number of citations issued: 1 b. Number of citations issued related to the event: 1 --1910.266(h)(1)(iv) (employee approached timber felling operation closer than two tree lengths)	
11 (Region III) (State) <u>Inspection Information</u> Insp. No: 125424861 Scope: Partial LEP: No	<p>On November 6, 1996, a 33-year-old male employee of P & L Timber Company of Virginia was fatally injured when the large hemlock tree he was felling struck another tree causing it to kick back, striking him.</p> <hr/> <u>Standards/Citation Information</u> a. Total number of citations issued: 4 b. Number of citations issued related to the event: 0	a. Feller/Faller b. Cutting, felling area* c. Struck by tree kickback+ d. Felling the tree e. Procedural f. Human (contact: a tree)

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<p>12</p> <p>(Region III) (State)</p> <p>(NOTE: This investigation was conducted by Federal OSHA.)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 116432469</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On November 6, 1996, the 36-year-old vice president of Timber Trail Logging, Inc. of Virginia was fatally injured. The President and Vice President (the victim) of Timber Trail Logging were cutting timber from a section of <u>Federal forest land</u> for which they had recently secured a small government logging contract. The victim was attempting to cut away a snag tree (approximately 31 feet tall) that had become wedged beneath a recent, partially felled maple tree (approximately 75 feet tall). When the victim sawed into the snag, the snag prematurely broke allowing the maple to fall. The victim ran in the same direction as the intended felling of the maple tree. He was fatally injured when the top branches of the maple crushed him about the upper torso.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	<p>a. Feller/Faller (Vice President) b. Cutting, felling area* c. Struck by (crushed by) dislodged tree+ d. Felling a snag tree e. Procedural f. Human (contact: a tree)</p>

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>13</p> <p>(Region VI) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 123375735</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On December 4, 1996, a 22-year-old male employee of Robert Darden Logging of Arkansas was fatally injured while felling a 14-inch diameter hardwood tree during a logging operation. The employee (the victim) had made the appropriate under cut on the tree. He then started the back cut two inches above the under cut. About one third of the way through the trunk of the tree, the trunk split upwards about 10 feet and then pivoted upwards striking the victim in the neck and chest area and hurling him 11 feet, resulting in his death at the site. The victim was wearing required personal protective equipment (PPE).</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 2 b. Number of citations issued related to the event: 0</p>	<p>a. Feller/Faller b. Cutting, felling area* c. Struck by (hurled by) barber-chaired tree+ d. Felling the tree e. Procedural f. Human (contact: a tree)</p>

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<p>14</p> <p>(Region IV) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 300326980</p> <p>Scope: Complete</p> <p>LEP: Yes</p>	<p>On December 4, 1996, a 52-year-old male employee of Tombigbee Timber Company of Alabama was fatally injured. A danger tree (a dead oak approximately six inches in diameter at the bottom and 20 feet tall) was not felled, marked or removed. The skidder operator was pulling some logs from trees that had been previously felled. One of the logs hit the danger tree which then fell on a nearby “top-off” man (the victim). The victim received severe head injuries and died approximately 11 hours later of his injuries. The victim was working at a distance less than two tree lengths from the danger tree.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 2</p> <p>b. Number of citations issued related to the event: 2</p> <ul style="list-style-type: none"> ✓ --1910.266(h)(1)(vi) (failure to fell, remove or avoid danger trees) ✓ --1910.266(d)(6)(i) (skidder operation not spaced far enough from limbing operation) 	<p>a. Limber/Bucker</p> <p>b. Limbing, bucking area **</p> <p>c. Struck by falling danger tree++</p> <p>d. Topping a tree</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>

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<p>15</p> <p>(Region VIII) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 123216699</p> <p>Scope: Complete</p> <p>LEP: Yes</p>	<p>At approximately 10:30 a.m. on December 5, 1996, a 37-year-old male employee of Mitchell Logging of Montana was fatally injured when he was struck by a tree. The employee was working alone, beyond eye sight and hearing, and was not found for approximately two hours after the accident.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 12</p> <p>b. Number of citations issued related to the event: 3 --1910.266(h)(2)(vi and vii) (improper felling technique) --1910.266(i) (employer failed to train employees) ✓-1904.8 (failure to report the fatality)</p>	<p>a. Feller/Faller b. Cutting, felling area* c. Struck by falling tree+ d. Felling the tree e. Procedural f. Human (contact: a tree)</p>
<p>16</p> <p>(Region IV) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 300957131</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On December 18, 1996, a 24-year-old male employee of Waldrep Logging, Inc. of Alabama was fatally injured. The employee was pulling a cable from the skidder to hook to a log. He was down the grade from the skidder and the skidder came down the grade striking him.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 4</p> <p>b. Number of citations issued related to the event: 0</p>	<p>a. Machine/Equipment Operator: Skidder/Skidder b. Skidding area* c. Struck by skidder+ d. Pulling skidder cable to hook to log e. Mechanical f. Human (contact: equipment)</p>

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>17</p> <p>(Region V) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 106052038</p> <p>Scope: Complete</p> <p>LEP: No</p>	<p>On December 19, 1996, a 44-year-old male employee of Tom Hageny Forest Products, Inc. of Wisconsin was fatally injured. The victim (the sawyer) had cut a tree that lodged in and amongst two other trees that had grown together, one was dead. The victim cut a second tree perpendicular to the first tree to dislodge the first tree, or he may have intended to fell the second tree at a different angle to miss the lodged tree. The trees were in a triangle after the accident. When the second tree fell, it hit the first tree (the lodged tree) which forced or snapped off the standing dead tree back toward the victim.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 9</p> <p>b. Number of citations issued related to the event: 4</p> <ul style="list-style-type: none"> ✓ --1910.266(h)(1)(vi) (failure to fell, remove or avoid danger trees) ✓ --1910.266(h)(2)(ii) (failure to assess trees for hazards and lean prior to felling) ✓ --1910.266(h)(2)(vi) (improper felling technique) ✓ --1910.266(i)(3)(vi) (employer failed to train employees) 	<p>a. Feller/Faller (Sawyer)</p> <p>b. Cutting, felling area*</p> <p>c. Struck by falling dead or danger tree+</p> <p>d. Felling a tree</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>

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<p>18</p> <p>(Region IV) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 300327079</p> <p>Scope: Complete</p> <p>LEP: Yes</p>	<p>On December 30, 1996, a 39-year-old male employee of Dailey Pulpwood & Logging Company of Alabama was fatally injured. The deceased was cutting a large pine tree down when he ran out of gas. He went to the landing and filled his chain saw with gas and returned to the area where he had been working. He started limbing two trees he had previously felled when the tree he had not finished cutting fell, striking him in the head.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 1</p> <p>b. Number of citations issued related to the event: 0</p>	<p>a. Limber/Bucker (Feller/Faller)</p> <p>b. Limbing, bucking area*</p> <p>c. Struck by falling tree+</p> <p>d. Limbing a tree</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>
<p>19</p> <p>(Region III) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 125462739</p> <p>Scope: Complete</p> <p>LEP: No</p>	<p>On January 27, 1997, a 57-year-old male employee of Hill Creek Construction, Inc. of Virginia was fatally injured when the tree being cut prematurely split and fell on him causing crushing injuries. The victim was engaged in logging operations.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 9</p> <p>b. Number of citations issued related to the event: 3</p> <p>--1910.266(h)(1)(vi) (failure to fell, remove or avoid danger trees)</p> <p>--1910.266(h)(2)(v and vi) (improper felling technique)</p> <p>--1910.266(i)(3)(vi) (employer failed to train employees)</p>	<p>a. Feller/Faller</p> <p>b. Cutting, felling area*</p> <p>c. Struck by (crushed by) falling tree+</p> <p>d. Felling the tree</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>

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<p>20</p> <p>(Region I) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 301486312</p> <p>Scope: Complete</p> <p>LEP: No</p>	<p>On January 29, 1997, a 57-year-old male employee of H. E. Clark Lumber Company Inc. of Vermont was fatally injured when he was hit from behind by a tree that was apparently knocked over by a skidder. He was a logger.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	<p>a. Feller/Faller b. Skidding/machine area** c. Struck by falling tree knocked over by skidder++ d. Felling a tree e. Procedural f. Human (contact: a tree)</p>
<p>22</p> <p>(Region III) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 125469981</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On January 31, 1997, a 29-year-old male employee of Devin Logging of Virginia was fatally injured when he was crushed between the rear end of a logging trailer and a log skidder while he was hooking a tow cable to the trailer.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 2 b. Number of citations issued related to the event: 0</p>	<p>a. Machine/Equipment Operator: Skidder/Skidder b. Landing, log yard* c. Caught between (crushed by) trailer and skidder+ d. Hooking skidder cable to trailer e. Procedural f. Human (contact: equipment)</p>

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<p>23</p> <p>(Region X) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 115243826</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On February 17, 1997, a 49-year-old male employee of Reece Bros Logging Company, Inc. of Washington was fatally injured. The victim, the operator of a 1991 Denis Model D3300TNS log delimeter, was attempting to file the chain on the cut off saw on the head of the delimeter when the boom telescoped out crushing him between the delimeter head and the ground. He suffered fatal chest injuries.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 2</p> <p>b. Number of citations issued related to the event: 2</p> <p>✓ -296-54-515(6) (failure to secure delimeter boom with safety chain)</p> <p>-296-54-507(5) (no accident prevention program)</p>	<p>a. Machine/Equipment Operator: Other: Delimeter</p> <p>b. Landing, log yard*</p> <p>c. Crushed by delimeter head+</p> <p>d. Filing the chain on the delimeter</p> <p>e. Procedural</p> <p>f. Human (contact: equipment)</p>
<p>24</p> <p>(Region IV) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 300265428</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On February 17, 1997, a 42-year-old male employee of Crowder Logging Company of North Carolina was fatally injured. A logging crew was harvesting storm-damaged timber. Most of the timber was on the ground. A skidder was being operated in the area to move the downed trees around so that an employee could get to them to cut the limbs from the top of the trees. One employee (the victim) was using a chain saw to cut the limbs off a downed tree. The victim was bent over with his back to a tree that fell and struck him in the back of the head. The tree that fell had a rotten base and two gouge marks from the blade of the skidder.</p>	<p>a. Limber/Bucker</p> <p>b. Limbing, bucking area**</p> <p>c. Struck by falling dead or danger tree++</p> <p>d. Limbing a tree</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>

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	<u>Standards/Citation Information</u> a. Total number of citations issued: 2 b. Number of citations issued related to the event: 1 ✓ --1910.266(h)(1)(vi) (failure to fell, remove or avoid danger tree)	
25 (Region III) (Federal) <u>Inspection Information</u> Insp. No: 116229550 Scope: Complete LEP: No	<p>On February 26, 1997, a 56-year-old male employee of R & R Logging of West Virginia was fatally injured. When a log truck got stuck, the deceased used a John Deere dozer to pull it up the hill. He then got off the dozer to disconnect the cable from the truck. The dozer apparently vibrated into reverse gear and pinned the deceased between the dozer and the log truck. Both legs were amputated and the deceased was eventually pulled under the dozer tracks.</p> <hr/> <u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0	a. Machine/Equipment Operator: Dozer (Truck Driver) b. Logging road* c. Caught (pinned and crushed) between truck and dozer+ d. Disconnecting dozer cable from truck e. Mechanical f. Mechanical (contact: equipment)

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<p>26</p> <p>(Region III) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 300275971</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On April 1, 1997, a 29-year-old male employee of Weaver Logging of Pennsylvania was fatally injured. The employee (the victim) was using a chain saw to fell trees. The trees were then limbed by the victim and removed by a skidder operator to a holding area. The victim had been felling a red oak, approximately 90 feet high. He made an undercut to guide the fall of the tree and had completed the back cut. The tree twisted and fell approximately 180 degrees from the intended path. The impact of the falling tree or branches from the tree contacted a dead aspen tree (approximately 75' high and 30' away) and caused the aspen to fall across the red oak. The dead aspen fell between the forks of a double stumped tree that the victim had used for his retreat path and as a secured area. The aspen was approximately 20 feet from the felled tree. The employee was wearing a hard hat, however, he suffered blunt force trauma as a result of the falling aspen striking his head. An examination of the aspen determined that the root system had been completely rotted away and the general condition and location of the tree indicated that it should have been removed before attempting to harvest the red oak.</p>	<p>a. Feller/Faller b. Cutting, felling area* c. Struck by falling dead or danger tree+ d. Felling a tree e. Procedural f. Human (contact: a tree)</p>

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	<u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0	
27 (Region III) (State) <u>Inspection Information</u> Insp. No: 126638683 Scope: Partial LEP: No	<p>At approximately 2:30 p.m. on April 3, 1997, a 28-year-old male employee of Joe Chambers, Jr. Logging of Virginia was fatally injured. The victim was in the process of limbing a large oak tree he had just felled. He cut off a limb that was approximately 7' from the tree and measured 30' long and 8" in diameter. He then moved up the remaining limb to saw off a 2-foot long section. The 2-foot section of limb had a 5-foot long, 2-inch diameter limb protruding from it at an approximate angle of 45 degrees. He positioned his chain saw beneath the protruding limb and when the chain saw cut through the 8-inch diameter limb, the weight of the chain saw caused the saw to continue downward toward the victim. As the victim stumbled backward, the saw cut into his inside left thigh, severing the artery. He bled to death.</p> <hr/> <u>Standards/Citation Information</u> a. Total number of citations issued: 16 b. Number of citations issued related to the event: 2 --1910.266(d)(1)(iv) (no cut resistant leg protection) --1910.266(1-7) (no first aid/CPR training)	a. Limber/Bucker b. Limbing, bucking area* c. Other: Cut by chain saw+ d. Limbing a tree e. Procedural f. Human (contact: equipment)

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<p>28</p> <p>(Region IX) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 125507608</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On April 15, 1997, a 43-year-old male employee of High Country Timber, Inc. of California was fatally injured. The employee (victim) was cutting timber on steep terrain on State forest land. He was at the small end of a felled tree using a chain saw when the tree (log) shifted or pivoted, striking the victim and causing fatal internal injuries.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	<p>a. Limber/Bucker b. Limbing, bucking area* c. Struck by felled tree that shifted+ d. Using a chain saw to limb a felled tree e. Procedural f. Human (contact: a tree log)</p>
<p>29</p> <p>(Region IV) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 301031027</p> <p>Scope: Complete</p> <p>LEP: Yes</p>	<p>At approximately 5:00 p.m. on April 30, 1997, a 62-year-old employee of Thomas Fowler Trucking, Inc. of Mississippi was fatally injured while he was attempting to bind a load of logs to his log truck's trailer. The truck was equipped with two wire rope binders, one near the front and the other near the rear of the trailer. The victim would normally bind the load at the front of the trailer first. On this occasion the victim bound the load from the rear of the trailer first. As he bound the load, the force being applied caused the end of one of the logs to be lifted over the front stanchion of the trailer allowing the end of the log to fall to the ground. The log struck the victim on the back causing his head to strike the metal frame of the trailer.</p>	<p>a. Machine/Equipment Operator: Truck: Driver b. Log loading area* c. Struck by falling (elevated) log+ d. Binding a load of logs to a trailer e. Procedural f. Human (contact: a log)</p>

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	<u>Standards/Citation Information</u> a. Total number of citations issued: 1 b. Number of citations issued related to the event: 1 ✓ --1910.266(h)(6)(v) (logs on load not positioned to prevent slippage)	
30 (Region IV) (Federal) <u>Inspection Information</u> Insp. No: 301018826 Scope: Partial LEP: No	At approximately 8:00 a.m. on May 15, 1997 , a 25-year-old male employee of Williston Timber Company, Inc. of Florida was fatally injured in a logging operation. The victim was struck in the head by a piece of timber that broke off the bottom of a water oak tree. The water oak had just been cut by another employee (the foreman) operating a John Deere Feller Buncher that had a 20-inch disc saw felling head. The foreman/operator did not see that the victim/sawyer had come within 75 feet of the equipment. <hr/> <u>Standards/Citation Information</u> a. Total number of citations issued: 3 b. Number of citations issued related to the event: 2 ✓ --1910.266(d)(6)(i) (employees felling trees not spaced far enough apart) --1910.266(i)(10)(i) (no certification of training)	a. Machine/Equipment Operator: Other: Sawyer b. Cutting, felling area* c. Struck by piece of wood++ d. Unknown e. Procedural f. Human (contact: a piece of wood)

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<p>31</p> <p>(Region X) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 300204575</p> <p>Scope: Complete</p> <p>LEP: Yes</p>	<p>On June 2, 1997, a 43-year-old male employee of Jensen Logging of Idaho was fatally injured. While skidding trees on a salvage logging sale, the deceased was struck in the esophagus region by a tree limb which was believed to be caught in the skidder tracks. The skidder was equipped with side and rear screens and deflectors, but was not equipped with a screen for the front of the cab. The limb likely entered through the front of the cab striking the deceased on the neck and causing his esophagus to close due to swelling.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 0</p> <p>b. Number of citations issued related to the event: 0</p>	<p>a. Machine/Equipment Operator: Skidder/Skidder</p> <p>b. Skidding machine area*</p> <p>c. Struck by felled tree limb caught in skidder tracks (jill poke)+</p> <p>d. Skidding trees</p> <p>e. Procedural</p> <p>f. Human (contact: equipment)</p>

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>32</p> <p>(Region III) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 125462903</p> <p>Scope: Complete</p> <p>LEP: No</p>	<p>On June 5, 1997, a 41-year-old male employee of Broughton Logging of Virginia was fatally injured. Three employees were performing timber cutting operations. Two employees were attempting to remove three felled trees using a wire rope hooked to a D4C Caterpillar dozer. One of the three trees measuring 53 feet long and 22 inches in diameter became lodged behind a stump. The dozer was stationary and pressure was being applied to the felled tree. One employee, the victim, was attempting to dislodge the tree by cutting the stump away. He was standing on a 45-slope (approximate) below the stump. As he cut through the stump, it prematurely broke, causing the felled tree to spring downward striking the victim and knocking him a distance of approximately 18 feet where he struck another standing tree. The victim was pronounced dead at the scene.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 10</p> <p>b. Number of citations issued related to the event: 4</p> <ul style="list-style-type: none"> --1910.266(h)(1)(viii) (failure to remain on uphill side of tree) --1910.266(h)(2)(i) (failure to plan and clear retreat path) --1910.266(h)(1)(iii) (yarding machine operated too close to felling operations) --1910.266(i)(3)(iii) (employer failed to train employees) 	<p>a. Limber/Bucker</p> <p>b. Skidding/machine operation area**</p> <p>c. Struck by tree pulled by dozer+</p> <p>d. Cutting a stump to release a felled tree being pulled</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
33 (Region X) (State) <u>Inspection Information</u> Insp. No: 115379919 Scope: Partial LEP: Yes	<p>On June 13, 1997, a 58-year-old male employee of Weyerhaeuser Company & Subsidiaries of Washington was fatally injured when the company vehicle (a pick up truck) he was driving to the job site left the road way, traveled down a steep slope and came to rest along a river bank.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 1 b. Number of citations issued related to the event: 0</p>	a. Machine/Equipment Operator: Truck: Driver b. Logging road* c. Crashed: Injured in truck+ d. Driving a truck e. Procedural f. Human (contact: equipment)
34 (Region IV) (Federal) <u>Inspection Information</u> Insp. No: 300328259 Scope: Partial LEP: Yes	<p>On June 19, 1997, the 55-year-old male owner of A & S Trucking Company of Alabama was fatally injured. The owner/victim was loading logs onto a log truck using a Barko 160 A loader. Apparently, the jib broke loose from the coupling causing the loader to swing the log inside the cab, killing the operator. The cab was not equipped with the required wire mesh.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 1 b. Number of citations issued related to the event: 1 --1910.266(f)(3)(viii) (inadequate operator protective enclosure)</p>	a. Machine/Equipment Operator: Log Loader (Owner) b. Log loading area* c. Struck by elevated log+ d. Loading logs onto log truck e. Mechanical f. Mechanical (contact: equipment)

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>35</p> <p>(Region II) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 300626405</p> <p>Scope: Complete</p> <p>LEP: No</p>	<p>On June 20, 1997, a 18-year-old male employee of O. F. Failing & Sons, Inc. of New York was fatally injured. The employee was cutting down a tree when he was struck by another tree that was apparently knocked down by the tree he was cutting.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 12</p> <p>b. Number of citations issued related to the event: 3</p> <p>✓ --1910.266(i)(2) (failure to train employees) (relates to frequency of training)</p> <p>✓ --1910.266(i)(3) (failure to train employees) (relates to content of training)</p> <p>✓ --1910.266(h)(1)(vi) (failure to fell, remove or avoid danger trees)</p>	<p>a. Feller/Faller</p> <p>b. Cutting, felling area*</p> <p>c. Struck by knocked down tree+</p> <p>d. Felling a tree</p> <p>e. Procedural</p> <p>f. Human (contact: tree)</p>
<p>36</p> <p>(Region X) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 126687391</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>At approximately 12:00 p.m. on July 11, 1997, the 45-year-old male owner of Eugene Allen Townsend of Oregon was fatally injured. The victim was bucking a log when he was struck by a tree being felled by his employee. The employee was felling a 100-foot tree toward the landing on which the victim was bucking a root wad off a log that he had pulled out of the brush with the Clark 667 rubber tired skidder. The victim was found deceased by the timber faller who called for assistance.</p>	<p>a. Limber/Bucker (Owner)</p> <p>b. Limbing, bucking area**</p> <p>c. Struck by falling tree++</p> <p>d. Bucking a log</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>38</p> <p>(Region III) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 116229246</p> <p>Scope: Complete</p> <p>LEP: Yes</p>	<p>On July 29, 1997, a 33-year-old male employee of Grimes Logging of West Virginia was fatally injured. The employee was using a 046-Stihl chainsaw to fell a 38-inch diameter red oak tree. He (the victim) made a 45-degree, nine inch common notch on the southeast side of the tree. When making his back cut, the chainsaw became lodged in the tree. The victim asked the skidder operator to hold the tree in place with the skidder while he retrieved another chainsaw to extract his chainsaw from the tree. While the victim was walking away, the skidder operator saw that the tree was going to fall and shouted to the victim that the tree was coming down. The victim ran toward the southwest and the tree fell in the same path, knocking him down with an eight-inch diameter limb. The victim was found laying face down with the limb across his lower legs and his head next to a rock that measured 34 inches long by 18 inches wide. The red oak was 58' 8" long, 38" in diameter at the stump and 9" in diameter at the top. There was 18" of rotten wood in the center of the tree.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 3</p> <p>b. Number of citations issued related to the event: 3</p> <p>--1910.266(h)(1)(vi) (failure to fell, remove or avoid danger trees)</p> <p>--1910.266(h)(2)(v) (improper undercut)</p> <p>--1910.266(h)(2)(vi) (an improper back cut)</p>	<p>a. Feller/Faller</p> <p>b. Cutting, felling area**</p> <p>c. Struck by falling tree+</p> <p>d. Walking away from a cut up tree</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>39</p> <p>(Region VI) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 301732988</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>At approximately 7:30 a.m. on August 12, 1997, a 30-year-old male employee of Sanford L. Nix, Inc. of Arkansas was severely injured in a rural wooded area. The employee was cutting two previously felled pine trees (14-15 inches in diameter and 50-60 feet tall) into log lengths when another pine tree (24-25 feet away) fell, striking him across the chest and knocking him to the ground between the two pine trees he was cutting. The tree that fell rested on top of the two pine trees that the employee was cutting into logs. The employee sustained crushing injuries to the chest and was transported to the hospital. He was pronounced dead at 9:05 a.m.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 1</p> <p>b. Number of citations issued related to the event: 0</p>	<p>a. Limber/Bucker</p> <p>b. Limbing, bucking area*</p> <p>c. Struck by (crushed by) a falling tree+</p> <p>d. Cutting trees into log lengths</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>

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<p>40</p> <p>(Region III) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 126610633</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On August 15, 1997, a 55-year-old male employee of Connie L. Witcher Logging of Virginia was fatally injured when he was thrown from his skidder and crushed by its rollover system when the skidder overturned.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 0</p> <p>b. Number of citations issued related to the event: 0</p>	<p>a. Machine/Equipment Operator: Skidder/Skidder</p> <p>b. Skidding machine area*</p> <p>c. Thrown from (crushed by) skidder+</p> <p>d. Operating a skidder</p> <p>e. Procedural</p> <p>f. Human (contact: equipment)</p>
<p>41</p> <p>(Region VI) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 300398120</p> <p>Scope: Complete</p> <p>LEP: No</p>	<p>On August 18, 1997, a 60-year-old male employee of D. C. Cloud Logging of Louisiana was fatally injured. The employee felled a 60-foot tree that became lodged in another tree (a support tree) about 30 feet away. While the employee was cutting the support tree, the lodged tree fell striking the employee in the head. The employee was taken to the hospital with weak vital signs and died at 11:49 a.m. on August 18, 1997, of head trauma.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 2</p> <p>b. Number of citations issued related to the event: 2</p> <p>--1910.266(h)(1)(vi) (failure to fell, remove or avoid danger trees)</p> <p>--1904.8 (employer failed to report the fatality)</p>	<p>a. Feller/Faller</p> <p>b. Cutting, felling area*</p> <p>c. Struck by dislodged tree+</p> <p>d. Felling a tree</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>42</p> <p>(Region IV) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 301789590</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On August 19, 1997, a 24-year-old male employee of J & B Logging Timber Company of North Carolina was fatally crushed when the 75-foot oak tree he was manually felling rotated toward him, kicked back and fell on top of him.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	<p>a. Feller/Faller b. Cutting, felling area* c. Struck by (crushed by) falling tree+ d. Felling the tree e. Procedural f. Human (contact: a tree)</p>
<p>43</p> <p>(Region IX) (State)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 125665976</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On September 4, 1997, a 27-year-old male employee of J & K Logging of California was fatally injured. On the day of the injury, the employer was operating a cable yarding system to remove downed timber (logs) from the private lands of a wood products company. The victim was working as a rigging slinger. His job was to attach chokers to logs so they could be moved to a landing and loaded onto logging trucks. A turn of logs (several logs) was being hauled up the hill. One of the logs hit a piece of wood on the ground which dislodged it and caused it to roll down the hill. The victim was struck and fatally injured by the piece of wood.</p>	<p>a. Machine/Equipment Operator: Yarding Machine: Rigging Slinger b. Other: Logging area** c. Struck by piece of wood+ d. Waiting for a turn of logs to be hauled in e. Procedural f. Human (contact: a piece of wood)</p>

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	<u>Standards/Citation Information</u> a. Total number of citations issued: 3 b. Number of citations issued related to the event: 1 –6328(f) (employee was not in the clear during winching of logs)	
44 (Region VIII) (State) <u>Inspection Information</u> Insp. No: 126777358 Scope: Partial LEP: No	At approximately 3:30 p.m. on September 14, 1997 , a 49-year-old male employee of Triple R. Timber Harvesting of Utah was fatally injured. The victim felled a tree (approximately 75 feet tall and 24 inches at the base) onto a dead tree (approximately 70 feet tall). The dead tree was approximately 60 feet from the base of the tree being felled and was oriented parallel to the felled tree. The dead tree fell, striking the victim. The diameter of the dead tree where it struck the victim was six inches. The terrain where the accident occurred was moderate to thickly forest and the ground was slightly sloping. The deceased had more than 30 years of experience in timber harvesting. <u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0	a. Feller/Faller b. Cutting, felling area* c. Struck by falling dead or danger tree+ d. Felling a tree e. Procedural f. Human (contact: a tree)

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Case Number (Region) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>45</p> <p>(Region VI) (Federal)</p> <p><u>Inspection Information</u></p> <p>Insp. No: 300398047</p> <p>Scope: Partial</p> <p>LEP: No</p>	<p>On September 22, 1997, a 28-year-old male truck driver of Clarks Timber Company, Inc. of Louisiana was severely injured when he slipped and fell over the rear of a 210-D loader, hitting his head on slasher equipment below. He was hospitalized and died of his injury on September 25, 1997. The employee had two years of experience as a truck driver/operator with the company.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 2</p> <p>b. Number of citations issued related to the event: 2 --1910.266(i)(3)(ii) (employer failed to train employees) --1904.8 (employer failed to report the fatality)</p>	<p>a. Machine/Equipment Operator: Loader</p> <p>b. Landing, log yard*</p> <p>c. Slipped/fell from elevation+</p> <p>d. Climbing onto equipment</p> <p>e. Procedural</p> <p>f. Human (contact: equipment)</p>

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**Logging Fatalities Investigated by the
Occupational Safety and Health Administration (OSHA) in FY 1996
(Part 2 of 2)**

(The following logging fatality cases are in order by region and state.)

Region I		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
ME (5) (Federal)	<p>On October 23, 1995, a 41-year-old male employee of Hanington Brothers, Inc. of Maine was fatally injured by a skidder. The employee was hauling cut trees to his collection area when he experienced trouble with his shift mechanism on the skidder. He moved the skidder down the road to a grassy area and lowered the blade but did not set the parking brake. He dismounted and got between the wheels on the right side of the skidder and removed a 12"x14" plate from the side of the skidder. The transmission is located behind the plate. Two cables run from the shift lever to the transmission, one for the eight forward gears and one for the four reverse gears. The reverse cable had become defective and the employee apparently tried to maneuver it manually by reaching into the opening behind the removed plate. In doing so, the skidder was placed into a reverse gear and began to back up. The parking brake had not been set and the skidder blade and skidder backed over and crushed the employee.</p>	<p>a. Machine/Equipment Operator: Skidder/Skidder b. Landing, log yard* c. Crushed by skidder+ d. Operating machinery: Repairing the skidder e. Procedural f. Human (contact: equipment)</p>

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Region I		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<u>Standards/Citation Information</u> a. Total number of citations issued: 3 b. Number of citations issued related to the event: 2 ✓-1910.266(i)(3)(ii) (failure to train employee in safe maintenance of machine) ✓--1910.266(g)(3) (operating instructions not available in vehicle)	
NH (11) (Federal)	<p>On December 7, 1995, a 58-year-old male employee of Roger Doyon of New Hampshire was fatally injured when the tree he was felling was caught in another tree, kicked back, striking and crushing him.</p> <hr/> <u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0	a. Feller/Faller b. Cutting, felling area* c. Struck by (crushed by) tree kick back+ d. Felling the tree e. Procedural f. Human (contact: a tree)
VT (24) (State)	<p>On February 29, 1996, a 52-year-old male employee of Archie Bussino Logging Land Clearing of Vermont was fatally injured while logging when a hung tree dislodged and fell on him.</p> <hr/> <u>Standards/Citation Information</u> a. Total number of citations issued: 6 b. Number of citations issued related to the event: 2 -1910.266(h)(1)(vi) (failure to fell, remove or avoid danger trees) -1910.266(i)(3)(iii) (employer failed to train employee)	a. Feller/Faller b. Cutting, felling area* c. Struck by dislodged tree+ d. Felling a tree e. Procedural f. Human (contact: a tree)

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- + The action that caused the victim's death resulted from tasks the victim was performing or actions the victim failed to take that caused his death, e.g., the victim was fatally struck by the tree he was felling or the victim failed to remove a standing danger tree before felling a near by tree.
- ++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Logging Fatalities Investigated by the
Occupational Safety and Health Administration (OSHA) in FY 1996
(Part 2 of 2)

Region II		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
<p>NY</p> <p>(10) (Federal)</p>	<p>On November 29, 1995, a 29-year-old male employee of J. A. Yansick Lumber Co. of New York was fatally injured. The cutter attached the skidder winch cable to the base of the tree to be cut and then made a notch and a back cut. The skidder operator (the victim) was to gently pull back on the base of the tree so that the tree did not roll to the bottom of the embankment. The force created by the falling tree and the angle of the slope caused the skidder to flip over backwards and roll to the bottom of the 100-foot embankment. The skidder operator (the victim) was dead at the scene from massive internal injuries.</p> <hr style="border-top: 1px dotted black;"/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 10</p> <p>b. Number of citations issued related to the event: 2</p> <p style="padding-left: 20px;">-1910.266(f)(2)(iv) (machine not operated within its stability limitations)</p> <p style="padding-left: 20px;">-1910.266(h)(1)(iii) (yarding machine operated within two tree lengths of felling operations)</p>	<p>a. Machine/Equipment Operator: Skidder</p> <p>b. Cutting, felling area**</p> <p>c. Thrown from (rolled over by) skidder+</p> <p>d. Operating the skidder</p> <p>e. Procedural</p> <p>f. Human (contact: equipment)</p>

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Region II		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
NY (14) (Federal)	<p>On December 11, 1995, a 59-year-old male employee of Baldwin's Forest Products, Inc., of New York was fatally injured. The employee was cutting a tree when it became lodged in another tree. The employee moved about a tree length away and began cutting a second tree. He had his back to the first tree when it became dislodged, hitting a dead tree. The dead tree fell on the employee.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 5 b. Number of citations issued related to the event: 2 -1910.266(h)(1)(vi) (improper felling technique) -1910.266(i)(10) (no certification of training)</p>	a. Feller/Faller b. Cutting, felling area* c. Struck by falling dead or danger tree+ d. Felling a tree e. Procedural f. Human (contact: a tree)

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Region II		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
NY (57) (Federal)	<p>On July 29, 1996, a 42-year-old male employee of Green Mountain Forest Products, Inc. of New York was seriously injured, and later died, August 1996. The victim was at a remote site. He noticed a leak in a diesel fuel tank of a Total Chip Harvester, Model 30 RXL, SN 1948, and proceeded to repair it without first cleaning out the fuel tank. After applying a first bead of the weld to the seam, the victim put in a new rod and touched the fuel tank seam. The fuel tank exploded spilling the contents onto the ground and onto the victim, igniting the ground and the victim. The victim sustained second and third degree burns over more than 65% of his body. The victim died 15 days later of cardiac arrest resulting from fungal sepsis, an infection from the burns.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 4 b. Number of citations issued related to the event: 1 -1910.252(a)(2)(vi)(C) (welding in the presence of explosive atmosphere)</p>	a. Machine/Equipment Operator: Chip Harvester b. Landing, log yard* c. Other: Burned+ d. Operating machinery: Repairing fuel tank e. Procedural f. Human (contact: other)

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Logging Fatalities Investigated by the
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(Part 2 of 2)

Region III		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
PA (22) (Federal)	<p>On February 19, 1996, a 41-year-old male employee of L. E. Chubb Logging, Inc., of Pennsylvania was fatally injured while trimming a tree. The employee was cutting timber in a forest. He made a felling cut in a 28-inch poplar tree and left it freestanding while he went over to another red oak tree that was already felled and proceeded to trim it. Suddenly, the poplar tree fell, striking the employee behind the neck and pinching him between the two trees and causing death by asphyxiation.</p> <hr style="border-top: 1px dotted black;"/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 2 b. Number of citations issued related to the event: 2 ✓-1910.266(h)(1)(vi) (failure to fell, remove or avoid danger trees) ✓-1910.266(i)(2)(i) (employer failed to train employee)</p>	a. Limber/Bucker (Feller) b. Limbing, bucking area* (Cutting, felling area) c. Struck by falling tree+ d. Limbing a tree e. Procedural f. Human (contact: a tree)
VA (19) (State)	<p>At approximately 10:09 a.m. on January 25, 1996, a 48-year-old male employee of Mcdaniel Timber of Virginia was fatally injured. The victim and his partner were felling a 35-inch by 50-foot white oak tree. They had notched and back cut the tree and were waiting for a skidder to come and push the tree over safely. They</p>	a. Feller/Faller b. Cutting, felling area** c. Struck by falling tree+ d. Felling the tree e. Procedural f. Human (contact: a tree)

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Region III		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<p>heard a crack and moved away from the tree. The victim moved uphill when a second crack was heard and the tree began to fall in his direction. When he attempted to escape the falling tree, he tripped over previously cut limbs or underbrush and fell on his face in the snow, where he was struck by the falling tree at a place where the forked trunk was 10" in diameter. He sustained a fractured upper left arm, a fractured left upper thigh and head trauma on the right side. He died immediately.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 5 b. Number of citations issued related to the event: 0</p>	
VA (21) (State)	<p>On February 14, 1996, a 59-year-old male employee of Raymond Robinson, Inc., of Virginia was run over by a skidder. The victim was operating a Tree Farmer skidder when a limb hit the hydraulic line causing air to get inside and disabling the cabling system. The owner told the victim to park the Tree Farmer skidder and use the Clark skidder. After lunch, the victim asked another employee for assistance in getting the Tree Farmer skidder cranked so he could move it further away from the logging road. After the skidder was cranked, the other employee returned to the log yard where he worked. The victim drove the Clark skidder into the woods and brought back several logs to the log yard.</p>	a. Machine/Equipment Operator: Skidder/Skidder b. Skidding machine area* c. Run over by skidder+ d. Unknown e. Procedural f. Human (contact: equipment)

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Region III		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<p>After unhooking the logs, the victim returned to where the Tree Farmer skidder was located. About 20 minutes later, the other employee looked toward the woods and noticed that the Clark skidder was still parked where he had seen it earlier. The employee walked to the Clark skidder, found it still running, and noticed the Tree Farmer skidder located approximately 90 feet west of the Clark skidder. The Tree Farmer skidder was wedged in some brush. At this time he also noticed the victim laying face down, he had apparently been run over by the skidder.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 14 b. Number of citations issued related to the event: 0</p>	
VA (45) (State)	<p>On July 23, 1996, a 45-year-old male employee of T & S Renewable Resources, Inc., of Virginia was performing maintenance on a stalled D4H Caterpillar dozer when the dozer drifted backward, catching the victim's clothing in the cleats of the track. This resulted in fatal crushing injuries to the victim.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 11 b. Number of citations issued related to the event: 2 -1910.252(f)(7)(i) (defective brake on machinery) -1910.266(i)(3)(vi) (employer failed to train employees)</p>	a. Machine/Equipment Operator: Bull Dozer b. Other: Unknown* c. Crushed by dozer+ d. Operating machinery: Performing maintenance e. Mechanical (brakes) f. Mechanical (contact: machine: dozer)

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Region III		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
VA (53) (State)	<p>At approximately 11:00 a.m. on August 2, 1996, a 34-year-old male employee of L. E. Martin Iii Logging of Virginia was fatally injured. The employee was struck on the head and neck area of the body by the top of a “danger tree” that became dislodged when it was struck by another falling “danger tree.” The force of the blow resulted in the death of the victim.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 19 b. Number of citations issued related to the event: 3 -1910.266(h)(1)(iv) (employee approached closer than two tree Lengths to felling operations) -1910.266(h)(1)(vi) (danger trees not felled, removed or avoided) -1910.266(i)(1) (employer failed to train employees)</p>	a. Feller/Faller b. Cutting, felling area* c. Struck by falling danger tree+ d. Felling a danger tree e. Procedural f. Human (contact: a tree)
VA (59) (State)	<p>On August 27, 1996, a 39-year-old male employee of Victory L.L.C. of Virginia was limbing/topping a tree when the top section kicked back, striking the employee and causing massive abdominal injuries.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 3 b. Number of citations issued related to the event: 0</p>	a. Limber/Bucker b. Limbing, bucking area* c. Struck by felled tree top+ d. Limbing a tree e. Procedural f. Human (contact: a tree)
WV (13) (Federal)	<p>On December 11, 1995, a 32-year-old male employee of Sayre logging Company of West Virginia was fatally injured when he was struck by a dislodged tree. The employee had cut one oak tree that fell to the ground. The second oak hit a small sugar maple breaking it; both</p>	a. Feller/Faller b. Limbing, bucking area** c. Struck by dislodged tree+ d. Limbing/Bucking: Topping a felled tree e. Procedural f. Human (contact: a tree)

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Region III		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<p>trees became lodged in a larger sugar maple. While the employee (the victim) was talking with another employee, the smaller sugar maple fell to the ground. The victim decided to delimb and top the previously felled oak tree which was under the lodged oak. While the victim was topping the felled oak tree, the lodged oak tree fell striking the victim.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 5</p> <p>b. Number of citations issued related to the event: 2</p> <p>✓-1910.266(h)(1)(vi) (failure to fell, remove or avoid danger trees)</p> <p>✓-1910.266(i)(3)(iii) (employer failed to train employees)</p>	
WV (35) (Federal)	<p>On April 17, 1996, the 52-year-old male owner of Circle H. Enterprises, Inc. of West Virginia was fatally injured while delivering a tractor trailer load of logs to a lumber company. The load was pulled onto the log yard. The victim (the owner of Circle H. Enterprises) proceeded to remove the nylon straps securing the logs. The logs were stacked higher than the side rails at the passenger side of the trailer and the nylon straps were thrown over the top of the logs to the driver side where they were to be rolled up on the side of the trailer. As the victim was rolling up the strap, a log rolled off the top of the trailer and struck the victim. The victim was the individual that loaded the logs on the trailer.</p>	<p>a. Machine/Equipment Operator: Log Truck: Driver</p> <p>b. Landing, log yard*</p> <p>c. Struck by falling log+</p> <p>d. Loading/Unloading: Unbinding a load of logs</p> <p>e. Procedural</p> <p>f. Human (contact: log)</p>

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Region III		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0	
WV (38) (Federal)	<p>On May 23, 1996, a 25-year-old male employee of David Berry D.b.a. David Berry Trucking of West Virginia was fatally injured. The deceased employee was within 30 feet of a 50-foot tree being cut by another company. The tree fell into another tree and became lodged causing a limb to fall, fatally striking the deceased.</p> <hr/> <u>Standards/Citation Information</u> a. Total number of citations issued: 9 b. Number of citations issued related to the event: 2 -1910.266(h)(1)(iv) (employee approached closer than two tree lengths to felling operations) -1910.266(i)(3) (employer failed to train employees)	a. Unknown b. Cutting, felling area** c. Struck by falling tree limb++ d. Unknown e. Procedural f. Human (contact: a tree limb)

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(Part 2 of 2)

Region IV		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
AL (7) (Federal)	<p>On November 15, 1995, a 38-year-old male employee of George Bradford Timber of Alabama died after being seriously injured. The victim was cutting down a white oak tree. As the tree fell, its limbs broke a limb off a sweet gum tree. The limb from the sweet gum tree struck the victim on the back, breaking some of his bones. He was hospitalized on October 27, 1995, and died on November 15, 1995, apparently from a blood clot that stopped his heart.</p> <hr style="border-top: 1px dotted black;"/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 4</p> <p>b. Number of citations issued related to the event: 4</p> <p>✓--1910.266(h)(2)(i) (failure to plan and clear retreat path)</p> <p>✓--1910.266(h)(2)(ii) (failure to assess for hazards prior to felling tree)</p> <p>✓--1910.266(i)(3)(iii) (employer failed to train employees)</p> <p>-1910.266(i)(10)(i) (no certification of training)</p>	<p>a. Feller/Faller</p> <p>b. Cutting, felling area*</p> <p>c. Struck by falling limb from danger tree+</p> <p>d. Felling a tree</p> <p>e. Procedural</p> <p>f. Human (contact: a tree limb)</p>

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Region IV		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
AL (15) (Federal)	<p>At approximately 8:30 a.m. on December 21, 1995, a 62-year-old male employee of Warrior International, Inc. of Alabama was seriously injured by a tree he was felling, and later died, December 22. The employee was cutting down a sycamore tree (approximately 16 inches at the base and 40-50 feet tall) on a hillside adjacent to a small water pond when a portion of the tree apparently struck him on the head. He was hospitalized. He died on December 22, 1996, after being removed from life support.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 6 b. Number of citations issued related to the event: 0</p>	a. Feller/Faller b. Cutting, felling area* c. Struck by falling tree+ d. Felling the tree e. Procedural f. Human (contact: a tree)
AL (20) (Federal)	<p>At approximately 2:30 p.m. on January 31, 1996, a 32-year-old male employee of Boykin Equipment, Llc of Alabama was fatally injured by a tree he was felling. The victim was cutting a large pine tree down with a chain saw. Before felling the tree, he yelled to his fellow employees that a tree would be falling in their direction, allowing them time to move to a safe location. The victim proceeded to fell the pine tree. As the tree was falling, it struck a standing tree, causing the pine tree to kick back striking the victim in the chest.</p> <p>[The victim did not retreat to a safe location as the tree was falling.]</p>	a. Feller/Faller b. Cutting, felling area** c. Struck by tree kick back+ d. Felling the tree e. Procedural f. Human (contact: a tree)

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Region IV		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 14</p> <p>b. Number of citations issued related to the event: 14</p> <ul style="list-style-type: none"> ✓-1910.266(d)(1)(iv) (no chain saw leg protection) ✓-1910.266(d)(1)(v) (no foot protection) ✓-1910.266(d)(1)(vi) (no head protection) ✓-1910.266(d)(1)(vii)(A) (no eye protection) ✓-1910.266(f)(3)(viii)(C) (no rearward visibility) ✓-1910.266(f)(3)(xiii) (no deflectors) ✓-1910.266(f)(6) (no exhaust pipes) ✓-1910.266(h)(2)(vi) (improper felling technique) ✓-1910.266(i)(1) (employer failed to train employees) ✓-1904.8 (employer failed to report fatality) ✓-1910.266(i)(7)(i) (no first aid/CPR training) ✓-1910.1200(e)(1) (no written hazard communication program) ✓-1910.1200(g)(8) (no safety data sheets) ✓-1910.1200(h) (employer failed to provide effective information and training) 	

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Region IV		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
AL (26) (Federal)	<p>On March 6, 1996, a 27-year-old male employee of Tyler Grace Logging & Pulpwood of Alabama was fatally injured when a lodged tree became dislodged. A crew was cutting trees which had been damaged by hurricane Opal. The procedure was that when a tree became lodged, the feller would advise the skidder operator and he would use his machine to take it down. In this particular instance, the tree was lodged in another pine tree that was not going to be cut. After being advised of the lodged tree, the skidder operator (the victim) got off his skidder and was pulling the skidder cable to tie the tree down and fell it. The tree came loose and the victim ran in the direction of the falling tree.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 1 b. Number of citations issued related to the event: 0</p>	a. Machine/Equipment Operator: Skidder/Skidder b. Cutting, felling area** c. Struck by dislodged tree+ d. Operating machinery: Pulling skidder cable to tie down a lodged tree e. Procedural f. Other (contact: a tree)
AL (37) (Federal)	<p>On May 13, 1996, a 54-year-old employee of Posey Logging L.L.C. of Alabama was fatally injured. Employees of Posey Logging were cutting timber when the tree being cut fell into another tree that had been partially uprooted by a storm and lodged against two other trees. The lodged tree fell, striking the victim on the head.</p>	a. Feller/Faller b. Cutting, felling area** c. Struck by dislodged tree+ d. Felling a tree e. Procedural f. Human (contact: a tree)

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Region IV		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<u>Standards/Citation Information</u> a. Total number of citations issued: 6 b. Number of citations issued related to the event: 4 ✓-1910(h)(1)(iv) (employee approached closer than two tree lengths to felling operations) ✓-1910.266(h)(1)(vi) (danger tree not felled, removed or avoided) ✓-1910.266(i)(1) (employer failed to train employees) ✓-1910.266(d)(1)(vi) (no head protection/hard hat)	
AL (40) (Federal)	At approximately 2:00 p.m. on June 12, 1996, a 25-year-old male employee of Lanier Logging, Inc. of Alabama was seriously injured by a tree limb, and later died, June 17 , 1996. The employee was watching a skidder pull two trees to a location where he could top them when a tree limb of one of the trees swung and struck him in the head. The employee was immediately hospitalized; he died on June 17, 1996, during brain surgery. <u>Standards/Citation Information</u> a. Total number of citations issued: 2 b. Number of citations issued related to the event: 2 ✓-1910.266(d)(6)(i) (adjacent work areas not separated by safe distance) ✓-1910.266(i)(7)(i) (no first aid/CPR training)	a. Limber/Bucker b. limbing, bucking area** c. Struck by swinging tree limb++ d. Waiting for process: Watching a skidder operator pull trees to topping area e. Procedural f. Human (contact: a tree limb)

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Region IV		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
AL (43) (Federal)	<p>At approximately 11:00 a.m. on July 16, 1996, a 48-year-old male employee of Simpkins Logging of Alabama was fatally injured. As the employee (the victim) was cutting the top out of a hardwood tree that had been felled by a three-wheel feller buncher, the feller buncher felled another hardwood tree that fell on the victim.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 3</p> <p>b. Number of citations issued related to the event: 3</p> <ul style="list-style-type: none"> ✓-1910.266(d)(6)(ii) (workers felling trees not separated by two tree lengths or more) ✓-1904.8 (failure to report fatality) ✓-1910.1200 (E)(1) (no written hazard communication program) 	<p>a. Limber/Bucker</p> <p>b. Limbing, bucking area**</p> <p>c. Struck by a falling tree++</p> <p>d. Limbing/Bucking: Topping a tree</p> <p>e. Procedural</p> <p>f. Human (contact: tree)</p>
AL (52) (Federal)	<p>At approximately 12:00 p.m. on April 26, 1996, a 44-year-old employee of Dixon Burpo Logging of Alabama was severely injured when a log struck him on the head. He died on July 31, 1996. The employee was guiding a log that was being winched onto a log truck by the owner of the company. The employee was positioned below the log he was guiding. The log came loose from the winch striking the employee on his hard hat. The victim was immediately hospitalized; he died on July 31, 1996.</p>	<p>a. Machine/Equipment Operator: Log Loader</p> <p>b. Log loading area**</p> <p>c. Struck by elevated log++</p> <p>d. Guiding log being winched onto log truck</p> <p>e. Procedural</p> <p>f. Human (contact: a log)</p>

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Region IV		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<u>Standards/Citation Information</u> a. Total number of citations issued: 2 b. Number of citations issued related to the event: 2 ✓-1910.266(h)(6)(v) (log not positioned to prevent slippage during handling) ✓-1904.8 (failure to report fatality)	
FL (25) (Federal)	<p>On March 4, 1996, a 37-year-old male employee of R & M Pulpwood, Inc. of Florida was fatally injured. Three employees, including the victim, were measuring and cutting trees which had already been cut down with chain saws into specific lengths for shipment to a sawmill. A 44-foot high pine tree (with no green vegetation and thin bark) that had not been cut down, stood in the general area where the men were working. Various pieces of equipment, including a skidder and buncher, had been operating near this tree, and there had been several large trees cut down close to this tree. The wind was blowing at about 10-20 miles per hour with an approaching cold front. Employee number two took the end of the tape and placed it at the base of a tree, while employee number one (the victim), with his back to the dead pine tree, started walking along the length of the tree being measured. Employee number three was watching. The dead pine tree fell onto the back and head of employee number one fatally injuring him.</p>	a. Limber/Bucker b. Limbing, bucking area** c. Struck by falling dead or danger tree+ d. Limbing/Bucking: Measuring a felled tree e. Procedural f. Human (contact: a tree)

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Region IV		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<u>Standards/Citation Information</u> a. Total number of citations issued: 4 b. Number of citations issued related to the event: 4 ✓-1910.266(h)(1)(vi) (failure to fell, remove or avoid danger trees) ✓-1910.266(i)(1) (employer failed to train employees) ✓-1910.266(d)(1)(iv) (no chain saw leg protection) ✓-1910.266(d)(1)(vii) (no eye/face protection)	
GA (62) (Federal)	<p>On September 26, 1996, a 18-year-old male tree trimmer employed with the Carey Locke Logging Co. of Georgia was struck in the head by a dead tree.</p> <hr/> <u>Standards/Citation Information</u> a. Total number of citations issued: 3 b. Number of citations issued related to the event: 3 --1910.266(h)(1)(vi) (failure to fell, remove or avoid danger tree) --1904.8(a) (failure to report a fatality) ✓-1910.266(i-10) (no written certification of training)	a. Limber/Bucker b. Limbing, bucking area* c. Struck by falling dead tree+ d. Limbing a tree e. Procedural f. Human (contact: a tree)

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Region IV		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
GA (48) (Federal)	<p>At approximately 12:25 p.m. on July 26, 1996, a 31-year-old male employee of A. W. Herndon Land Timber Development of Georgia was fatally injured. A logging crew was working on a hardwood timber track harvesting oak, cherry, hickory and gum, and loading the limbed trees into one of two log trailers that were sitting at the ramp. The log trailer that was attached to a Mack truck was almost fully loaded by the knuckle boom log loader operator when a 43-foot long limbed gum tree fell between the two log trailers parked about 40 inches apart. This gum tree struck the victim, the truck driver, and crushed him.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 3</p> <p>b. Number of citations issued related to the event: 3</p> <p>✓-1910.266(h)(6)(ii) (victim too close to loading operation)</p> <p>✓-1910.266(h)(6)(iv) (loaded logs on truck not piled in orderly secure manner)</p> <p>-1910.266(i)(10) (no training certification)</p>	<p>a. Machine/Equipment Operator: Truck: Driver</p> <p>b. Log loading area**</p> <p>c. Struck by (crushed by) elevated tree++</p> <p>d. Waiting for process: Standing between trailers being loaded with trees</p> <p>e. Procedural</p> <p>f. Human (contact: a log)</p>
MS (9) (Federal)	<p>On November 20, 1995, a 54-year-old male employee of Carl Gandy of Mississippi was fatally injured when he was struck by a log. The employee was standing in close proximity to a knuckle boom while logs were being loaded on a trailer. The knuckle boom operator lost part of the log load and one of the logs struck the employee in the back of the head as he tried to run.</p>	<p>a. Unknown</p> <p>b. Log loading area**</p> <p>c. Struck by elevated log++</p> <p>d. Waiting for process: Standing near a knuckle boom while logs were being loaded on a trailer</p> <p>e. Procedural</p> <p>f. Human (contact: a log)</p>

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State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<u>Standards/Citation Information</u> a. Total number of citations issued: 5 b. Number of citations issued related to the event: 3 ✓-1910.266(d)(6)(i) (employees working too close together) ✓-1910.266(i)(1) (employer failed to train employees) ✓-1910.266(d)(1)(i) (no head protection)	
MS (27) (Federal)	<p>At approximately 7:30 a.m. on March 19, 1996, a 55-year-old employee of Tucker Timber Harvesting of Mississippi was severely injured when he was struck in the head by the butt of a tree that had been topped. The victim was working at the pre ramp area on a logging site delimiting trees when his chain saw became stuck in one of the trees he was topping. The skidder operator had pulled more trees to the area and was turning the skidder around when the victim motioned for help. While moving the skidder into position at the direction of the victim, the skidder tire struck the butt of an already topped tree, causing it to pop up and swing to the side striking the victim on the head below his hard hat. The victim was given first aid treatment at the site and transported to the hospital where he died approximately 15 hours later of his injuries.</p> <hr/> <u>Standards/Citation Information</u> a. Total number of citations issued: 5 b. Number of citations issued related to the event: 0	a. Limber/Bucker b. Limbing, bucking area** c. Struck by swinging tree++ d. Topping a tree e. Procedural f. Human (contact: a felled tree)

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Region IV		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
MS (41) (Federal)	<p>On June 17, 1996, a 66-year-old male employee of Jerry Hoop & Sons Logging of Mississippi was fatally injured.</p> <p>[The file provided no description of the incident. The headliner indicated that the victim was struck by a log being swung by a loader.]</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 4 b. Number of citations issued related to the event: 0</p>	a. Unknown b. Landing, log yard** c. Struck by a log++ d. Unknown e. Procedural f. Human (contact: log)
MS (61) (Federal)	<p>At approximately 8:15 a.m. on September 11, 1996, a 53-year-old male employee of Hill Logging, Inc. of Mississippi was struck by a pine tree. At the time of the fatal injury, the employee was starting to cut a pine tree down when he stopped to wait for another cut up tree to fall. The employee was struck in the rib cage when the falling tree (approximately 20 inches in diameter, 48 feet tall and several feet from him) hit the ground and kicked back up from a limb sticking out, pushing him into the tree he had been cutting. The impact of the tree caused multiple abdominal and chest injuries.</p>	a. Feller/Faller b. Cutting, felling area* c. Struck by tree kick back+ d. Waiting for other actions to be completed (was felling a tree when he stopped to wait for another cut up tree to fall) e. Procedural f. Human (contact: a tree)

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Region IV		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<u>Standards/Citation Information</u> a. Total number of citations issued: 8 b. Number of citations issued related to the event: 1 ✓-1910.266(h)(1)(iv) (victim was less than two tree lengths from timber felling operations)	
NC (34) (State)	<p>On April 17, 1996, a 38-year-old male employee of Michael A. Martin Db a Martin's Logging of North Carolina was fatally injured. The victim was working alone manually felling trees when he was struck in the head by a tree (approximately seven inches in diameter) that had been lodged in a larger pine tree he was cutting down. Evidence indicated that the 7-inch tree rolled off the larger tree striking the victim.</p> <hr/> <u>Standards/Citation Information</u> a. Total number of citations issued: 26 b. Number of citations issued related to the event: 7 ✓-1910.266(h)(1)(vi) (employee working underneath lodged tree) ✓-1910.266(h)(2)(v) and (vi) (improper felling technique) ✓-1910.266(d)(6)(iii) (all employees not within visual or audible contact) ✓-1910.266(i)(1) (employer failed to train employees) ✓-1910.266(d)(1)(vi) (no head protection) ✓-1910.266(d)(6)(iv) (employer did not account for each employee at end of work shift) ✓-1910.266(i)(10) (no certification record of training) -1904.8 (employer failed to report fatality)	a. Feller/Faller b. Cutting, felling area* c. Struck by dislodged tree+ d. Felling a tree e. Procedural f. Human (contact: a tree)

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Region IV		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
NC (60) (State)	<p>On August 28, 1996, the 52-years-old co-owner of Hodges Logging of North Carolina was fatally injured. The co-owner had been operating a skidder that he turned over to an employee. He left the machine informing the employee that he was going to check the property line on the east side of the track where two trees had been cut earlier and become lodged against other trees. Apparently, one of the trees came loose and fell on the co-owner as he surveyed the area.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	a. Other: Co-owner b. Cutting, felling area* c. Struck by dislodged tree++ d. Checking property line where two previously cut trees were lodged e. Procedural f. Human (contact: a tree)

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Region IV		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
SC (23) (State)	<p>On February 21, 1996, a 39-year-old male employee of H. H. Keziah Logging of South Carolina drowned while logging in a swampy, flooded timber area. The victim, a skidder operator, was hooking up felled trees to cable behind the skidder in water 2-3 feet deep. According to the nearest witness, the victim had hooked up a third log when he slipped and fell face down into the water. The witness got to the victim in 5-8 minutes (due to terrain conditions) and attempted resuscitation/CPR unsuccessfully. The coroner's preliminary report revealed that the victim's death was due to asphyxia from drowning. The victim operated a John Deere Model 548 cable skidder with dual tires on front and rear. He had been doing this type of work approximately 25 years; he was wearing a hard hat when found.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	a. Machine/Equipment Operator: Skidder/Skidder b. Skidding machine area** c. Slipped and fell in water+ d. Hooking skidder cable to felled tree e. Procedural f. Human (contact: other)
SC (50) (State)	<p>On July 30, 1996, a 54-year-old male employee of James Otis Young of South Carolina died after falling. While stacking short logs, the victim complained of being "hot around head." He rested for five minutes but fell when he tried to walk, impaling his throat on a branch stud to a depth of 4 1/2". He died after pulling himself off the stud.</p>	a. Other: Logger b. Log loading area** c. Other: Collapsed, impaled throat on branch stud+ d. Stacking short logs e. Other (medical) f. Other (medical) (Contact: other)

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- ** The victim was working within hearing and/or sight of other workers when he was fatally injured.
- + The action that caused the victim's death resulted from tasks the victim was performing or actions the victim failed to take that caused his death, e.g., the victim was fatally struck by the tree he was felling or the victim failed to remove a standing danger tree before felling a near by tree.
- ++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Region IV		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<u>Standards/Citation Information</u> a. Total number of citations issued: 3 b. Number of citations issued related to the event: 0	
TN (12) (State)	<p>On December 8, 1995, a 39-year-old male employee of Teddy Smith Logging of Tennessee was fatally injured. A mechanical skidder was pulling an un-topped tree from a gully when the branches end of the tree slid to the side striking down a small ash tree which hit and killed a feller working on the hillside.</p> <p>[The skidder was operating too close to the feller.]</p> <hr/> <u>Standards/Citation Information</u> a. Total number of citations issued: 1 b. Number of citations issued related to the event: 1 -1910.266(f)(2)(vii) (machine operated too close to other employees)	a. Feller/Faller b. Skidding/machine area* c. Struck by falling tree++ d. Felling a tree e. Procedural f. Human (contact: a tree)

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- * The victim was working alone, i.e., the victim was not within hearing and/or sight of other workers when he was fatally injured.
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- ++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

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Region V		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
IL (49) (Federal)	<p>On July 29, 1996, a 35-year-old male employee of Falling Oaks Timber Co., Inc., of Illinois died after being struck on the head by a dead tree limb. The employee was felling trees with a chain saw. He was wearing a hard hat, mesh screen for eye protection, steel-toed shoes, blue jeans and no shirt. As he felled a large diameter tree, the branches became entangled in a tree about 12' away, dislodging a large dead tree branch that fell on the victim. The victim had retreated away from the falling tree and did not see the large tree branch that fell on his head. His hard hat was knocked off. He was pronounced dead at the hospital.</p> <hr style="border-top: 1px dotted black;"/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 4</p> <p>b. Number of citations issued related to the event: 3</p> <ul style="list-style-type: none"> ✓ -1904.8(a) (failure to report fatality) ✓ -1910.266(i)(1) (employer failed to train employees) ✓ -1910.266(i)(7)(i) (no first aid training) 	<p>a. Feller/Faller b. Cutting, felling area* c. Struck by falling dead or danger tree limb+ d. Felling a tree e. Procedural f. Human (contact: a tree)</p>

- ✓ The citation for this standard was identified in the Integrated Management Information System (IMIS) as relating to the fatal event. Other citations, those with no ✓ mark, are also included here because they appear to relate to the circumstances of the fatal event.
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- ++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Region V		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
OH (18) (Federal)	<p>On January 22, 1996, a 18-year-old male employee of Stutzman Lumber of Ohio was fatally injured by a tree that became dislodged. The victim was cutting a line of trees when one tree hung up in another tree. He was instructed to leave any tree that was not down on the ground for the bull dozer operator to get down. Before proceeding, the victim cut the tree down with the lodged tree in it. The lodged tree fell, striking the victim and landing on his windpipe. He was found dead. He died of asphyxiation; his neck was not broken.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 2 b. Number of citations issued related to the event: 0</p>	a. Feller/Faller b. Cutting, felling area* c. Struck by dislodged tree+ d. Felling a tree e. Procedural f. Human (contact: a tree)

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- ++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

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Region VI		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
AR (31) (Federal)	<p>On April 8, 1996, a 40-year-old male employee of Edward Keith Jewell Logging of Arkansas received numerous broken bones and a broken neck when he lost control of the log skidder he was operating on a steep incline. The skidder rolled and tumbled approximately 150 feet down the steep hill. The employee was thrown from the skidder and it is believed the skidder rolled over the employee. The employee was pronounced dead at the scene.</p> <hr style="border-top: 1px dotted black;"/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	<p>a. Machine/Equipment Operator: Skidder/Skidder b. Skidding machine area* c. Thrown from (rolled over by) skidder+ d. Operating a skidder on a steep hill e. Procedural f. Human (contact: equipment)</p>
AR (56) (Federal)	<p>On August 14, 1996, a 57-year-old (male) self-employed logger and private contractor of Charles Forga Company of Arkansas was fatally injured by a falling tree. On leaving the work site for the day, the contractor walked by an area where a tree was being cut, the tree fell on the victim crushing him. He was pronounced dead at the scene.</p>	<p>a. Other: Logger b. Cutting, felling area* c. Struck by (crushed by) falling tree++ d. Leaving the work site e. Procedural f. Human (contact: a tree)</p>

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- ++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Region VI		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0	
TX (3) (Federal)	<p>On October 17, 1995, a 46-year-old male employee of B & B Logging Company, Inc. of Texas was fatally injured when he accidentally stepped in front of the rear tires of a moving log truck as he walked beside it.</p> <hr/> <u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0	a. Unknown b. Other: Unknown* c. Run over by log truck+ d. Walking beside moving log truck e. Procedural f. Human (contact: log truck)
TX (16) (Federal)	<p>On December 22, 1995, a 19-year-old male employee of P & S Logging Corporation of Texas was fatally injured when he was struck, pinned and crushed by the tree he was felling.</p> <hr/> <u>Standards/Citation Information</u> a. Total number of citations issued: 3 b. Number of citations issued related to the event: 3 ✓-1910.266(i)(2)(ii) (employer failed to train employees) ✓-1910.266(d)(2)(i) (no first aid kit) ✓-1910.266(d)(2)(ii) (first aid kit did not include all listed items)	a. Feller/Faller b. Cutting, felling area* c. Struck by (pinned by and crushed by) falling tree+ d. Felling the tree e. Procedural f. Human (contact: a tree)

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Region VIII		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
MT (29) (Federal)	<p>On April 3, 1996, a 31-year-old male employee of Valvo Logging of Montana was fatally injured when a tree that was cut but standing fell over striking him on the head as he was unhooking logs from a log skidding machine.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 10 b. Number of citations issued related to the event: 3 -1910.266(h)(2)(vi)(and (vii) (improper felling technique) -1910.266(i) (employer failed to train employees) -1910.266(i)(7)(i) (no first aid/CPR training)</p>	a. Machine/Equipment Operator: Yarding Machine b. Yarding operations area* c. Struck by falling tree++ d. Operating machinery: Unhooking logs from a skidding machine e. Procedural f. Human (contact: a tree)
UT (63) (State)	<p>At approximately 9:30 a.m. on September 26, 1996, a 24-year-old male employee of Larry N. Reidhead & Sons Logging of Utah was fatally injured by a log being moved with a log loader. The log was elevated when it broke into two pieces, one of which struck the victim.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	a. Unknown b. Log loading area** c. Struck by elevated log++ d. Unknown e. Procedural f. Human (contact: a log)

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Region IX		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
CA (30) (State)	<p>On April 3, 1996, a 27-year-old male employee of R & B Logging of California was fatally injured. The employee was working as a cat skinner for a small logging company. He was driving his bull dozer across the hillside when he drove up on a downed pine tree (log). When the bull dozer was centered on the log, it slid sideways down the log for 40 feet and began rolling over when it came to the end of the log. It rolled over at least six times for approximately 300 feet. The employee was fatally injured when he was ejected from and rolled over by the dozer at about 200 feet.</p> <hr style="border-top: 1px dotted black;"/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 1 b. Number of citations issued related to the event: 1 ✓-6309(h) (failure to use seat belt)</p>	a. Machine/Equipment Operator: Bull Dozer b. Other: Logging area* c. Thrown from (rolled over by) bull dozer+ d. Driving a bull dozer across hillside e. Procedural f. Human (contact: equipment)

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Region IX		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
CA (51) (State)	<p>At approximately 11:45 a.m. on July 30, 1996, a 18-year-old male employee of Daryle Smeltzley of California suffered fatal head injuries when he was struck by a falling tree. The victim was limbing and bucking a tree on a steep side hill when he was struck by a tree felled by another person located on a side hill from him and down in a brushy gully.</p> <p>[The faller and the buckler were working too close together and the faller did not know where the buckler was. The buckler (the victim) had taken off one day from another logging job to help his friend, the faller, fall timber on a small logging site for a property owner.]</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 3</p> <p>b. Number of citations issued related to the event: 3</p> <ul style="list-style-type: none"> ✓-3203(a) (no injury/illness prevention program) ✓-6275(c) (head timber faller did not stay informed of other employee's work location) ✓-6275(a) (timber fallers were not spaced so they would not endanger others) 	<p>a. Limber/Bucker</p> <p>b. Limbing, bucking area**</p> <p>c. Struck by falling tree++</p> <p>d. Limbing and bucking a tree</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>

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Region X		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
ID (36) (Federal)	<p>On May 3, 1996, a 24-year-old male employee of Millard Cutting Company of Idaho was fatally struck by the 34-inch diameter cedar tree he was felling when the tree barber-chaired. The victim was attempting to recut a face cut on the opposite side of the tree from the original face cut, as the tree had sat back on the stump, when the tree barber-chaired approximately 21 feet up the trunk, twisted and fell in the direction of the original face cut. The employee had not cleared a safe escape route at a diagonal away from the intended fall, so he apparently ran directly back from the original face cut.</p> <p>[The victim was a new employee and the employer had not trained the employee on their logging practices nor closely supervised the employee until judged competent.]</p>	<p>a. Feller/Faller b. Cutting, felling area* c. Struck by barber-chair tree+ d. Recutting a face cut e. Procedural f. Human (contact: a tree)</p>

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Region X		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<u>Standards/Citation Information</u> a. Total number of citations issued: 2 b. Number of citations issued related to the event: 2 ✓-1910.266(i)(5)(iv) (employer failed to assure employees could safely perform tasks) ✓-1910.266(i)(6) (employee did not work under close supervision of a designated person)	
ID (39) (Federal)	<p>On June 3, 1996, a 32-year-old male employee of Pack Sack Log Cutting of Idaho was killed by a falling tree. Three workers (a bull dozer operator, a tree buckner/delimer, and a tree feller) were pioneering a road by cutting trees in a forested area. They were working within 100 feet (or one tree length) of each other at a landing area. The tree feller cut down two trees and was cutting a third tree when the buckner/delimer (the victim) started delimiting the second tree, unbeknownst to the tree feller. The third tree was cut down, fatally striking the tree buckner.</p> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 3 b. Number of citations issued related to the event: 3 ✓-1910.266(d)(6)(i) (adjacent work areas not separated by safe distance) ✓-1910.266(d)(6)(ii) (felling operations not spaced two or more tree lengths apart) ✓-1910.266(d)(7)(i) (inadequate signaling system)</p>	a. Limber/Bucker b. Limbing, bucking area** c. Struck by falling tree++ d. Limbing a tree e. Procedural f. Human (contact: a tree)

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Region X		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
ID (55) (Federal)	<p>On August 5, 1996, a 35-year-old male employee of Ed Fackrell Logging, Inc. of Idaho was fatally injured while felling a fir tree. The fir tree was adjacent to a standing dead snag. When the employee finished his back cut, the snag broke off approximately six feet above the ground, striking the employee.</p> <p>[The employer had communicated a policy of avoiding or removing danger trees. The victim apparently misjudged the condition of the snag.]</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	<p>a. Feller/Faller b. Cutting, felling area* c. Struck by falling dead or danger snag+ d. Felling a tree e. Procedural f. Human (contact: tree)</p>

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Region X		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
OR (1) (State)	<p>At approximately 11:30 a.m. on October 2, 1995, a 37-year-old male employee of Thomas H. Ireland, Inc. of Oregon was fatally injured when struck by a log. The employee or victim was attempting to wrap his load of logs before moving his truck. He had thrown a wrapper over the load of logs and was attempting to place it around the right front bunk to create a strip wrapper. As he pulled on the wrapper, the outside top log rolled off the load striking him in the chest and abdomen and knocking him to the ground. The chaser heard the log fall and turned to see the victim sitting on the ground. He started CPR while the crew called for assistance. The victim was dead on arrival to the hospital.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	a. Machine/Equipment Operator: Truck: Driver b. Log loading area** c. Struck by elevated log+ d. Wrapping a load of logs e. Procedural f. Human (contact: log)

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Region X		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
OR (2) (State)	<p>At approximately 11:45 a.m. on October 5, 1995, a 38-year-old male employee of Mark T. Jones & Gregory P. Jones of Oregon was found caught between a crawler tractor and a log. The employee had yarded a turn of four logs to a transfer point and was unhooking the four chokers. He had unhooked three chokers and was unhooking the fourth when it appears that the tractor rolled backwards on top of the victim, pinning him to one of the logs in the turn. The skidder operator returned to the transfer point to find the victim. He removed the tractor and proceeded with CPR. Help was summoned and the victim was carried 300 yards downhill to an ambulance where he was pronounced deceased and transported to a local funeral home.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	a. Machine/Equipment Operator: Skidder/Crawler Tractor b. Landing, log yard* c. Rolled over (pinned by and crushed by) tractor+ d. Unhooking chokers from logs e. Procedural f. Human (contact: equipment)

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Region X		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
OR (17) (State)	<p>At approximately 9:00 a.m. on January 3, 1996, a 26-year-old male employee of Don Whitaker Logging & Hauling, Inc. of Oregon was fatally injured by a falling tree. A four-man crew was setting chokers on each side of the rigging. The second rigging slinger (the victim) and a choker setter, set chokers on three logs and an 80-foot tall standing tree on the west side of the rigging. They then walked over to the east side of the rigging where the hook tender and the first rigging slinger were setting chokers. The victim blew three whistles for the yarder operator to haul in the turn. When the carriage began to travel uphill, the chokers came taunt on the standing tree and a log that pulled up behind it, caused the tree to fall straight across the main line and haul back lines 31 feet away. The top 49-foot section of the tree that fell over the side of the lines struck the victim who was standing near by. He died at the scene.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 2</p> <p>b. Number of citations issued related to the event: 2</p> <p> –437-006-0015 (no written safety and health program)</p> <p> –437-006-0405(8) (employee not in clear while rigging was moving)</p>	<p>a. Machine/Equipment Operator: Yarding Machine: Rigging Slinger</p> <p>b. Yarding operations area**</p> <p>c. Struck by tree knocked down by pulled log+</p> <p>d. Waiting for process: Watching a turn of logs come in</p> <p>e. Procedural</p> <p>f. Human (contact: tree)</p>

✓ The citation for this standard was identified in the Integrated Management Information System (IMIS) as relating to the fatal event. Other citations, those with no ✓ mark, are also included here because they appear to relate to the circumstances of the fatal event.

* The victim was working alone, i.e., the victim was not within hearing and/or sight of other workers when he was fatally injured.

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Region X		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
OR (28) (State)	<p>At approximately 10:00 a.m. on March 26, 1996, a 23-year-old male employee of Flansberg & Son, Inc. of Oregon was working as a choker setter using an Eagle III motorized carriage and 30 feet, 3/4 inch chokers. The carriage was returned to the location when the chokers were being removed to be preset. After the carriage stopped and was clamped, the victim approached from in front and reached to the side for the chokers. At this time the haul back that was wrapped around the skyline came unwrapped causing the slack to whip toward the front of the carriage. It was this whip of slack that struck the victim in the head causing his fatal injuries.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 2</p> <p>b. Number of citations issued related to the event: 2</p> <p>✓-437-006-0012(5) (employees not in clear when rigging was moving)</p> <p>✓-437-006-0056(5)(a) (radio control carriage did not have operable warning signal)</p>	<p>a. Machine/Equipment Operator: Yarding Machine: Choker Setter</p> <p>b. Yarding operations area*</p> <p>c. Struck by haul back cable+</p> <p>d. Setting chokers</p> <p>e. Mechanical</p> <p>f. Material (contact: equipment part)</p>

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Region X		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
OR (32) (State)	<p>At approximately 11:15 a.m. on April 11, 1996, a 24-year-old male employee of Keith Dahl Logging, Inc. of Oregon was fatally injured. As the victim stood next to the deck of the under carriage of the log loader, he was struck on the right side by the rotating superstructure and caught between the deck of the under carriage and the counter balance. The operator continued to swing, unaware of the situation, until the victim's body fell out of the area it was trapped in. The victim had such severe injuries that first aid was not possible.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 2</p> <p>b. Number of citations issued related to the event: 2</p> <p>✓-437-006-0260(15) (employee approached pinch point area of machine)</p> <p>✓-437-006-0015 (lack of written safety and health program)</p>	<p>a. Machine/Equipment Operator: Truck: Driver</p> <p>b. Landing, log yard**</p> <p>c. Struck by (caught between) machine parts++</p> <p>d. Waiting for truck to be loaded with logs</p> <p>e. Procedural</p> <p>f. Human (contact: machinery)</p>
OR (33) (State)	<p>At approximately 10:30 a.m. on April 16, 1996, a 27-year-old male employee of Rick Roberts Cutting, Inc. of Oregon was fatally injured. The faller felled an old growth fir tree and bucked off the butt. He then went to fell more trees while the buckler started bucking the old growth. He felled a 60-foot cedar while the buckler was 42 feet away bucking the old growth. He told the buckler he was going to fell a fir tree which was about 153 ½ feet tall. He faced up the fir tree toward the buckler, shut his saw off, then yelled to the buckler,</p>	<p>a. Limber/Bucker</p> <p>b. Limbing, bucking area**</p> <p>c. Struck by falling tree++</p> <p>d. Bucking a tree</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>

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Region X		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<p>“coming toward you.” The buckler yelled back, “let it go.” The feller made the back cut and the tree fell striking the buckler at 118 ½ feet where he was standing on the old growth log. He was found dead at the scene by the feller a few minutes later.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 3</p> <p>b. Number of citations issued related to the event: 2</p> <p>✓-437-006-0355(1) (employees working too close together)</p> <p>✓-437-006-0355(16) (undercut made in tree while other employees were in the work area)</p>	
OR (47) (State)	<p>At approximately 9:30 a.m. on July 26, 1996, a 46-year-old male employee of Michael J. Bruer of Oregon was fatally injured by a log. The victim was bucking a felled tree when a previously felled and bucked log rolled down a 40-degree slope striking him from behind. The victim was knocked to the ground along side other logs, and the fir log (39 inches in diameter and 35 feet long) rolled on top of him, pinning him underneath and to another log. A co-worker found the victim after hearing his power saw idling and received no response when hailed. The co-worker checked for vital signs, found none, and called for assistance.</p>	<p>a. Limber/Bucker</p> <p>b. Limbing, bucking area*</p> <p>c. Struck by rolling log (pinned between logs)++</p> <p>d. Bucking a felled tree</p> <p>e. Procedural</p> <p>f. Human (contact: a log)</p>

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Region X		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0	
OR (58) (State)	<p>At approximately 7:30 a.m. on August 26, 1996, a 31-year-old male employee of B & S Logging, Inc. of Oregon was fatally injured while using a Cat 320 track log loader to shovel logs on a 20-degree slope side hill. The diagonal, from right front to left rear tracks, was a 45-degree slope. When the employee traveled forward to pick up a log, the right track hit a stump causing the machine to tip over on its left side. The operator's cab landed on a large stump which came through the cab door pinning the operator against the cab wall. The operator expired after being air lifted to the hospital.</p> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	a. Machine/Equipment Operator: Shovel Log Loader b. Other: Logging area* c. Pinned between stump and cab wall of log loader+ d. Operating machinery: Shoveling logs with a log loader e. Procedural f. Human (contact: equipment)

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Region X		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
WA (4) (State) (NOTE: This investigation was conducted by Federal OSHA.)	<p>On October 20, 1995, a 20-year-old male employee of Elk Creek Contractors, Inc., of Washington was fatally injured by a skidder. The employee drove a rubber tired skidder up a 32-degree slope and backed around sideways to the slope. The skidder rolled over sideways. There were some old stumps and loose logs in the area hidden by undergrowth which may have contributed to the rollover. At some point during the two or more revolutions of the skidder, the employee was ejected from the cab and the skidder rolled over his chest and head. The contributing factors were, (a) the employee was not wearing the available seat belt, (b) the employee had two months experience operating the skidder and was not provided effective training, and (c) safety meetings were irregular and did not cover necessary topics.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 7</p> <p>b. Number of citations issued related to the event: 3</p> <p>✓--1910.266(d)(3)(ii) (failure to use seat belt)</p> <p>✓--1910.266(i)(3) (employer failed to train employee)</p> <p>✓--1904.8 (employer failed to report fatality)</p> <p>--1910.266(i)(11) (no monthly safety and health meetings)</p>	<p>a. Machine/Equipment Operator: Skidder/Skidder</p> <p>b. Skidding machine area*</p> <p>c. Thrown from (rolled over by) skidder+</p> <p>d. Operating a skidder on a 32-degree slope</p> <p>e. Procedural</p> <p>f. Human (contact: equipment)</p>

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Region X		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
WA (6) (State)	<p>On October 31, 1995, a 68-year-old male employee of George Max Catlin dba Max Catlin Cutting of Washington was fatally injured. The employee or victim was felling timber in a clear-cut unit. He was attempting to fell an alder tree (approximately 80 feet tall) south into the clear cut. He sawed over half way into the tree for the under cut; the tree sat back, leaning toward the north. He sawed a back cut, approximately one inch, into the tree before moving back about 30 feet behind and to the north of the sawed tree. He then attempted to fell another alder tree, approximately 80 feet tall, into the sawed-up tree to push/drive it over. The falling tree did not directly hit the sawed-up tree but pushed it forward. However, it did not break off with the amount of holding wood on the back side of the tree, but instead the tree swung backwards and fell toward the north, in the direction of the feller. The victim attempted to run from the falling tree, but fell down over a log and was crushed by the falling tree.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 2</p> <p>b. Number of citations issued related to the event: 2 ✓--296-54-529(28) (tree with face cut and back cut left standing) --296-54-507(5) (no accident prevention program)</p>	<p>a. Feller/Faller b. Cutting, felling area* c. Crushed by falling tree+ d. Felling a tree e. Procedural f. Human (contact: a tree)</p>

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Region X		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
WA (8) (State)	<p>On November 19, 1995, a 34-year-old male employee of Ectc Inc. of Washington was fatally injured. The victim was felling timber on a side hill in a clear-cut unit, while another employee was felling timber on the other side of a ridge from the victim. The victim moved to within 100-150 feet of the other employee to fell some trees. Because of the ridge and heavy brush, the two fellers were not in visual contact and hearing was poor. The other employee felled a large fir tree approximately 120 feet tall in the direction where the victim was working. The victim was just starting to place an under cut in a large tree to fall in the direction away from the other employee. With his power saw running and facing in the opposite direction, the victim did not see or hear the tree falling toward him. The victim died after being struck in the head by the falling tree that fell approximately 90 feet from his location.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 1 b. Number of citations issued related to the event: 1 ✓-296-54-529(31) (timber fallers working too close together)</p>	a. Feller/Faller b. Cutting, felling area** c. Struck by falling tree++ d. Felling a tree e. Procedural f. Human (contact: a tree)

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Region X		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
WA (42) (State)	<p>On June 21, 1996, a 46-year-old male employee of Jim Wytko Logging, Inc. of Washington was fatally injured. The employee was standing on the road of the cold deck, approximately 30 feet from the yarder, when a guy line broke. This caused the yarder tower to separate from its carriage and be pulled in the direction of the turn. The top of the tower turned in the direction of the employee, and one of the guy lines snapped taut, striking the employee in the back of the head.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	a. Unknown b. Landing, log yard** c. Struck by guy line++ d. Waiting for other processes to be completed (standing on road of cold deck near yarder) e. Material f. Material (contact: equipment part)
WA (44) (State)	<p>On July 16, 1996, a 26-year-old male employee of Weyerhaeuser Company of Washington was fatally injured. The #2 rigging slinger and #1 choker man were struck by a 3' x 6' x 25" maple chunk thrown by moving lines or rigging while pulling a tagged-out turn of logs.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 1 b. Number of citations issued related to the event: 1 ✓-54-555(1) (worker not positioned in the clear during winching)</p>	a. Machine/Equipment Operator: Yarding Machine: Choker Setter b. Yarding operations area** c. Struck by piece of wood (jill poke)++ d. Watching the choked log being pulled e. Procedural f. Human (contact: piece of wood)

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Region X		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
WA (46) (State)	<p>At approximately 7:00 a.m. on July 24, 1996, a 65-year-old male employee of Gwt, Inc. of Washington was fatally injured while operating a 1976 Peter Bilt logging truck. The victim had picked up his first load of logs from the loading site. While descending a 10 percent grade, he lost control of the truck as he attempted to make a right-hand curve. The vehicle's tire tracks were in an arch indicating that the vehicle went into a critical speed scuff or yaw coming into the curve (believed to be from brakes being out of adjustment). In the middle of the curve, the vehicle tipped over onto the driver's side at the east edge of the roadway causing extensive damage to the driver's side of the cab and driver's compartment, pinning the driver into the cab by the steering wheel. He was pronounced dead at the scene.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 2</p> <p>b. Number of citations issued related to the event: 2</p> <p>✓-296-54-567(18) (failure to use seat belt)</p> <p>✓-296-54-569(1) (defective brakes on vehicle)</p>	<p>a. Machine/Equipment Operator: Truck: Driver</p> <p>b. Logging road*</p> <p>c. Crashed: Pinned (crushed) between steering wheel and cab+</p> <p>d. Driving truck</p> <p>e. Mechanical (brakes)</p> <p>f. Mechanical (contact: vehicle)</p>

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Region X		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
WA (54) (State)	<p>On August 2, 1996, the 46-year-old male owner of Ronald W. Broadfoot D.b.a. Broadfoot of Washington was fatally injured while operating a track skidder. As the owner was backing the skidder up a narrow road to grapple a log, it is believed that the skidder tracks picked up a small piece of wood, threw it back and impaled the owner. The skidder then rolled approximately 50 feet downhill, throwing the owner from it.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	a. Machine/Equipment Operator: Skidder/Skidder (Owner) b. Skidding machine area* c. Struck by (impaled by) piece of wood (jill poke)+ d. Moving logs with a skidder e. Procedural f. Human (contact: piece of wood)

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**Logging Fatalities Investigated by the
Occupational Safety and Health Administration (OSHA) in FY 1997
(Part 2 of 2)**

(The following logging fatality cases are in order by region and state.)

Region I		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
VT (20) (State)	<p>On January 29, 1997, a 57-year-old male employee of H. E. Clark Lumber Company Inc. of Vermont was fatally injured when he was hit from behind by a tree that was apparently knocked over by a skidder. He was a logger.</p> <hr style="border-top: 1px dotted black;"/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	<p>a. Feller/Faller b. Skidding/machine area** c. Struck by falling tree knocked over by skidder++ d. Felling a tree e. Procedural f. Human (contact: a tree)</p>

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Logging Fatalities Investigated by the
Occupational Safety and Health Administration (OSHA) in FY 1997
(Part 2 of 2)

Region II		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
NY (35) (Federal)	<p>On June 20, 1997, a 18-year-old male employee of O. F. Failing & Sons, Inc. of New York was fatally injured. The employee was cutting down a tree when he was struck by another tree that was apparently knocked down by the tree he was cutting.</p> <hr style="border-top: 1px dotted black;"/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 12</p> <p>b. Number of citations issued related to the event: 3</p> <p>✓ --1910.266(i)(2) (failure to train employees) (relates to frequency of training)</p> <p>✓ --1910.266(i)(3) (failure to train employees) (relates to content of training)</p> <p>✓ --1910.266(h)(1)(vi) (failure to fell, remove or avoid danger trees)</p>	<p>a. Feller/Faller b. Cutting, felling area* c. Struck by knock down tree+ d. Felling a tree e. Procedural f. Human (contact: tree)</p>

✓ The citation for this standard was identified in the Integrated Management Information System (IMIS) as relating to the fatal event. Other citations, those with no ✓ mark, are also included here because they appear to relate to the circumstances of the fatal event.

* The victim was working alone, i.e., the victim was not within hearing and/or sight of other workers when he was fatally injured.

** The victim was working within hearing and/or sight of other workers when he was fatally injured.

+ The action that caused the victim's death resulted from tasks the victim was performing or actions the victim failed to take that caused his death, e.g., the victim was fatally struck by the tree he was felling or the victim failed to remove a standing danger tree before felling a near by tree.

++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Logging Fatalities Investigated by the
Occupational Safety and Health Administration (OSHA) in FY 1997
(Part 2 of 2)

Region III		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
PA (26) (Federal)	<p>On April 1, 1997, a 29-year-old male employee of Weaver Logging of Pennsylvania was fatally injured. The employee (the victim) was using a chain saw to fell trees. The trees were then limbed by the victim and removed by a skidder operator to a holding area. The victim had been felling a red oak, approximately 90 feet high. He made an undercut to guide the fall of the tree and had completed the back cut. The tree twisted and fell approximately 180 degrees from the intended path. The impact of the falling tree or branches from the tree contacted a dead aspen tree (approximately 75' high and 30' away) and caused the aspen to fall across the red oak. The dead aspen fell between the forks of a double stumped tree that the victim had used for his retreat path and as a secured area. The aspen was approximately 20 feet from the felled tree. The employee was wearing a hard hat, however, he suffered blunt force trauma as a result of the falling aspen striking his head. An examination of the aspen determined that the root system had been completely rotted away and the general condition and location of the tree indicated that it should have been removed before attempting to harvest the red oak.</p>	<p>a. Feller/Faller b. Cutting, felling area* c. Struck by falling dead or danger tree+ d. Felling a tree e. Procedural f. Human (contact: a tree)</p>

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Region III		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0	
VA (9) (State)	At approximately 4:33 p.m. on October 31, 1996 , a 43-year-old male employee of Collie, Inc. of Virginia was fatally injured. The victim was cutting a tree which had another felled tree lodged in it. When the victim completed his felling cut, the lodged tree fell, crushing him. <u>Standards/Citation Information</u> a. Total number of citations issued: 8 b. Number of citations issued related to the event: 1 --1910.266(i)(3) (employer failed to train employees)	a. Feller/Faller b. Cutting, felling area* c. Struck by dislodged tree+ d. Felling a tree e. Procedural f. Human (contact: a tree)
VA (11) (State)	On November 6, 1996 , a 33-year-old male employee of P & L Timber Company of Virginia was fatally injured when the large hemlock tree he was felling struck another tree causing it to kick back, striking him. <u>Standards/Citation Information</u> a. Total number of citations issued: 4 b. Number of citations issued related to the event: 0	a. Feller/Faller b. Cutting, felling area* c. Struck by tree kickback+ d. Felling the tree e. Procedural f. Human (contact: a tree)

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Region III		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
VA (12) (State)	<p>On November 6, 1996, the 36-year-old vice president of Timber Trail Logging, Inc. of Virginia was fatally injured. The President and Vice President (the victim) of Timber Trail Logging were cutting timber from a section of Federal forest land for which they had recently secured a small government logging contract. The victim was attempting to cut away a snag tree (approximately 31 feet tall) that had become wedged beneath a recent, partially felled maple tree (approximately 75 feet tall). When the victim sawed into the snag, the snag prematurely broke allowing the maple to fall. The victim ran in the same direction as the intended felling of the maple tree. He was fatally injured when the top branches of the maple crushed him about the upper torso.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	a. Feller/Faller (Vice President) b. Cutting, felling area* c. Struck by (crushed by) dislodged tree+ d. Felling a snag tree e. Procedural f. Human (contact: a tree)
VA (19) (State)	<p>On January 27, 1997, a 57-year-old male employee of Hill Creek Construction, Inc. of Virginia was fatally injured when the tree being cut prematurely split and fell on him causing crushing injuries. The victim was engaged in logging operations.</p>	a. Feller/Faller b. Cutting, felling area* c. Struck by (crushed by) falling tree+ d. Felling the tree e. Procedural f. Human (contact: a tree)

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Region III		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<u>Standards/Citation Information</u> a. Total number of citations issued: 9 b. Number of citations issued related to the event: 3 --1910.266(h)(1)(vi) (failure to fell, remove or avoid danger trees) --1910.266(h)(2)(v and vi) (improper felling technique) --1910.266(i)(3)(vi) (employer failed to train employees)	
VA (22) (State)	<p>On January 31, 1997, a 29-year-old male employee of Devin Logging of Virginia was fatally injured when he was crushed between the rear end of a logging trailer and a log skidder while he was hooking a tow cable to the trailer.</p> <hr/> <u>Standards/Citation Information</u> a. Total number of citations issued: 2 b. Number of citations issued related to the event: 0	a. Machine/Equipment Operator: Skidder b. Landing, log yard* c. Caught between (crushed by) trailer and skidder+ d. Hooking skidder cable to trailer e. Procedural f. Human (contact: equipment)

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Region III		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
VA (27) (State)	<p>At approximately 2:30 p.m. on April 3, 1997, a 28-year-old male employee of Joe Chambers, Jr. Logging of Virginia was fatally injured. The victim was in the process of limbing a large oak tree he had just felled. He cut off a limb that was approximately 7' from the tree and measured 30' long and 8" in diameter. He then moved up the remaining limb to saw off a 2-foot long section. The 2-foot section of limb had a 5-foot long, 2-inch diameter limb protruding from it at an approximate angle of 45 degrees. He positioned his chain saw beneath the protruding limb and when the chain saw cut through the 8-inch diameter limb, the weight of the chain saw caused the saw to continue downward toward the victim. As the victim stumbled backward, the saw cut into his inside left thigh, severing the artery. He bled to death.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 16</p> <p>b. Number of citations issued related to the event: 2 --1910.266(d)(1)(iv) (no cut resistant leg protection) --1910.266(1-7) (no first aid/CPR training)</p>	<p>a. Limber/Bucker b. Limbing, bucking area* c. Other: Cut by chain saw+ d. Limbing a tree e. Procedural f. Human (contact: equipment)</p>

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Region III		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
VA (32) (State)	<p>On June 5, 1997, a 41-year-old male employee of Broughton Logging of Virginia was fatally injured. Three employees were performing timber cutting operations. Two employees were attempting to remove three felled trees using a wire rope hooked to a D4C Caterpillar dozer. One of the three trees measuring 53 feet long and 22 inches in diameter became lodged behind a stump. The dozer was stationary and pressure was being applied to the felled tree. One employee, the victim, was attempting to dislodge the tree by cutting the stump away. He was standing on a 45-slope (approximate) below the stump. As he cut through the stump, it prematurely broke, causing the felled tree to spring downward striking the victim and knocking him a distance of approximately 18 feet where he struck another standing tree. The victim was pronounced dead at the scene.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 10</p> <p>b. Number of citations issued related to the event: 4</p> <p>--1910.266(h)(1)(viii) (failure to remain on the uphill side of a tree)</p> <p>--1910.266(h)(2)(i) (failure to plan and clear a retreat path)</p> <p>--1910.266(h)(1)(iii) (yarding machine operated too close to felling operations)</p> <p>--1910.266(i)(3)(iii) (employer failed to train employees)</p>	<p>a. Limber/Bucker</p> <p>b. Skidding/machine operation area**</p> <p>c. Struck by tree pulled by dozer+</p> <p>d. Cutting a stump to release a felled tree being pulled</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>

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Region III		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
VA (40) (State)	<p>On August 15, 1997, a 55-year-old male employee of Connie L. Witcher Logging of Virginia was fatally injured when he was thrown from his skidder and crushed by its rollover system when the skidder overturned.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	a. Machine/Equipment Operator: Skidder b. Skidding machine area* c. Thrown from (crushed by) skidder+ d. Operating a skidder e. Procedural f. Human (contact: equipment)
WV (25) (Federal)	<p>On February 26, 1997, a 56-year-old male employee of R & R Logging of West Virginia was fatally injured. When a log truck got stuck, the deceased used a John Deere dozer to pull it up the hill. He then got off the dozer to disconnect the cable from the truck. The dozer apparently vibrated into reverse gear and pinned the deceased between the dozer and the log truck. Both legs were amputated and the deceased was eventually pulled under the dozer tracks.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	a. Machine/Equipment Operator: Dozer (Truck Driver) b. Logging road* c. Caught (pinned and crushed) between truck and dozer+ d. Disconnecting dozer cable from truck e. Mechanical f. Mechanical (contact: equipment)

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Region III		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
WV (38) (Federal)	<p>On July 29, 1997, a 33-year-old male employee of Grimes Logging of West Virginia was fatally injured. The employee was using a 046-Stihl chainsaw to fell a 38-inch diameter red oak tree. He (the victim) made a 45-degree, nine inch common notch on the southeast side of the tree. When making his back cut, the chainsaw became lodged in the tree. The victim asked the skidder operator to hold the tree in place with the skidder while he retrieved another chainsaw to extract his chainsaw from the tree. While the victim was walking away, the skidder operator saw that the tree was going to fall and shouted to the victim that the tree was coming down. The victim ran toward the southwest and the tree fell in the same path, knocking him down with an eight-inch diameter limb. The victim was found laying face down with the limb across his lower legs and his head next to a rock that measured 34 inches long by 18 inches wide. The red oak was 58' 8" long, 38" in diameter at the stump and 9" in diameter at the top. There was 18" of rotten wood in the center of the tree.</p>	<p>a. Feller/Faller b. Cutting, felling area** c. Struck by falling tree+ d. Walking away from a cut up tree e. Procedural f. Human (contact: a tree)</p>

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Region III		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<u>Standards/Citation Information</u> a. Total number of citations issued: 3 b. Number of citations issued related to the event: 3 --1910.266(h)(1)(vi) (failure to fell, remove or avoid danger trees) --1910.266(h)(2)(v) (improper undercut) --1910.266(h)(2)(vi) (an improper back cut)	
WV (1) (Federal)	<p>On October 2, 1996, a 42-year-old male employee of R. Petrice Logging of West Virginia was fatally injured when the top of a tree broke off striking him.</p> <hr/> <u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0	a. Unknown b. Other: Unknown* c. Struck by falling tree top+ d. Unknown e. Procedural f. Human (contact: a tree)

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Logging Fatalities Investigated by the
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Region IV		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
AL (14) (Federal)	<p>On December 4, 1996, a 52-year-old male employee of Tombigbee Timber Company of Alabama was fatally injured. A danger tree (a dead oak approximately six inches in diameter at the bottom and 20 feet tall) was not felled, marked or removed. The skidder operator was pulling some logs from trees that had been previously felled. One of the logs hit the danger tree which then fell on a nearby “top-off” man (the victim). The victim received severe head injuries and died approximately 11 hours later of his injuries. The victim was working at a distance less than two tree lengths from the danger tree.</p> <hr style="border-top: 1px dotted black;"/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 2</p> <p>b. Number of citations issued related to the event: 2</p> <p>✓ --1910.266(h)(1)(vi) (failure to fell, remove or avoid danger trees)</p> <p>✓ --1910.266(d)(6)(i) (skidder operation not spaced far enough from limbing operation)</p>	<p>a. Limber/Bucker b. Limbing, bucking area ** c. Struck by falling danger tree++ d. Topping a tree e. Procedural f. Human (contact: a tree)</p>

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Region IV		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
AL (16) (Federal)	<p>On December 18, 1996, a 24-year-old male employee of Waldrep Logging, Inc. of Alabama was fatally injured. The employee was pulling a cable from the skidder to hook to a log. He was down the grade from the skidder and the skidder came down the grade striking him.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 4 b. Number of citations issued related to the event: 0</p>	<p>a. Machine/Equipment Operator: Skidder/Skidder b. Skidding area* c. Struck by skidder+ d. Pulling skidder cable to hook to log e. Mechanical f. Human (contact: equipment)</p>
AL (18) (Federal)	<p>On December 30, 1996, a 39-year-old male employee of Dailey Pulpwood & Logging Company of Alabama was fatally injured. The deceased was cutting a large pine tree down when he ran out of gas. He went to the landing and filled his chain saw with gas and returned to the area where he had been working. He started limbing two trees he had previously felled when the tree he had not finished cutting fell, striking him in the head.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 1 b. Number of citations issued related to the event: 0</p>	<p>a. Limber/Bucker (Feller/Faller) b. Limbing, bucking area* c. Struck by falling tree+ d. Limbing a tree e. Procedural f. Human (contact: a tree)</p>

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Region IV		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
AL (34) (Federal)	<p>On June 19, 1997, the 55-year-old male owner of A & S Trucking Company of Alabama was fatally injured. The owner/victim was loading logs onto a log truck using a Barko 160 A loader. Apparently, the jib broke loose from the coupling causing the loader to swing the log inside the cab, killing the operator. The cab was not equipped with the required wire mesh.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 1 b. Number of citations issued related to the event: 1 --1910.266(f)(3)(viii) (inadequate operator protective enclosure)</p>	<p>a. Machine/Equipment Operator: Log Loader (Owner) b. Log loading area* c. Struck by elevated log+ d. Loading logs onto log truck e. Mechanical f. Mechanical (contact: equipment)</p>
FL (30) (Federal)	<p>At approximately 8:00 a.m. on May 15, 1997, a 25-year-old male employee of Williston Timber Company, Inc. of Florida was fatally injured in a logging operation. The victim was struck in the head by a piece of timber that broke off the bottom of a water oak tree. The water oak had just been cut by another employee (the foreman) operating a John Deere Feller Buncher that had a 20-inch disc saw filing head. The foreman/operator did not see that the victim/sawyer had come within 75 feet of the equipment.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 3 b. Number of citations issued related to the event: 2 ✓ --1910.266(d)(6)(i) (employees felling trees not spaced far enough apart) --1910.266(i)(10)(i) (no certification of training)</p>	<p>a. Machine/Equipment Operator: Other: Sawyer b. Cutting, felling area* c. Struck by piece of wood++ d. Unknown e. Procedural f. Human (contact: a piece of wood)</p>

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* The victim was working alone, i.e., the victim was not within hearing and/or sight of other workers when he was fatally injured.

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+ The action that caused the victim's death resulted from tasks the victim was performing or actions the victim failed to take that caused his death, e.g., the victim was fatally struck by the tree he was felling or the victim failed to remove a standing danger tree before felling a near by tree.

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Region IV		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
GA (5) (Federal)	<p>On October 21, 1996, a 60-year-old male employee of S. L. Miller & Sons Lumber Company of Georgia was fatally injured. A crew of four men, three laborers and a crew leader were assigned to harvest more than 54,000 board feet of timber. One employee, the victim, was loading his truck with a knuckle boom and was unable to load one limbed tree properly. He placed the tree back into the yard. The yard was located on a 20-degree slope, and the victim placed the tree perpendicular to the slope of the mountain side. After securing the load in the truck, the victim exited the cab of the knuckle boom and proceeded to manually limb the tree with a nearby chain saw. While limbing, the tree began to roll down the hill. The tree rolled approximately 12-14 inches, striking the victim and rolling onto his legs and stopping at his hips. The victim received serious injuries and was immediately transported to the local hospital. He later died of additional complications.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 1 b. Number of citations issued related to the event: 1 --1910.266(i)(3) (employer failed to train employees)</p>	<p>a. Limber/Bucker (Laborer) b. Landing, log yard* c. Struck by the limbed tree log+ d. Limbing the tree e. Procedural f. Human (contact: a log)</p>

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Region IV		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
MS (6) (Federal)	<p>At approximately 11:00 a.m. on October 22, 1996, a 44-year-old male employee of Harold Harris Logging of Mississippi was fatally injured while attempting to cut pine trees behind a residential area. The employee (the victim) started cutting a tree but did not finish cutting it before going to a second tree. The second tree was within 35 feet of the base of the first cut tree. The victim cut the second tree and was limbing it when the first tree fell across the second tree, hitting the victim with limbs from the upper portion of the tree and causing crushing blows. The victim had been with the company six months. The day of the accident, the wind was at or about 20 mph and gusty. This would have contributed to the tree falling prior to it being cut completely through.</p> <p>[The company does not have any formal training for the employees. The employees are watched by the owner while they work during the first week to see if they can do the job. It was not understood why the victim did not get the skidder driver to pull the tree down before going to the second tree. The Owner said the victim should have had the skidder operator pull the tree over if he thought it would hang up in another tree. The owner was advised that he needed safety training to tell the employees what to do if they believe there will be a hang up.]</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 7 b. Number of citations issued related to the event: 0</p>	a. Limber/Bucker (Feller/Faller) b. Limbing, bucking area* c. Struck by (crushed by) a falling tree+ d. Limbing a tree e. Procedural f. Human (contact: a tree)

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Region IV		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
MS (7) (Federal)	<p>On October 23, 1996, a 44-year-old male employee of Jerry Mcgehee Logging of Mississippi was fatally injured. The employee (the victim) was attempting to cut a large oak tree that was next to a dead oak about the same size. When the live oak fell it went beside the dead oak and the spring action caused the dead oak to fall backwards onto the victim who was about 50 feet away from the butt of the tree he had cut. The victim may have been looking down at the saw or the ground when the dead tree fell on him. He told his boss that he did not see the tree coming. This company has new equipment with enclosed skidder doors and uses the hydro saw harvester to cut most of the trees. The employees wear chaps, hard hats, eye glasses, safety boots and gloves. They also have hearing protection available.</p> <p>[This company has all required safety equipment but should have made everyone aware of the dead trees and the problems they can cause during cutting and felling around them. If the employees get effective safety and health training and first aid training they will be up to our standards and should protect the other employees.]</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 3 b. Number of citations issued related to the event: 0</p>	<p>a. Feller/Faller b. Cutting, felling area* c. Struck by falling dead or danger tree+ d. Felling a tree e. Procedural f. Human (contact: a tree)</p>

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Region IV		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
MS (29) (Federal)	<p>At approximately 5:00 p.m. on April 30, 1997, a 62-year-old employee of Thomas Fowler Trucking, Inc. of Mississippi was fatally injured while he was attempting to bind a load of logs to his log truck's trailer. The truck was equipped with two wire rope binders, one near the front and the other near the rear of the trailer. The victim would normally bind the load at the front of the trailer first. On this occasion the victim bound the load from the rear of the trailer first. As he bound the load, the force being applied caused the end of one of the logs to be lifted over the front stanchion of the trailer allowing the end of the log to fall to the ground. The log struck the victim on the back causing his head to strike the metal frame of the trailer.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 1 b. Number of citations issued related to the event: 1 ✓ --1910.266(h)(6)(v) (logs on load not positioned to prevent slippage)</p>	<p>a. Machine/Equipment Operator: Truck: Driver b. Log loading area* c. Struck by falling (elevated) log+ d. Binding a load of logs to a trailer e. Procedural f. Human (contact: a log)</p>

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Region IV		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
NC (24) (State)	<p>On February 17, 1997, a 42-year-old male employee of Crowder Logging Company of North Carolina was fatally injured. A logging crew was harvesting storm-damaged timber. Most of the timber was on the ground. A skidder was being operated in the area to move the downed trees around so that an employee could get to them to cut the limbs from the top of the trees. One employee (the victim) was using a chain saw to cut the limbs off a downed tree. The victim was bent over with his back to a tree that fell and struck him in the back of the head. The tree that fell had a rotten base and two gouge marks from the blade of the skidder.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 2 b. Number of citations issued related to the event: 1 ✓ --1910.266(h)(1)(vi) (failure to fell, remove or avoid danger trees)</p>	a. Limber/Bucker b. Limbing, bucking area** c. Struck by falling dead or danger tree++ d. Limbing a tree e. Procedural f. Human (contact: a tree)
NC (42) (State)	<p>On August 19, 1997, a 24-year-old male employee of J & B Logging Timber Company of North Carolina was fatally crushed when the 75-foot oak tree he was manually felling rotated toward him, kicked back and fell on top of him.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	a. Feller/Faller b. Cutting, felling area* c. Struck by (crushed by) falling tree+ d. Felling the tree e. Procedural f. Human (contact: a tree)

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Region V		
State (Region) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
WI (17) (Federal)	<p>On December 19, 1996, a 44-year-old male employee of Tom Hageny Forest Products, Inc. of Wisconsin was fatally injured. The victim (the sawyer) had cut a tree that lodged in and amongst two other trees that had grown together, one was dead. The victim cut a second tree perpendicular to the first tree to dislodge the first tree, or he may have intended to fell the second tree at a different angle to miss the lodged tree. The trees were in a triangle after the accident. When the second tree fell, it hit the first tree (the lodged tree) which forced or snapped off the standing dead tree back toward the victim.</p> <hr style="border-top: 1px dotted black;"/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 9</p> <p>b. Number of citations issued related to the event: 4</p> <ul style="list-style-type: none"> ✓ --1910.266(h)(1)(vi) (failure to fell, remove or avoid danger trees) ✓ --1910.266(h)(2)(ii) (failure to assess trees for hazards and lean prior to felling) ✓ --1910.266(h)(2)(vi) (improper felling technique) ✓ --1910.266(i)(3)(vi) (employer failed to train employees) 	<p>a. Feller/Faller (Sawyer) b. Cutting, felling area* c. Struck by falling dead tree+ d. Felling a tree e. Procedural f. Human (contact: a tree)</p>

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Logging Fatalities Investigated by the
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Region VI		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
AR (13) (Federal)	<p>On December 4, 1996, a 22-year-old male employee of Robert Darden Logging of Arkansas was fatally injured while felling a 14-inch diameter hardwood tree during a logging operation. The employee (the victim) had made the appropriate under cut on the tree. He then started the back cut two inches above the under cut. About one third of the way through the trunk of the tree, the trunk split upwards about 10 feet and then pivoted upwards striking the victim in the neck and chest area and hurling him 11 feet, resulting in his death at the site. The victim was wearing required personal protective equipment (PPE).</p> <hr style="border-top: 1px dotted black;"/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 2 b. Number of citations issued related to the event: 0</p>	<p>a. Feller/Faller b. Cutting, felling area* c. Struck by (hurled by) barber-chaired tree+ d. Felling the tree e. Procedural f. Human (contact: a tree)</p>
AR (39) (Federal)	<p>At approximately 7:30 a.m. on August 12, 1997, a 30-year-old male employee of Sanford L. Nix, Inc. of Arkansas was severely injured in a rural wooded area. The employee was cutting two previously felled pine trees (14-15 inches in diameter and 50-60 feet tall) into log lengths when another pine tree (24-25 feet away) fell, striking him across the chest and knocking him to the</p>	<p>a. Limber/Bucker b. Limbing, bucking area* c. Struck by (crushed by) a falling tree+ d. Cutting trees into log lengths e. Procedural f. Human (contact: a tree)</p>

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Region VI		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<p>ground between the two pine trees he was cutting. The tree that fell rested on top of the two pine trees that the employee was cutting into logs. The employee sustained crushing injuries to the chest and was transported to the hospital. He was pronounced dead at 9:05 a.m.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 1 b. Number of citations issued related to the event: 0</p>	
LA (8) (Federal)	<p>On October 24, 1996, a 22-year-old male employee of Edward Dugdale Logging, Inc. of Louisiana was fatally injured by a falling tree. A co-worker was operating a shear machine to fell a 102-foot gum tree about 72 feet from the victim. The tree fell striking the victim while he was trimming another tree. He suffered massive head, neck, chest and abdominal injuries. The victim had two years of experience with the company as a saw hand.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 1 b. Number of citations issued related to the event: 1 --1910.266(d)(6)(ii) (tree felling operation within two tree lengths of limbing operation)</p>	a. Limber/Bucker b. Limbing, bucking area** c. Struck by falling tree++ d. Limbing a tree e. Procedural f. Human (contact: a tree)

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Region VI		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
LA (41) (Federal)	<p>On August 18, 1997, a 60-year-old male employee of D. C. Cloud Logging of Louisiana was fatally injured. The employee felled a 60-foot tree that became lodged in another tree (a support tree) about 30 feet away. While the employee was cutting the support tree, the lodged tree fell striking the employee in the head. The employee was taken to the hospital with weak vital signs and died at 11:49 a.m. on August 18, 1997, of head trauma.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 2 b. Number of citations issued related to the event: 2 --1910.266(h)(1)(vi) (failure to fell, remove or avoid danger trees) --1904.8 (employer failed to report the fatality)</p>	a. Feller/Faller b. Cutting, felling area* c. Struck by dislodged tree+ d. Felling a tree e. Procedural f. Human (contact: a tree)
LA (45) (Federal)	<p>On September 22, 1997, a 28-year-old male truck driver of Clarks Timber Company, Inc. of Louisiana was severely injured when he slipped and fell over the rear of a 210-D loader, hitting his head on slasher equipment below. He was hospitalized and died of his injury on September 25, 1997. The employee had two years of experience as a truck driver/operator with the company.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 2 b. Number of citations issued related to the event: 2 --1910.266(i)(3)(ii) (employer failed to train employees) --1904.8 (employer failed to report the fatality)</p>	a. Machine/Equipment Operator: Loader b. Landing, log yard* c. Slipped/fell from elevation+ d. Climbing onto equipment e. Procedural f. Human (contact: equipment)

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Region VIII		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
MT (15) (Federal)	<p>At approximately 10:30 a.m. on December 5, 1996, a 37-year-old male employee of Mitchell Logging of Montana was fatally injured when he was struck by a tree. The employee was working alone, beyond eye sight and hearing, and was not found for approximately two hours after the accident.</p> <hr style="border-top: 1px dotted black;"/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 12</p> <p>b. Number of citations issued related to the event: 3</p> <p style="padding-left: 20px;">--1910.266(h)(2)(vi and vii) (improper felling technique)</p> <p style="padding-left: 20px;">--1910.266(i) (employer failed to train employees)</p> <p style="padding-left: 20px;">✓--1904.8 (failure to report the fatality)</p>	<p>a. Feller/Faller</p> <p>b. Cutting, felling area*</p> <p>c. Struck by falling tree+</p> <p>d. Felling the tree</p> <p>e. Procedural</p> <p>f. Human (contact: a tree)</p>

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Region VIII		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
UT (44) (State)	<p>At approximately 3:30 p.m. on September 14, 1997, a 49-year-old male employee of Triple R. Timber Harvesting of Utah was fatally injured. The victim felled a tree (approximately 75 feet tall and 24 inches at the base) onto a dead tree (approximately 70 feet tall). The dead tree was approximately 60 feet from the base of the tree being felled and was oriented parallel to the felled tree. The dead tree fell, striking the victim. The diameter of the dead tree where it struck the victim was six inches. The terrain where the accident occurred was moderate to thickly forest and the ground was slightly sloping. The deceased had more than 30 years of experience in timber harvesting.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	a. Feller/Faller b. Cutting, felling area* c. Struck by falling dead tree+ d. Felling a tree e. Procedural f. Human (contact: a tree)

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++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Region VIII		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standards/Citations Related to the Event	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
UT (10) (State)	<p>At approximately 3:30 p.m. on November 1, 1996, a 31-year-old male employee of Triple R. Timber Harvesting of Utah was fatally injured when he was struck in the head by a falling tree while logging on Forest Service Land in Utah. The accident occurred because the victim was not where he was supposed to be. Four loggers were each assigned a 'strip' within which they were to remain while felling trees by cutting the trees at the base with a chain saw and allowing them to drop. The strips were spaced far enough apart to maintain safe working distances. The victim strayed from his assigned strip and was working closer to the strip next to him than he was supposed to have been. He was 91 feet from the base of the tree that killed him.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 1 b. Number of citations issued related to the event: 1 --1910.266(h)(1)(iv) (employee approached timber felling operation closer than two tree lengths)</p>	a. Feller/Faller b. Cutting, felling area* c. Struck by falling tree++ d. Felling trees e. Procedural f. Human (contact: a tree)

✓ The citation for this standard was identified in the Integrated Management Information System (IMIS) as relating to the fatal event. Other citations, those with no ✓ mark, are also included here because they appear to relate to the circumstances of the fatal event.

* The victim was working alone, i.e., the victim was not within hearing and/or sight of other workers when he was fatally injured.

** The victim was working within hearing and/or sight of other workers when he was fatally injured.

+ The action that caused the victim's death resulted from tasks the victim was performing or actions the victim failed to take that caused his death, e.g., the victim was fatally struck by the tree he was felling or the victim failed to remove a standing danger tree before felling a near by tree.

++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

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Region IX		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
CA (2) (State)	<p>On October 7, 1996, a 24-year-old male employee of Erickson Air-Crane of California was fatally injured. The employer operates a helicopter logging operation at the site of the accident. The helicopter was bringing a turn in and the loader was between the log deck and the chaser safe area, with the tracks pointed toward the drop zone and the boom toward the log deck. The loader operator said he checked and his men were in the safe area. The turn hit the ground and the loader operator saw the chasers run toward the turn. The operator then swung the boom away from the drop zone to clear the long line of the helicopter. He watched the long line clear and started to travel toward the drop zone as he swung the boom toward the drop zone while he checked his men out the right window. The loader operator heard a chaser (Tom) who was on light duty and in the safe zone coiling chokers, yell, so he stopped and started swinging back and looking to see what the yelling was about. The operator was Tom pointing to go the other way, so he started traveling away from the drop zone and while looking back saw feet sticking out from under the track.</p>	<p>a. Other: Chaser b. Log loading area** c. Run over by loader++ d. Unknown e. Procedural f. Human (contact: equipment)</p>

✓ The citation for this standard was identified in the Integrated Management Information System (IMIS) as relating to the fatal event. Other citations, those with no ✓ mark, are also included here because they appear to relate to the circumstances of the fatal event.

* The victim was working alone, i.e., the victim was not within hearing and/or sight of other workers when he was fatally injured.

** The victim was working within hearing and/or sight of other workers when he was fatally injured.

+ The action that caused the victim's death resulted from tasks the victim was performing or actions the victim failed to take that caused his death, e.g., the victim was fatally struck by the tree he was felling or the victim failed to remove a standing danger tree before felling a near by tree.

++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Region IX		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<u>Standards/Citation Information</u> a. Total number of citations issued: 2 b. Number of citations issued related to the event: 0	
CA (28) (State)	<p>On April 15, 1997, a 43-year-old male employee of High Country Timber, Inc. of California was fatally injured. The employee (victim) was cutting timber on steep terrain on State forest land. He was at the small end of a felled tree using a chain saw when the tree (log) shifted or pivoted, striking the victim and causing fatal internal injuries.</p> <hr/> <u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0	a. Limber/Bucker b. Limbing, bucking area* c. Struck by felled tree that shifted+ d. Using a chain saw to limb a felled tree e. Procedural f. Human (contact: a tree log)

✓ The citation for this standard was identified in the Integrated Management Information System (IMIS) as relating to the fatal event. Other citations, those with no ✓ mark, are also included here because they appear to relate to the circumstances of the fatal event.

* The victim was working alone, i.e., the victim was not within hearing and/or sight of other workers when he was fatally injured.

** The victim was working within hearing and/or sight of other workers when he was fatally injured.

+ The action that caused the victim's death resulted from tasks the victim was performing or actions the victim failed to take that caused his death, e.g., the victim was fatally struck by the tree he was felling or the victim failed to remove a standing danger tree before felling a near by tree.

++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Region IX		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
CA (43) (State)	<p>On September 4, 1997, a 27-year-old male employee of J & K Logging of California was fatally injured. On the day of the injury, the employer was operating a cable yarding system to remove downed timber (logs) from the private lands of a wood products company. The victim was working as a rigging slinger. His job was to attach chokers to logs so they could be moved to a landing and loaded onto logging trucks. A turn of logs (several logs) was being hauled up the hill. One of the logs hit a piece of wood on the ground which dislodged it and caused it to roll down the hill. The victim was struck and fatally injured by the piece of wood.</p> <hr/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 3 b. Number of citations issued related to the event: 1 -6328(f) (employee was not in the clear during winching of logs)</p>	a. Machine/Equipment Operator: Yarding Machine: Rigging Slinger b. Other: Logging area** c. Struck by piece of wood+ d. Waiting for a turn of logs to be hauled in e. Procedural f. Human (contact: a piece of wood)

✓ The citation for this standard was identified in the Integrated Management Information System (IMIS) as relating to the fatal event. Other citations, those with no ✓ mark, are also included here because they appear to relate to the circumstances of the fatal event.

* The victim was working alone, i.e., the victim was not within hearing and/or sight of other workers when he was fatally injured.

** The victim was working within hearing and/or sight of other workers when he was fatally injured.

+ The action that caused the victim's death resulted from tasks the victim was performing or actions the victim failed to take that caused his death, e.g., the victim was fatally struck by the tree he was felling or the victim failed to remove a standing danger tree before felling a near by tree.

++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

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Region X		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
ID (31) (Federal)	<p>On June 2, 1997, a 43-year-old male employee of Jensen Logging of Idaho was fatally injured. While skidding trees on a salvage logging sale, the deceased was struck in the esophagus region by a tree limb which was believed to be caught in the skidder tracks. The skidder was equipped with side and rear screens and deflectors, but was not equipped with a screen for the front of the cab. The limb likely entered through the front of the cab striking the deceased on the neck and causing his esophagus to close due to swelling.</p> <hr style="border-top: 1px dotted black;"/> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0</p>	<p>a. Machine/Equipment Operator: Skidder/Skidder b. Skidding machine area* c. Struck by felled tree limb caught in skidder tracks (jill poke)+ d. Skidding trees e. Procedural f. Human (contact: equipment)</p>
OR (4) (State)	<p>On October 18, 1996, a 42-year-old male employee of K & W Timber, Inc. of Oregon was fatally injured. The employee (the victim) was the chaser on a log landing. The operator of the cat log loader stated that he had last seen the victim working over by the log truck that he had just finished loading. The victim was stamping the logs at the truck end of the load. The log loader operator tracked to the north to pick up some logs the log processor had placed in a pile. The loader picked some</p>	<p>a. Other: Chaser b. Landing, log yard* c. Crushed under tracks+ d. Stamping logs e. Procedural f. Human (contact: equipment)</p>

✓ The citation for this standard was identified in the Integrated Management Information System (IMIS) as relating to the fatal event. Other citations, those with no ✓ mark, are also included here because they appear to relate to the circumstances of the fatal event.

* The victim was working alone, i.e., the victim was not within hearing and/or sight of other workers when he was fatally injured.

** The victim was working within hearing and/or sight of other workers when he was fatally injured.

+ The action that caused the victim's death resulted from tasks the victim was performing or actions the victim failed to take that caused his death, e.g., the victim was fatally struck by the tree he was felling or the victim failed to remove a standing danger tree before felling a near by tree.

++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Region X		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	logs and tracked back to the south and placed the logs. As he was tracking back to the north, he got a glimpse of the victim under his track face down in the mud. The operator immediately spun the cat around and used the thumb of the loader to lift the track off the victim. He died on the landing. <u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0	
OR (36) (State)	At approximately 12:00 p.m. on July 11, 1997 , the 45-year-old male owner of Eugene Allen Townsend of Oregon was fatally injured. The victim was bucking a log when he was struck by a tree being felled by his employee. The employee was felling a 100-foot tree toward the landing on which the victim was bucking a root wad off a log that he had pulled out of the brush with the Clark 667 rubber tired skidder. The victim was found deceased by the timber faller who called for assistance. <u>Standards/Citation Information</u> a. Total number of citations issued: 0 b. Number of citations issued related to the event: 0	a. Limber/Bucker (Owner) b. Limbing, bucking area** c. Struck by falling tree++ d. Bucking a log e. Procedural f. Human (contact: a tree)

✓ The citation for this standard was identified in the Integrated Management Information System (IMIS) as relating to the fatal event. Other citations, those with no ✓ mark, are also included here because they appear to relate to the circumstances of the fatal event.

* The victim was working alone, i.e., the victim was not within hearing and/or sight of other workers when he was fatally injured.

** The victim was working within hearing and/or sight of other workers when he was fatally injured.

+ The action that caused the victim's death resulted from tasks the victim was performing or actions the victim failed to take that caused his death, e.g., the victim was fatally struck by the tree he was felling or the victim failed to remove a standing danger tree before felling a near by tree.

++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Region X		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
WA (3) (State)	<p>On October 8, 1996, a 56-year-old male employee of M & T Logging, Inc. of Washington was fatally injured. The deceased had undercut and back cut a douglas fir tree, 120-foot high and 19-20 inches in diameter at the butt. The tree was faced up to fall toward the east. The tree fell toward the south when it finally fell. The deceased was found between the felled tree and another standing tree that was eight feet, six inches behind the stump of the felled tree.</p> <hr/> <p><u>Standards/Citation Information</u></p> <p>a. Total number of citations issued: 4</p> <p>b. Number of citations issued related to the event: 4</p> <ul style="list-style-type: none"> ✓ -296-54-513 (no written accident prevention program) ✓ -296-54-529(15) (supervisor did not regularly inspect work of the cutting crews to ensure the work was done in a proper and safe manner) ✓ -296-54-529(12) (inadequate undercut and hinges) ✓ -296-54-529(27) (improper back cut) 	<p>a. Feller/Faller b. Cutting, felling area* c. Struck by falling tree+ d. Felling the tree e. Procedural f. Human (contact: tree)</p>
WA (23) (State)	<p>On February 17, 1997, a 49-year-old male employee of Reece Bros Logging Company, Inc. of Washington was fatally injured. The victim, the operator of a 1991 Denis Model D3300TNS log delimeter, was attempting to file the chain on the cut off saw on the head of the delimeter when the boom telescoped out crushing him between the delimeter head and the ground. He suffered fatal chest injuries.</p>	<p>a. Machine/Equipment Operator: Other: Delimeter b. Landing, log yard* c. Crushed by delimeter head+ d. Filing the chain on the delimeter e. Procedural f. Human (contact: equipment)</p>

✓ The citation for this standard was identified in the Integrated Management Information System (IMIS) as relating to the fatal event. Other citations, those with no ✓ mark, are also included here because they appear to relate to the circumstances of the fatal event.

* The victim was working alone, i.e., the victim was not within hearing and/or sight of other workers when he was fatally injured.

** The victim was working within hearing and/or sight of other workers when he was fatally injured.

+ The action that caused the victim's death resulted from tasks the victim was performing or actions the victim failed to take that caused his death, e.g., the victim was fatally struck by the tree he was felling or the victim failed to remove a standing danger tree before felling a near by tree.

++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

Region X		
State (Case No.) (Federal) (State)	Description of Fatal Incident and Standard(s) Cited Related to the Incident	Summary Information: a. Employee Occupation b. Work Location c. Accident Type d. Employee Activity e. Incident Type f. Factor Related to Incident
	<u>Standards/Citation Information</u> a. Total number of citations issued: 2 b. Number of citations issued related to the event: 2 ✓ -296-54-515(6) (failure to secure delimeter boom with safety chain) -296-54-507(5) (no accident prevention program)	
WA (33) (State)	<p>On June 13, 1997, a 58-year-old male employee of Weyerhaeuser Company & Subsidiaries of Washington was fatally injured when the company vehicle (a pick up truck) he was driving to the job site left the road way, traveled down a steep slope and came to rest along a river bank.</p> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 1 b. Number of citations issued related to the event: 0</p>	a. Machine/Equipment Operator: Truck: Driver b. Logging road* c. Crashed: Injured in truck+ d. Driving a truck e. Procedural f. Human (contact: equipment)
WA (37) (State)	<p>At approximately 12:00 p.m. on July 28, 1997, a 56-year-old male employee of Jerry L. Harshman D.b.a. J. Har Logging of Washington was fatally injured when the brakes of the loaded log truck he was operating gave out, causing the truck to overturn near the bottom of the grade. The victim was crushed in the truck.</p> <p><u>Standards/Citation Information</u> a. Total number of citations issued: 1 b. Number of citations issued related to the event: 0</p>	a. Machine/Equipment Operator: Truck: Driver b. Logging road* c. Crashed: Crushed in truck+ d. Driving a loaded log truck e. Mechanical (brake failure) f. Mechanical (brakes) (contact: equipment)

✓ The citation for this standard was identified in the Integrated Management Information System (IMIS) as relating to the fatal event. Other citations, those with no ✓ mark, are also included here because they appear to relate to the circumstances of the fatal event.

* The victim was working alone, i.e., the victim was not within hearing and/or sight of other workers when he was fatally injured.

** The victim was working within hearing and/or sight of other workers when he was fatally injured.

+ The action that caused the victim's death resulted from tasks the victim was performing or actions the victim failed to take that caused his death, e.g., the victim was fatally struck by the tree he was felling or the victim failed to remove a standing danger tree before felling a near by tree.

++ The action that caused the victim's death resulted from tasks being performed by other workers or actions other workers failed to take that caused his death, e.g., the victim was struck by a tree felled by another worker.

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Definitions for Appendices A - D

Case Number

The case number column identifies the unique number assigned to each logging fatality case file reviewed. The files were reviewed in the order that the fatalities occurred beginning with the first fatal incident of the Federal fiscal year, October 1 - September 30.

This column also identifies the Federal region where the fatality occurred and the jurisdiction that conducted the investigation – Federal jurisdiction, the Federal Occupational Safety and Health Administration, or State jurisdiction, the State occupational safety and health program.

Description of Fatal Incident

The description of fatal incident column provides a statement of the facts surrounding each logging fatality. This includes, where available, information on the time and date of the incident, the age, sex and occupation of the victim, the establishment and State where the fatal incident occurred, the task being performed by the victim at the time of death, the nature of the incident and the injuries that were sustained by the victim.

Summary Information

In the summary information column, the facts surrounding each logging fatality are broken out into categories.

a. **Employee Occupation**

The employee occupation category reflects the specific occupation the victim was engaged in at the time of the fatal incident. The victim's occupation is defined by his logging activity. For example, if the victim was cutting down a tree when he was killed, his occupation would be identified as a Feller or Faller.

For victims who were operating machines or equipment at the time of death, their occupation is listed as 'Machine/Equipment Operator' followed by a colon and the type machine or equipment being operated. For victims participating in the

operation of machines or equipment, e.g., skidding machines, their occupation is listed as 'Machine/Equipment Operator' followed by the type of machine or equipment being operated, and, where determined, the particular function the victim was performing, e.g., a choker setter.

Where a victim's occupation at the time of death could not be determined from the information provided, or lack thereof, his occupation is listed as 'unknown'.

** A second occupation is included for some victims. The second occupation reflects the occupation the victim was engaged in prior to his death, and is different from the victim's occupation at the time of death. A second occupation is referenced only when the related action or actions of the victim resulted in his death. For example, a victim (a Limber) was limbing a tree that was on the ground when he was fatally struck by a falling tree. The source of his injury was a tree that he had cut earlier (as a Feller) that became lodged in another tree. The tree became dislodged while the victim was limbing another tree, striking him on the head and causing fatal injuries. Second occupations are identified in parentheses.

NOTE: It is relatively common for logging employees to perform in multiple occupations, e.g., Feller, Limber and Bucker, Skidder Operator, and etc. This may be especially true in small logging establishments. In FY 1996 and FY 1997, almost 70% of all logging victims were employed by companies with fewer than 10 employees.¹

b. **Work Location**

The work location is defined by the occupation the victim was engaged at the time of the fatal incident. For example, if the Feller (the victim) was cutting down a tree when he was killed, his work location is identified as the 'cutting, felling area'.

Where a victim's work location at the time of death could not be determined from the information provided, or lack thereof, his work location is listed as 'unknown'.

NOTE: In the logging industry, the designated work location changes with the occupation or activity being performed. For example, if trees are being felled, the work location becomes the cutting, felling area.

¹ Review of Selected Logging Fatalities Investigated by the Occupational Safety and Health Administration (OSHA), FY 1996 - FY 1997, Part 1 of 2, December 8, 1998

When these same trees are being limbed and bucked, the work location becomes the limbing, bucking area. The same work location becomes the skidding area when the logs from these felled trees are being moved to the log loading area.

c. **Accident Type**

The accident type describes the specific action that resulted in the victim's death. For example, the victim was 'struck by' a falling tree.

Where the specific action that resulted in the victim's death could not be determined from the information provided, or lack thereof, the accident type is listed as 'unknown'.

** In a number of cases, the victim's death is associated with a sequence of actions. For example, an employee is 'struck by' a falling tree that knocks him to the ground. The tree then falls on top of him and he is 'crushed by' its force and weight. The victim was 'struck by' and then 'crushed by' the same tree. Where a sequence of actions was indicated or understood, the second and succeeding actions are provided in parentheses after the first action, and in the order that they should have occurred.

d. **Employee Activity**

What the employee or victim was doing at the time of his fatal injury is described as employee activity. For example, the victim was 'cutting down a tree'.

The employee's or victim's activity at the time of death was not always clearly related in the case file. In these cases, the determination was based on inferences or suggestions. For example, if the case file indicated that the victim was found fatally injured under the tracks of a skidder, his activity at the time of death might be listed as 'skidding logs'.

Where the employee's or victim's activity at the time of death could not be determined from the information provided, or lack thereof, the employee's or victim's activity is listed as 'unknown'.

e. **Incident Type**

The incident type represents an assessment or analysis of the events leading up to the fatal incident. Each fatal incident is categorized by type.

(1) **Procedural**

Procedural incidents are incidents that resulted from the victim, other employee(s) or the employer not following designated safety and health work procedures, or there were no available operating procedures as required. These include the safe guarding of the work area, the use of appropriate personal protective equipment, and all work activities under the control of the employees and the employer.

(2) **Mechanical**

These are incidents that resulted from the malfunctioning of equipment. For example, the employee or victim parks a skidder on a 20-degree slope of a hill and engages the parking brake. As he walks downhill from the skidder, the parking brake disengages causing the skidder to roll backwards, striking and pinning the employee against a tree.

(3) **Material**

These are incidents that resulted from the failure of component parts. For example, during the operation of a yarder, a guyline breaks causing the yarder tower to separate from its carriage, endangering the lives of near by employees.

(4) **Structural**

These are incidents that resulted from the collapse of buildings or other structures.

(5) **Environmental**

These are incidents where extreme, sudden and unexpected changes in environmental conditions played a primary part in triggering the incident. High winds, icy surfaces, the sudden presence of hazardous gases, etc., are examples.

(6) **Other**

These are incidents that do not meet the preceding definitions.

f. **Factor Related to the Incident**

A factor related to the incident is an element of the chain of events that can be directly associated with the cause of the fatal incident.

(1) **Human Factors** (procedures)

These are factors that can be directly associated with what the victim involved, other employee(s) or the employer did or failed to do that caused the fatal incident. For example, improper or dangerous work procedures were used, safety procedures were not followed or personal protective equipment was not worn when required. Included is any work activity or procedure for such under the direct control of the victim, fellow employee(s) and the employer.

The information provided in parentheses indicates whether the human factor related to the victim's contact with trees, logs, machines, equipment, material, structures, or exposure to extreme weather or hazardous chemicals.

- ★ Employers are responsible for providing safe and healthful operating procedures and ensuring employee compliance.

(2) **Mechanical Factors** (machines/equipment)

These factors can be associated with the failure of machines or equipment to function properly, and the interaction between the machine or equipment and the workers. For example, the employee or victim parks a skidder on a 20-degree slope of a hill and engages the parking brake. As he walks downhill, the parking brake disengages, causing the skidder to roll backwards, striking and pinning the employee against a tree.

- ★ Employers are responsible for the safety of machines and equipment.

(3) **Material Factors** (products)

These factors can be associated with the failure of products or the failure of products to perform as specified by the manufacturer, and the interaction between the product and the workers. For example, the employee or victim is standing near a yarder when a guyline breaks, causing the tower to

separate from its carriage and be pulled in the direction of the turn. The top of the tower turns in the direction of the employee and one of the guylines snaps taut, striking the employee in the back of the head.

★ Employers are responsible for the safety of products.

(4) **Structural Factors** (buildings, platforms, etc.)

These factors can be associated with the collapse of buildings, platforms or other structures, and the interaction between the structure and the workers.

★ Employers are responsible for the safety of workplace structures.

(5) **Environmental Factors** (weather, chemical exposures)

These factors relate to extreme, sudden and unexpected changes in environmental conditions in the workplace which strongly and adversely affect working conditions. High winds, icy surfaces, the sudden presence of hazardous gases, etc., are examples.

★ The employer has little control over extreme and unexpected changes in the weather or the sudden presence of hazardous gases.

(6) **Other Factors**

These are factors that cannot be assigned to the other three categories.

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Glossary of Logging Terms

This Glossary reflects terms used in this report as well as terms not used that help to clarify and explain described situations.

BACKCUT: (Felling Cut)	The last of the three cuts required to fall a tree. Located on the opposite side of the tree from the face and minimally 2" above the horizontal cut of the face. The 2" is referred to as stump shot and prevents the tree from kicking back over the stump toward the faller. The backcut must never be continued to a point at which no holding wood remains. Variations of backcutting are discussed in: face-boring backcut, side-boring backcut, and side-notching backcut.
BACK LEAN/ SIDE LEAN:	Weight of tree is opposite or opposed to the intended felling direction.
BALLISTIC NYLON:	A nylon fabric of high tensile properties designed to provide protection from lacerations.
BAR OR BLADE:	That part of the chain saw upon which the cutting chain travels. Long, thin projection of the chain saw upon which the saw chain travels. Improper use of the bar results in kickbacks and saw cuts. It is the extreme top and bottom of the bar's nose that is sensitive.
BARBER-CHAIR:	Vertical split of a tree during the falling procedure. Generally a result of improper facing and/ or backcutting. Characterized by a portion of the fallen tree being left on the stump.
BASE OF TREE:	That portion of a natural tree not more than three feet above ground level.
BED:	The intended position in which a tree will be felled.

BIGHT OF THE LINE:	Any area where a person is exposed to a controlled or controlled moving line.
BIND OR BOUND:	Series of pressures in a felled tree resulting from objects (terrain, stumps, windfalls, etc.), which prevent the tree from lying flat on the ground. The two major components of bind are impression and tension. It is their directional pressures that determine the technique and procedure used while bucking.
BINDER:	A hinged lever assembly for connecting the ends of a wrapper to tighten the wrapper around the load of logs or materials.
BLOWN-DOWN:	An area of standing timber which has been blown over by strong winds or storms.
BLOW-DOWN:	Trees that have been blown down as a result of wind.
BORING:	Method of using the nose or tip of the bar to saw into the tree while falling or bucking.
BOTTOM BIND:	One of the five basic tree positions commonly encountered while bucking. A tree in a bottom bind situation is tensioned on the top and compressed on the bottom.
BRUSH-OUT OR SWAMP-OUT:	To clean out brush and other material around the base of trees to be felled or logs to be bucked. Gives protection against saw kickback and provides safe footing.
BUCK:	To cut a felled tree into logs.
BUCKING:	Process of sawing a felled tree into sections called logs. Length of the log is dependent on the species of the tree and what type of product it will be made into.
BULLBUCK OR BULLBUCKER:	Supervisor of the fallers. Among his responsibilities are assignment of fallers to working areas and insurance that work is done safely and efficiently.
BULLBUCKER:	A foreman or supervisor of falling and bucking operations.

BUTT: That end of the log or tree sawn from the stump; i.e. butt-end.

BUTT LOG: Portion of a felled tree from the butt to the first bucking cut.

BYPASS: Situation created when the two cuts of the undercut (free cut) do not meet exactly, i.e. one bypasses the other. Creates undesirable results such as barber chairing, cracked tree butts, excessive fiber pull and misdirected fall of the tree.
(Dutchman)

CABLE YARDING: The movement of felled trees or logs from the area where they are felled to the landing on a system composed of a cable suspended from spars and/or towers. The trees or logs may be either dragged across the ground on the cable or carried while suspended from the cable.

CAT-FACE: Scar or deformed section at the base of a tree caused by rot or fire.

CLEAR-CUT: An area in which all of the trees have been or will be felled, bucked and skidded in one operation. When all trees in a given area are felled.

CHOCK: A block, often wedge shaped, which is used to prevent movement; e.g., a log from rolling, a wheel from turning.

CHOCKER: A sling used to encircle the end of a log for yarding. One end is passed around the load, then through a loop eye, end fitting or other device at the other end of the sling. The end that passed through the end fitting or other device is then hooked to the lifting or pulling machine.

CHOKER: A length of wire rope with attachments for encircling the end of a log to be yarded.

**CONVENTIONAL
FACE:** One of the three types of faces commonly used to fall a tree; the face or undercut is taken from the butt of the tree.

CORNERS: The extreme outside position of the holding wood on either side of the tree.

CUT-UP: Tree or log left standing or suspended with the falling or bucking cuts almost completed.

CUTTER: One whose primary job is to fall, buck or limb trees before they are moved to the landing area.

DANGER TREE: A standing tree that presents a hazard to employees due to conditions such as, but not limited to, deterioration or physical damage to the root system, trunk, stem or limbs, and the direction and lean of the tree.

or

A standing, live or dead tree, including snags, with evidence of deterioration or physical damage to the root system, trunk or stem. When determining if a tree is dangerous, the degree and direction or lean shall be an important factor.

or

Any tree of any height, dead or alive, that presents a hazard to workers because of rot, root, stem or lime damage, lean, or any other observable condition created by natural process or man-made activity.

DEBARK: To remove bark from trees or logs. Debark generally denotes mechanical means as opposed to manual peeling.

DECK: A stack of trees or logs.

DESIGNATED PERSON: An employee who has the requisite knowledge, training and experience to perform specific duties.

DOG LINE: Type of line used to fasten logs or timber products together by the use of dogs.

ESCAPE ROUTE: A predetermined path of exit used by fallers when falling or bucking. The essential components of an escape route are: selection of the desired direction and distance, prior to falling or bucking and a well-cleared path through which to escape. Also known as retreat path.

EXPERIENCE PERSON: A person who has been trained and has participated in the subject process for a period of time, long enough to thoroughly acquaint the person with all facets of the process.

EXTREME WEATHER CONDITIONS: Includes, but is not limited to:

Strong winds (applies to timber areas only) – Wind velocity that reaches sufficient force to blow limbs from standing trees or cause windfalls or prevent cutters from falling of trees in the desired direction;

Impaired vision – Conditions such as falling snow, sleet, mist, fog, rain, dust or darkness which substantially impair visibility to the extent that employees cannot clearly see signals, moving vehicles, equipment and lines, falling trees or other hazards;

Hazardous snow or icing conditions – Snow or ice conditions which prevent escape from hazards such as falling trees, moving logs, vehicles or similar hazards; or lighting.

FACE: A section of wood sawn and removed from a tree's base. Its removal allows the tree to fall and assists in direction where it will fall. The face is comprised of two separate cuts which have constant relationships; the horizontal cut must be at least 1/3 the diameter of the tree, the sloping cut must be angled enough to allow a wide opening and the two cuts must not cross each other. See notch cut and undercut.

**FACE-BORING
BACKCUT:** Special alteration of standard backcutting procedure used to handle particular trees such as those which are large or leaning heavily. Face-boring reduces the amount of wood remaining to be cut prior to the final backcutting.

FALLER: Timber faller-bucker (coastal) or tree faller (interior).

or

Specialist who falls and bucks trees in a safe manner while utilizing as much of the tree as possible. In some areas the faller only cuts the trees down and a bucker saws them into logs.

FELL (Fall): To cut down trees.

FELLER (Faller): An employee who fells trees.

**FRONT END
LOADER:** A mobile machine mounted on a wheeled or tracked chassis, equipped with a grapple, tuck, bucket, or fork-lift device, and employed in the loading, unloading, stacking, or sorting of logs or materials.

GUNNING OR SIGHTING:	Technique of aligning the handle bars and/or gunning mark with the desired falling direction. Since the gunning mark and handle bars are at a 90-degree angle to the bar, exact position of the face, in relation to the desired falling location, can easily be established.
HANG-UP:	Situation in which a tree is lodged in another and prevented from falling to the ground. Results from a number of causes such as improper facing and/or backcutting and wind. Can be very dangerous.
HAULBACK:	A line used to pull the buttrigging and mainline to the logs to be yarded.
HAZARDOUS FALLING AREA:	The area within a circle centered on the tree being felled and having a radius not less than twice the height of that tree.
HEAD LEAN:	One of the two natural leaning forces found in most trees. Head lean is the most prominent outward slant or lean of a tree in reference to its base.
HOLDING WOOD:	Section of wood located between the face and the backcut. Its purpose is to prevent the tree from separating from the stump until it has been committed to the face. It also helps direct where the tree will fall. The holding wood must never be completely sawn off.
HOOKTENDER:	The worker that supervises the method of moving the logs from the woods to the landing.
HORIZONTAL FACE CUT:	First of the two cuts required to face a tree. Its depth is minimally 1/3 the diameter of the tree and level.
HUMBOLDT FACE:	One of the two types of faces commonly used to fall a tree. The face section is removed from the stump of the tree.
HUNG/LODGED TREE:	See Hang-up.
IN THE CLEAR:	A position within the work area where the probability of hazardous contact with falling trees, moving logs, rootwads, chunks, material, rigging and

equipment is minimized by distance from the hazards and/or use of physical barriers, such as stumps, trees, terrain or other objects providing protection.

- KICK-BACK:** A strong thrust of the saw back toward the faller generally resulting from improper use of the nose of the bar or the pinching of the bar in a cut. Kickback causes loss of control of the saw and this in turn results in numerous saw cuts each year. Kick-back also refers to a tree jumping back over the stump toward the faller. This kind of kick-back generally results from a tree being felled into standing timber and/or lack of stump-shot.
- LANDING:** Any place where logs are laid after being yarded, awaiting subsequent handling, loading, and hauling.
- LEAD:** Predetermined direction of falling the trees of a particular strip or area in regard to the relation of the trees to one another and their combined relationship to the surrounding terrain.
- LEAD:** The established direction in which all trees in a quarter or strip are to be felled, usually governed by the terrain of the area, or its general slope or skid road system.
- LEAN:** Refers to the directional tilt of a tree away from its vertical position. Many times two lean forces may be in play in the same tree. They are referred to as head lean and side lean. The lean, or leans, of a tree can be easily established with the use of a plumb-bob or axe handle.
- LIMB LOCK:** A series of cuts made on limbs to release back or side pressure and create a stay in the limb that will prevent the limb from either kicking back and striking the logger or pinching the saw.

or

Limbing technique used to more safely handle back pressure and sideways pressure on limbs in order to reduce the likelihood of a limb under pressure kicking back and striking the logger's leg or pinching the saw. Two bypassing cuts are made, one on the top side and one on the bottom side of the limb (top and bottom refer to the top and bottom of the limb as if the tree were standing up). The cut on the top of the limb is made closer to the trunk of the tree and the cut on the bottom is made further out on the limb. This creates a step in the limb which helps prevent the limb from kicking out or back toward the logger.

LIMBING: To cut branches off felled or standing trees.

LOADING BOOM: Any structure projecting from a pivot point to guide a log when lifted.

LODGED TREE: A tree leaning against another tree or object which prevents it from falling to the ground.
(Hung Tree)

LOG: A tree segment suitable for subsequent processing into lumber, pulpwood, or other wood products, including but not limited to poles, piling, peeler blocks, sections and/or bolts.

LOGGING MACHINE: A machine used or intended for use to yard, move, or handle logs, trees, chunks, trailers, and related materials or equipment. This shall include self-loading log trucks only during the loading and unloading process.

LOGGING OPERATIONS: Operations associated with felling and moving trees and logs from the stump to the point of delivery, such as, but not limited to, marking danger trees and trees/logs to be cut to length, felling, limbing, bucking, debarking, chipping, yarding, loading, unloading, storing, and transporting machines, equipment and personnel to, from and between logging sites.

LOG STACKER: A mobile machine mounted on a wheeled or tracked chassis, equipped with a frontally mounted grapple, tusk, or forklift device, and employed in the loading, unloading, stacking or sorting of logs.

MACHINE: A piece of stationary or mobile equipment having a self-contained power plant that is operated off-road and used for the movement of material. Machines include, but are not limited to, tractors, skidders, front-end loaders, scrapers, graders, bulldozers, swing yarders, log stackers, log loaders, and mechanical felling devices, such as tree shears and feller-bunchers. Machines do not include airplanes or aircraft (e.g., helicopters).

MATCHCUTTING: The felling of trees without using an undercut.

MECHANIZED FALLING: Falling of standing timber by a self-propelled mobile wheeled or tracked machine

MOBILE LOG LOADER:	A self-propelled log loading machine mounted on wheels or tracks.
MOBILE YARDER:	A logging machine mounted on wheels, tracks, or skids, incorporating a vertical or inclined spar, tower, or boom.
NO-BIND:	One of the five basic tree positions commonly encountered while bucking. A tree in a no-bind situation is usually found in flat terrain.
OFFSIDE:	1) Side of tree opposite to which the faller stands when falling or bucking. 2) Side of body opposite to that normally used to hold saw.
PLUMB:	To gauge or assess the various types of lean in a tree.
PUSHER OR DRIVER:	Use of a tree to drive or pushover another that does not fall although it has been faced and backcut. Such a situation results if a tree hangs-up, sits back or is skybound.
PUSHING:	When a tree has been undercut and backcut and will not fall, the faller may as a last resort "push" this tree by falling another into it.
QUARTER:	That area or portion of standing timber assigned to a faller.
RATED CAPACITY:	The maximum load a system, vehicle, machine or piece of equipment was designed by the manufacturer to handle.
RECEDING LINE:	The line on a skidder or slackline comparable to the haulback line on a yarder.
RELOAD:	An area where logs are dumped and reloaded or transferred as a unit to another mode of transportation.
RIGGING CREW:	Crew and equipment that drags logs to an area called a deck or landing. From the deck, logs are loaded onto trucks for transport.

RIGGING CUT OR

WEAKENING CUT: A tree may be lying in such a position that a normal bucking cut cannot be made safely. In order to facilitate yarding or skidding, the faller will make partial bucking cuts from a safe position, perhaps two log-lengths apart.

ROOTWAD: The ball of a tree root and dirt that is pulled from the ground when a tree is uprooted.

R.O.P.S.: Roll over protection structure.

RUNNING LINE: Any line that moves.

RUSSIAN

COUPLING: An incomplete bucking cut as a result of an unsafe bucking situation. In such an instance the faller only partially cuts through the tree. This situation can be very dangerous to the rigging crew. If a Russian coupling is left, the tree should be marked and supervisors notified.

SCHOOL-MARM: A tree stem that branches into two or more trunks or tops.

SET: Combination of two fallers, or one faller and one buckler working together.

SET OR GANG: May consist of one faller who fells and bucks timber. Might be one faller and one buckler working as a team. (This term was used in "hand" falling era also; i.e., two fallers, two bucklers, to form a four-man set or gang before chain saws came into use.)

SET-BACK: Occurs when a tree settles back opposite to the intended direction of fall; hazardous situation when the faller loses control of a tree.

**SHALLOW
NOTCHES:**

An undercut that has not been sawn deeply enough into the tree.

SIDE BIND: One of the five basic tree positions commonly encountered while bucking. A tree in a side bind situation is compressed on one side and tensioned on the other.

SIDE-BORING BACKCUT:	Intentional alteration of the standard backcutting procedure to prevent loss of control of a tree and/or its barber-chairing. Side-boring is an effective technique of reducing the amount of holding wood required to fall a tree. The nose of the bar is pushed into the tree behind the face and 2" above the horizontal cut.
SIDE-NOTCH:	Additional side saw cuts made to prevent "barber-chair" or to facilitate sawing large trees into logs.
SIDE-NOTCHING BACKCUT:	Another intentional alteration of standard backcutting to prevent loss of control and/or barber-chairing. This method also reduces the amount of holding wood remaining to be cut by cutting each side prior to the final across the back severing.
SINGLE-JACK:	A faller who falls and bucks trees in an area by himself.
SIGNAL PERSON:	The person designated to give signals to the machine operator.
SIT-BACK:	Refers to a tree that settles back on the stump closing the kerf of the backcut. Generally a result of improper determination of the tree's lean and/or of wind.
SKIDDER:	A machine or animal used to move logs or trees to landing.
SKIDDING:	The yarding of trees or logs by pulling or towing them across the ground.
SKYBOUND:	A tree that fails to fall after being faced and backcut. Generally a result of picking the wrong lean.
SLIPSHOD:	Poor procedure or technique of falling or bucking.
SLOPE (Grade):	The increase or decrease in altitude over a horizontal distance expressed as a percentage. For example, a change of altitude of 20 feet (6 m) over a horizontal distance of 100 feet (30 m) is expressed as a 20 percent slope.
SLOPING FACE CUT:	The second of the two cuts required to face or undercut a tree. It must be angled sufficiently to allow a wide mouthed face opening.

SNAG: Any standing dead tree or portion thereof.

or

A dead or dying tree that is still standing. Snags must be felled prior to beginning work on an area. Special procedure must be observed when falling snags.

SPRING POLE: A tree, segment of a tree, limb, or sapling that is under stress or tension due to the pressure or weight of another object.

STRIP OR QUARTER: Designated area of trees established by natural boundaries (roads, streams, etc.), or ribbons within which fallers are assigned.

STUMP SHOT: Two inches or more height difference between the horizontal cut of the face and the backcut. The difference in height establishes an anti-kick step that will prevent a tree from jumping back over the stump toward the faller.

SWAMPOUT: Refers to the clearing away from the base of a tree and bucking area loose debris that could hamper footing, use of tools, and/or escaping. Preparing the working and escaping area is an essential part of the falling procedure.

TEEPEE: Unintentional lodging of two or more trees in another standing tree generally caused by improper or poor falling technique.

THROW BACK: Portions of trees or limbs propelled back toward the timber faller by the action of a tree falling through other standing trees.

TIE DOWN: Chain, cable, steel strips or fiber webbing and binders attached to a truck, trailer or other conveyance as a means to secure loads and to prevent them from shifting or moving when they are being transported.

TONGUE AND GROOVE: Bucking technique used to hold logs in place after bucking cuts are made. Used where trees can slide or roll after bucking.

TOP BIND: One of the five basic tree positions commonly encountered while bucking. A tree in a top bind situation is compressed on top and tensioned on the bottom.

TOP LOCK: Limbing technique used to cut off the tops of felled trees whose stem is under stress. Two offset and bypassing cuts are made in the stem near the

top of the tree. The first cut is made on the side of the tree that is under compression. The second cut is offset from the first and made on the side of the tree that is under tension.

- TOPPING:** Cutting off the top section of a standing or felled tree.
- TRACTOR:** A machine of wheel or track design used in logging.
- TRACTOR LOGGING:** The use of any wheeled or tracked vehicle in the skidding or yarding of logs.
- TRANSFER:** Changing of logs in a unit from one mode of transportation to another.
(As Used in Loading)
- TURN:** Any log or group of logs attached by some means to power and moved from a point of rest to a landing.
- UNDERCUT:** A notch cut in a tree to guide the direction of the tree fall and to prevent splitting or kickback.
- UPROOTED:** Trees that have been blown over as a result of wind.
- VEHICLE:** A car, bus, truck, trailer or semi-trailer owned, leased or rented by the employer that is used for transportation of employees or movement of material.
- WEDGE:** A plastic or metal tool used by a faller to prevent a tree from falling backwards, redistribute a tree's weight to a desired direction and to prevent the bar from being pinched while bucking.
- WIDOW MAKER:** Any loose overhead debris such as limbs or tree tops that may fall at any time. Widow makers are extremely dangerous and present the faller with a continual source of danger. Limb or other loose material dropped or thrown from a tree toward the faller as the tree is felled.
- WINCHING:** The winding of cable or rope onto a spool or drum.
- YARDING:** The movement of logs from the place they are felled to a landing.

Review of Logging Fatalities Investigated by the
Occupational Safety and Health Administration (OSHA) in FY 1996 and FY 1997
(Part 2 of 2)

Data Instructions

The primary focus of this report (*Part 2 of 2*) is a review of the circumstances surrounding each of the fatal logging accidents that occurred in FY 1996 and FY 1997. This information is captured in the Agency Integrated Management Information System (IMIS) through instructions provided for the Occupational Safety and Health Administration (OSHA) Form 170. Compliance Safety and Health Officers (CSHO) use this form to record summary information related to the investigation of each fatal incident and the OSHA-1 forms to document inspection results. In addition to the IMIS, this information is also available at OSHA's web site (<http://www.osha.gov/cgi-bin/est/es>). Appendices A and B are recaps of the logging summaries for FY 1996 and FY 1997. The following guidelines and instructions govern what summary information gets reported:

Data Element	Data Instructions*
<p>❖ Accident Investigation Summary</p> <p>(A sample investigation summary form, the OSHA-170 form, is attached.)</p>	<p>Provide a brief summary of the events using the information obtained during the investigation. The purpose of this summary is to provide readers with a general idea of what happened. (Chapter XXIX)</p> <p>This summary is a quick reference to the nature of the case for users in local offices. The National Office will use the summaries to provide general accident history information when catastrophic incidents occur, both for internal use and for Congressional hearings, as well as to identify specific case files that may contain more detailed information needed for such projects as standards development or review.</p>

Data Element	Data Instructions*
	<p>The summary should describe the events involved in chronological order . . . After reading the summary, a reader should be able to determine the following:</p>
	<p>(1) What the workers were doing, or what process was in progress.</p>
	<p>(2) Where the workers were when the events occurred. The description should include significant measurements, such as depth of trench or height of the scaffold.</p>
	<p>(3) What kind of equipment was involved, if any. The description should include the name of the manufacturer, and the model number or the name of the equipment, if available.</p>
	<p>(4) What types of injuries were sustained.</p>
	<p>(5) What the causal factors of the event were, if evident.</p>
	<p>(6) The general nature of the facility where the event occurred, e.g., a high-rise construction site, chemical plant, a petroleum refinery, a warehouse, etc.</p>
	<p>(7) If the injured workers were engaged in the operation which led to the event, or if they were innocent bystanders.</p>
	<p>(8) In non-construction events (especially that occurring at chemical plants), if the injured workers were employees of the facility owner, or if they were contract employees. (Chapter XXIX-6)</p>

* OSHA Instruction ADM 1-1.31, The IMIS (Integrated Management Information System) Enforcement Data Processing Manual, Chapter XXIX.

SAMPLE OSHA-170

U. S. Department of Labor
Occupational Safety and Health Administration

Investigation Summary

Reporting ID	Investigation Summary Number	OSHA-36 Number	OSHA-36 Establishment Name
Event Date		Event Time	
Type of Event			

Inspection Number/ Establishment Name	
Injured/Deceased Name	
Sex:	
Age:	
Injury:	
Nature:	
Part of Body:	
Source of Injury:	
Event Type:	
Environmental Factor:	
Human Factor:	
Task:	
Substance Code:	
Occupational Code:	

Abstract:

Review of Logging Fatalities Investigated by the
Occupational Safety and Health Administration (OSHA) in FY 1996 and FY 1997
(Part 2 of 2)

Local Emphasis Programs (LEPs)
and Experimental Programs on Logging

- A. Guidelines. OSHA Instruction CPL 2.102 provides procedures for the approval of Local Emphasis Programs (LEPs) and Experimental Programs that target high potential injury or illness rate situations not covered by existing national procedures.
1. Local Emphasis Programs (LEPs) are Special Emphasis Programs that provide for the targeting of programmed or planned inspections to selected industries, hazards, or other workplace characteristics not covered or not covered adequately by the current scheduling system. Special emphasis programs may also be used to set up alternative scheduling procedures or other departures from national procedures. These programs are identified by one or more of the following:
- (1) Specific industry.
 - (2) Trade/craft.
 - (3) Substance or other hazard.
 - (4) Type of workplace operation.
 - (5) Type/kind of equipment.
 - (6) Other identifying characteristic.

2. Experimental Programs are Special Emphasis Programs which depart from national procedures in some way other than in simply targeting inspections to selected industries, hazards or other workplace characteristics. Some examples of Experimental Programs include:

- (1) Use of alternative or novel inspection procedures.
- (2) Use of alternative targeting lists, e.g., basing high-hazard targeting on State workers' compensation data.
- (3) Use of alternative addition or deletion criteria for targeting lists; e.g., deleting establishments that have received an inspection within the past five (5) years instead of the normal three (3) years.
- (4) A waiver of the requirement to delete establishments with 10 or fewer employees for identified high-hazard industries where the number of employees in a given workplace is frequently below this cutoff figure (e.g., logging), as long as this does not conflict with the restrictions imposed by Appropriations Act language.

B. Special Programs on Logging. In FY 1996 and FY 1997, seven (7) states implemented approved Local Emphasis Programs in logging -- Washington, Maine, South Carolina, North Carolina and Idaho in FY 1996, and Washington, Virginia, Montana, Idaho and West Virginia in FY 1997. In FY 1996 and FY 1997, Experimental Programs on logging were implemented in Jackson, Mississippi and Mobile, Alabama. The Mississippi and Alabama Experimental Programs covered 400 and 200 logging establishments, respectively, with no deletion of employers with 10 or fewer employees.

Table 1

**Number of OSHA-Investigated Logging
Fatalities by Occupation and Federal Region**
FY 1996 and FY 1997 (Source: IMIS)

Federal Regions (and States)	Number of Logging Fatalities by Occupation (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)					
	Fellers/ Fallers	Machine/ Equipment Operators	Limbers/ Buckers	Unknown	Others**	Total
Region I (Total)	2(1)	1	0	0	0	4
Connecticut	-	-	-	-	-	-
Maine	0	1	0	0	0	1
Massachusetts	-	-	-	-	-	-
New Hampshire	1	0	0	0	0	1
Rhode Island	-	-	-	-	-	-
Vermont *	1(1)	0	0	0	0	2
Region II (Total)	1(1)	2	0	0	0	4
New Jersey	-	-	-	-	-	-
New York	1(1)	2	0	0	0	4
Region III (Total)	3(6)	3(3)	2(2)	1(1)	0	21
Delaware	-	-	-	-	-	-
Maryland *	-	-	-	-	-	-
Pennsylvania	(1)	0	1	0	0	2
Virginia *	2(4)	2(2)	1(2)	0	0	13
West Virginia	1(1)	1(1)	0	1(1)	0	6
Region IV (Total)	7(2)	4(4)	5(5)	2	2	31
Alabama	4	2(2)	2(2)	0	0	12

Federal Regions (and States)	Number of Logging Fatalities by Occupation (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)					
	Fellers/ Fallers	Machine/ Equipment Operators	Limbers/ Buckers	Unknown	Others**	Total
Florida	0	(1)	1	0	0	2
Georgia	0	1	1(1)	0	0	3
Kentucky *	-	-	-	-	-	-
Mississippi	1(1)	(1)	1(1)	2	0	7
North Carolina*	1(1)	0	(1)	0	1	4
South Carolina*	0	1	0	0	1	2
Tennessee *	1	0	0	0	0	1
Region V (Total)	2(1)	0	0	0	0	3
Indiana *	-	-	-	-	-	-
Illinois	1	0	0	0	0	1
Michigan *	-	-	-	-	-	-
Minnesota *	-	-	-	-	-	-
Ohio	1	0	0	0	0	1
Wisconsin	(1)	0	0	0	0	1
Region VI (Total)	1(2)	1(1)	(2)	1	1	9
Arkansas	(1)	1	(1)	0	1	4
Louisiana	(1)	(1)	(1)	0	0	3
New Mexico *	-	-	-	-	-	-
Oklahoma	-	-	-	-	-	-
Texas	1	0	0	1	0	2
Region VII (Total)	-	-	-	-	-	-
Iowa *	-	-	-	-	-	-
Kansas	-	-	-	-	-	-

Federal Regions (and States)	Number of Logging Fatalities by Occupation (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)					
	Fellers/ Fallers	Machine/ Equipment Operators	Limbers/ Buckers	Unknown	Others**	Total
Missouri	-	-	-	-	-	-
Nebraska	-	-	-	-	-	-
Region VIII (Total)	(3)	1	0	1	0	5
Colorado	-	-	-	-	-	-
Montana	(1)	1	0	0	0	2
North Dakota	-	-	-	-	-	-
South Dakota	-	-	-	-	-	-
Utah *	(2)	0	0	1	0	3
Wyoming *	-	-	-	-	-	-
Region IX (Total)	0	1(1)	1(1)	0	(1)	5
Arizona *	-	-	-	-	-	-
California *	0	1(1)	1(1)	0	(1)	5
Hawaii *	-	-	-	-	-	-
Nevada *	-	-	-	-	-	-
Region X (Total)	4(1)	10(4)	3(1)	1	(1)	25
Alaska *	-	-	-	-	-	-
Idaho	2	(1)	1	0	0	4
Oregon *	0	6	2(1)	0	(1)	10
Washington *	2(1)	4(3)	0	1	0	11
Grand Total (Regions Only)	37	36	22	7	5	107

* State Plan States

** Other includes, in FY 1996, one logger in South Carolina, one logger in Arkansas, one co-owner in North Carolina, and, in FY 1997, one chaser in California, and one chaser in Oregon.

Table 2

**Number of Logging Victims Operating Machines/Equipment
at OSHA-Invigated Facilities by Type and Federal Region**
FY 1996 and FY 1997 (Source: IMIS)

Federal Regions (and States)	Number of Logging Victims Operating Machines/Equipment by Type (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)						
	Skidder Operators	Log Truck Drivers	Yarding Machine Operators	Log Loader Operators	Bull Dozer Operators	Other**	Total (All)
Region I (Total)	1	0	0	0	0		1
Connecticut	-	-	-	-	-	-	-
Maine	1	0	0	0	0	0	1
Massachusetts	-	-	-	-	-	-	-
New Hampshire	0	0	0	0	0	0	0
Rhode Island	-	-	-	-	-	-	-
Vermont *	0	0	0	0	0	0	0
Region II (Total)	1	0	0	0	0	1	2
New Jersey	-	-	-	-	-	-	-
New York	1	0	0	0	0	1	2
Region III (Total)	1(2)	1	0	0	1(1)	0	6
Delaware	-	-	-	-	-	-	-
Maryland *	-	-	-	-	-	-	-
Pennsylvania	0	0	0	0	0	0	0
Virginia *	1(2)	0	0	0	1	0	4
West Virginia	0	1	0	0	0(1)	0	2
Region IV (Total)	2(1)	1(1)	0	1(1)	0	(1)	8
Alabama	1(1)	0	0	1(1)	0	0	4
Florida	0	0	0	0	0	(1)	1

Federal Regions (and States)	Number of Logging Victims Operating Machines/Equipment by Type (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)						
	Skidder Operators	Log Truck Drivers	Yarding Machine Operators	Log Loader Operators	Bull Dozer Operators	Other**	Total (All)
Georgia	0	1	0	0	0	0	1
Kentucky *	-	-	-	-	-	--	-
Mississippi	0	(1)	0	0	0	0	1
North Carolina*	0	0	0	0	0	0	0
South Carolina*	1	0	0	0	0	0	1
Tennessee *	0	0	0	0	0	0	0
Region V (Total)	0	0	0	0	0	0	0
Indiana *	-	-	-	-	-	-	-
Illinois	0	0	0	0	0	0	0
Michigan *	-	-	-	-	-	-	-
Minnesota *	-	-	-	-	-	-	-
Ohio	0	0	0	0	0	0	0
Wisconsin	0	0	0	0	0	0	0
Region VI (Total)	1	0	0	(1)	0	0	2
Arkansas	1	0	0	0	0	0	1
Louisiana	0	0	0	(1)	0	0	1
New Mexico *	-	-	-	-	-	-	-
Oklahoma	-	-	-	-	-	-	-
Texas	0	0	0	0	0	0	0
Region VII (Total)	-	-	-	-	-	-	-
Iowa *	-	-	-	-	-	-	-
Kansas	-	-	-	-	-	-	-
Missouri	-	-	-	-	-	-	-
Nebraska	-	-	-	-	-	-	-

Federal Regions (and States)	Number of Logging Victims Operating Machines/Equipment by Type (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)						
	Skidder Operators	Log Truck Drivers	Yarding Machine Operators	Log Loader Operators	Bull Dozer Operators	Other**	Total (All)
Region VIII _(Total)	0	0	1	0	0	0	1
Colorado	-	-	-	-	-	-	-
Montana	0	0	1	0	0	0	1
North Dakota	-	-	-	-	-	-	-
South Dakota	-	-	-	-	-	-	-
Utah *	0	0	0	0	0	0	0
Wyoming *	-	-	-	-	-	-	-
Region IX _(Total)	0	0	(1)	0	1	0	2
Arizona *	-	-	-	-	-	-	-
California *	0	0	(1)	0	1	0	2
Hawaii *	-	-	-	-	-	-	-
Nevada *	-	-	-	-	-	-	-
Region X _(Total)	3(1)	3(2)	3	1	0	(1)	14
Alaska *	-	-	-	-	-	-	-
Idaho	(1)	0	0	0	0	0	1
Oregon *	1	2	2	1	0	0	6
Washington *	2	1(2)	1	0	0	(1)	7
Grand Total (Regions Only)	13	8	5	4	3	3	36

* State Plan States

** Other includes, one chip harvester in New York in FY 1996, and one delimeter operator in Washington and one chain saw operator in Florida in FY 1997.

Appendix I

Table 3

**Number of OSHA-Investigated Logging Fatalities
by Work Location and Federal Region
FY 1996 and FY 1997 (Source: IMIS)**

Federal Regions (States)	Number of Logging Fatalities by Work Location (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)								
	Cutting/ Felling Area	Limbing/ Bucking Area	Skidding Machine Area	Landing, Log Yard	Log Loading Area	Yarding Operations Area	Logging Road	Other **	Total
Reg. I	2	0	(1)	1	0	0	0	0	4
CN	-	-	-	-	-	-	-	-	-
ME	0	0	0	1	0	0	0	0	1
MA	-	-	-	-	-	-	-	-	-
NH	1	0	0	0	0	0	0	0	1
RI	-	-	-	-	-	-	-	-	-
VT*	1	0	(1)	0	0	0	0	0	2
Reg. II	2(1)	0	0	1	0	0	0	0	4
NJ	-	-	-	-	-	-	-	-	-
NY	2(1)	0	0	1	0	0	0	0	4
Reg. III	3(6)	3(1)	1(2)	1(1)	0	0	(1)	1(1)	21
DE	-	-	-	-	-	-	-	-	-
MD*	-	-	-	-	-	-	-	-	-
PA	(1)	1	0	0	0	0	0	0	2
VA*	2(4)	1(1)	1(2)	(1)	0	0	0	1	13
WV	1(1)	1	0	1	0	0	(1)	(1)	6
Reg. IV	8(3)	5(4)	2(1)	1(1)	4(2)	0	0	0	31
AL	5	2(2)	(1)	0	1(1)	0	0	0	12
FL	(1)	1	0	0	0	0	0	0	2
GA	0	1	0	(1)	1	0	0	0	3
KT*	-	-	-	-	-	-	-	-	-

Federal Regions (States)	Number of Logging Fatalities by Work Location (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)								
	Cutting/ Felling Area	Limbing/ Bucking Area	Skidding Machine Area	Landing, Log Yard	Log Loading Area	Yarding Operations Area	Logging Road	Other **	Total
MS	1(1)	1(1)	0	1	1(1)	0	0	0	7
NC*	2(1)	(1)	0	0	0	0	0	0	4
SC*	0	0	1	0	1	0	0	0	2
TN*	0	0	1	0	0	0	0	0	1
Reg. V	2(1)	0	0	0	0	0	0	0	3
IN*	-	-	-	-	-	-	-	-	-
IL	1	0	0	0	0	0	0	0	1
MI*	-	-	-	-	-	-	-	-	-
MN*	-	-	-	-	-	-	-	-	-
OH	1	0	0	0	0	0	0	0	1
WI	(1)	0	0	0	0	0	0	0	1
Reg. VI	2(2)	(2)	1	(1)	0	0	0	1	9
AR	1(1)	(1)	1	0	0	0	0	0	4
LA	(1)	(1)	0	(1)	0	0	0	0	3
NM*	-	-	-	-	-	-	-	-	-
OK	-	-	-	-	-	-	-	-	-
TX	1	0	0	0	0	0	0	1	2
Reg.VII	-	-	-	-	-	-	-	-	-
IA *	-	-	-	-	-	-	-	-	-
KS	-	-	-	-	-	-	-	-	-
MO	-	-	-	-	-	-	-	-	-
NE	-	-	-	-	-	-	-	-	-
Reg.VIII	(3)	0	0	0	1	1	0	0	5
CO	-	-	-	-	-	-	-	-	-

Federal Regions (States)	Number of Logging Fatalities by Work Location (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)								
	Cutting/ Felling Area	Limbing/ Bucking Area	Skidding Machine Area	Landing, Log Yard	Log Loading Area	Yarding Operations Area	Logging Road	Other **	Total
MT	(1)	0	0	0	0	1	0	0	2
ND	-	-	-	-	-	-	-	-	-
SD	-	-	-	-	-	-	-	-	-
UT*	(2)	0	0	0	1	0	0	0	3
WY*	-	-	-	-	-	-	-	-	-
Reg. IX	0	1(1)	0	0	(1)	0	0	1(1)	5
AZ*	-	-	-	-	-	-	-	-	-
CA*	0	1(1)	0	0	(1)	0	0	1(1)	5
HI*	-	-	-	-	-	-	-	-	-
NE*	-	-	-	-	-	-	-	-	-
Reg. X	4(1)	3(1)	2(1)	3(2)	1	3	1(2)	1	25
AK*	-	-	-	-	-	-	-	-	-
ID	2	1	(1)	0	0	0	0	0	4
OR*	0	2(1)	0	2(1)	1	2	0	1	10
WA*	2(1)	0	2	1(1)	0	1	1(2)	0	11
TOTALS Regions Only	40	21	11	12	9	4	4	6	107

* State Plan States

** Other, for FY 1996, includes one case in Texas classified as unknown, and one case each in California, Virginia and Oregon classified generally as logging area. For FY 1997, other includes one case in California classified generally as logging area, and one case in West Virginia classified as unknown.

Table 4

**Number of OSHA-Investigated Logging Fatalities
by Accident Type and Federal Region**
FY 1996 and FY 1997 (Source: IMIS)

Federal Regions (States)	Number of Logging Fatalities by Accident Type (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)								
	Struck by	Crushed by	Thrown From	Caught/Pinned Between	Run/Rolled Over	Crashed	Slipped and Fell	Other **	Total
Reg. I	2(1)	1	0	0	0	0	0	0	4
CN	-	-	-	-	-	-	-	-	-
ME	0	1	0	0	0	0	0	0	1
MA	-	-	-	-	-	-	-	-	-
NH	1	0	0	0	0	0	0	0	1
RI	-	-	-	-	-	-	-	-	-
VT*	1(1)	0	0	0	0	0	0	0	2
Reg. II	1(1)	0	1	0	0	0	0	1	4
NJ	-	-	-	-	-	-	-	-	-
NY	1(1)	0	1	0	0	0	0	1	4
Reg. III	7(8)	1	(1)	(2)	1	0	0	(1)	21
DE	-	-	-	-	-	-	-	-	-
MD*	-	-	-	-	-	-	-	-	-
PA	1(1)	0	0	0	0	0	0	0	2
VA*	3(5)	1	(1)	(1)	1	0	0	(1)	13
WV	3(2)	0	0	(1)	0	0	0	0	6
Reg. IV	18(11)	0	0	0	0	0	1	1	31
AL	8(4)	0	0	0	0	0	0	0	12
FL	1(1)	0	0	0	0	0	0	0	2

Federal Regions (States)	Number of Logging Fatalities by Accident Type (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)								
	Struck by	Crushed by	Thrown From	Caught/Pinned Between	Run/Rolled Over	Crashed	Slipped and Fell	Other **	Total
GA	2(1)	0	0	0	0	0	0	0	3
KT*	-	-	-	-	-	-	-	-	-
MS	4(3)	0	0	0	0	0	0	0	7
NC*	2(2)	0	0	0	0	0	0	0	4
SC*	0	0	0	0	0	0	1	1	2
TN*	1	0	0	0	0	0	0	0	1
Reg. V	2(1)	0	0	0	0	0	0	0	3
IN*	-	-	-	-	-	-	-	-	-
IL	1	0	0	0	0	0	0	0	1
MI*	-	-	-	-	-	-	-	-	-
MN*	-	-	-	-	-	-	-	-	-
OH	1	0	0	0	0	0	0	0	1
WI	(1)	0	0	0	0	0	0	0	1
Reg. VI	2(4)	0	1	0	1	0	(1)	0	9
AR	1(2)	0	1	0	0	0	0	0	4
LA	(2)	0	0	0	0	0	(1)	0	3
NM*	-	-	-	-	-	-	-	-	-
OK	-	-	-	-	-	-	-	-	-
TX	1	0	0	0	1	0	0	0	2
Reg. VII	-	-	-	-	-	-	-	-	-
IA *	-	-	-	-	-	-	-	-	-
KS	-	-	-	-	-	-	-	-	-
MO	-	-	-	-	-	-	-	-	-
NE	-	-	-	-	-	-	-	-	-

Federal Regions (States)	Number of Logging Fatalities by Accident Type (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)								
	Struck by	Crushed by	Thrown From	Caught/Pinned Between	Run/Rolled Over	Crashed	Slipped and Fell	Other **	Total
Reg. VIII	2(3)	0	0	0	0	0	0	0	5
CO	-	-	-	-	-	-	-	-	-
MT	1(1)	0	0	0	0	0	0	0	2
ND	-	-	-	-	-	-	-	-	-
SD	-	-	-	-	-	-	-	-	-
UT*	1(2)	0	0	0	0	0	0	0	3
WY*	-	-	-	-	-	-	-	-	-
Reg. IX	1(2)	0	1	0	(1)	0	0	0	5
AZ*	-	-	-	-	-	-	-	-	-
CA*	1(2)	0	1	0	(1)	0	0	0	5
HI*	-	-	-	-	-	-	-	-	-
NE*	-	-	-	-	-	-	-	-	-
Reg. X	13(3)	1(2)	1	1	1	1(2)	0	0	25
AK*	-	-	-	-	-	-	-	-	-
ID	3(1)	0	0	0	0	0	0	0	4
OR*	6(1)	(1)	0	1	1	0	0	0	10
WA*	4(1)	1(1)	1	0	0	1(2)	0	0	11
TOTALS Regions Only	82	5	5	3	4	3	2	3	107

* State Plan States

** Other includes, in FY 1996, one victim who was burned in New York, one victim who collapsed in South Carolina, and, in FY 1997, one victim who was cut by a chain saw in Virginia.

Table 5

**Number of Logging Victims Struck by Objects
at OSHA-Investigated Facilities by Federal Region**
FY 1996 and FY 1997 (Source: IMIS)

Federal Regions (and States)	Number of Logging Victims Struck by Objects (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)				
	Struck by Tree	Struck by Log	Struck by Wood	Struck by Machine/Equipment	Total
Region I (Total)	2(1)	0	0	0	3
Connecticut	-	-	-	-	-
Maine	0	0	0	0	0
Massachusetts	-	-	-	-	-
New Hampshire	1	0	0	0	1
Rhode Island	-	-	-	-	-
Vermont *	1(1)	0	0	0	2
Region II (Total)	1(1)	0	0	0	2
New Jersey	-	-	-	-	-
New York	1(1)	0	0	0	2
Region III (Total)	6(8)	1	0	0	15
Delaware	-	-	-	-	-
Maryland *	-	-	-	-	-
Pennsylvania	1(1)	0	0	0	2
Virginia *	3(5)	0	0	0	8
West Virginia	2(2)	1	0	0	5
Region IV (Total)	15(6)	3(3)	(1)	(1)	29
Alabama	7(2)	1(1)	0	(1)	12
Florida	1	0	(1)	0	2
Georgia	2	(1)	0	0	3

Federal Regions (and States)	Number of Logging Victims Struck by Objects (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)				
	Struck by Tree	Struck by Log	Struck by Wood	Struck by Machine/Equipment	Total
Kentucky *	-	-	-	-	-
Mississippi	2(2)	2(1)	0	0	7
North Carolina*	2(2)	0	0	0	4
South Carolina*	0	0	0	0	0
Tennessee *	1	0	0	0	1
Region V (Total)	2(1)	0	0	0	3
Indiana *	-	-	-	-	-
Illinois	1	0	0	0	1
Michigan *	-	-	-	-	-
Minnesota *	-	-	-	-	-
Ohio	1	0	0	0	1
Wisconsin	(1)	0	0	0	1
Region VI(Total)	2(4)	0	0	0	6
Arkansas	1(2)	0	0	0	3
Louisiana	(2)	0	0	0	2
New Mexico *	-	-	-	-	-
Oklahoma	-	-	-	-	-
Texas	1	0	0	0	1
Region VII(Total)	-	-	-	-	-
Iowa *	-	-	-	-	-
Kansas	-	-	-	-	-
Missouri	-	-	-	-	-
Nebraska	-	-	-	-	-
Region VIII(Tot)	1(3)	1	0	0	5

Federal Regions (and States)	Number of Logging Victims Struck by Objects (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)				
	Struck by Tree	Struck by Log	Struck by Wood	Struck by Machine/Equipment	Total
Colorado	-	-	-	-	-
Montana	1(1)	0	0	0	2
North Dakota	-	-	-	-	-
South Dakota	-	-	-	-	-
Utah *	(2)	1	0	0	3
Wyoming *	-	-	-	-	-
Region IX (Total)	1(1)	0	(1)	0	3
Arizona *	-	-	-	-	-
California *	1(1)	0	(1)	0	3
Hawaii *	-	-	-	-	-
Nevada *	-	-	-	-	-
Region X (Total)	6(3)	2	2	3	16
Alaska *	-	-	-	-	-
Idaho	3(1)	0	0	0	4
Oregon *	2(1)	2	0	2	7
Washington *	1(1) +	0	2	1	5
Grand Total (Regions Only)	64	10	4	4	82

* State Plan States

+ One victim in Washington (October 31, 1995) was crushed by a falling tree after he tripped and fell to the ground trying to get out of the path of the falling tree.

Table 6

**Number of Fatal Logging Incidents From Contact With Trees
at OSHA-Investigated Facilities by Federal Region**
FY 1996 and FY 1997 (Source: IMIS)

Federal Regions (and States)	Number of Logging Fatalities From Contact With Trees (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)					
	Falling Trees **	Dislodged Trees	Kick-Back Trees	Felled Trees	Barber-Chaired Trees	Total
Region I (Total)	(1)	1	1	0	0	3
Connecticut	-	-	-	-	-	-
Maine	0	0	0	0	0	0
Massachusetts	-	-	-	-	-	-
New Hampshire	0	0	1	0	0	1
Rhode Island	-	-	-	-	-	-
Vermont *	(1)	1	0	0	0	2
Region II (Total)	1(1)	0	0	0	0	2
New Jersey	-	-	-	-	-	-
New York	1(1)	0	0	0	0	2
Region III (Total)	4(4)	1(2)	(1)	1(1)	0	14
Delaware	-	-	-	-	-	-
Maryland *	-	-	-	-	-	-
Pennsylvania	1(1)	0	0	0	0	2
Virginia *	2(1)	(2)	(1)	1(1)	0	8
West Virginia	1(2)	1	0	0	0	4
Region IV (Total)	6(6)	4	2	3	0	21
Alabama	3(2)	2	1	1	0	9
Florida	1	0	0	0	0	1

Federal Regions (and States)	Number of Logging Fatalities From Contact With Trees (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)					
	Falling Trees **	Dislodged Trees	Kick-Back Trees	Felled Trees	Barber-Chaired Trees	Total
Georgia	1	0	0	1	0	2
Kentucky *	-	-	-	-	-	-
Mississippi	(2)	0	1	1	0	4
North Carolina*	(2)	2	0	0	0	4
South Carolina*	0	0	0	0	0	0
Tennessee *	1	0	0	0	0	1
Region V (Total)	1(1)	1	0	0	0	3
Indiana *	-	-	-	-	-	-
Illinois	1	0	0	0	0	1
Michigan *	-	-	-	-	-	-
Minnesota *	-	-	-	-	-	-
Ohio	0	1	0	0	0	1
Wisconsin	(1)	0	0	0	0	1
Region VI (Total)	2(2)	(1)	0	0	(1)	6
Arkansas	1(1)	0	0	0	(1)	3
Louisiana	(1)	(1)	0	0	0	2
New Mexico *	-	-	-	-	-	-
Oklahoma	-	-	-	-	-	-
Texas	1	0	0	0	0	1
Region VII (Total)	-	-	-	-	-	-
Iowa *	-	-	-	-	-	-
Kansas	-	-	-	-	-	-
Missouri	-	-	-	-	-	-
Nebraska	-	-	-	-	-	-

Federal Regions (and States)	Number of Logging Fatalities From Contact With Trees (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)					
	Falling Trees **	Dislodged Trees	Kick-Back Trees	Felled Trees	Barber-Chaired Trees	Total
Region VIII (Total)	1(3)	0	0	0	0	4
Colorado	-	-	-	-	-	-
Montana	1(1)	0	0	0	0	2
North Dakota	-	-	-	-	-	-
South Dakota	-	-	-	-	-	-
Utah *	(2)	0	0	0	0	(2)
Wyoming *	-	-	-	-	-	-
Region IX (Total)	1	0	0	(1)	0	2
Arizona *	-	-	-	-	-	-
California *	1	0	0	(1)	0	2
Hawaii *	-	-	-	-	-	-
Nevada *	-	-	-	-	-	-
Region X (Total)	5(2)	0	0	(1)	1	9
Alaska *	-	-	-	-	-	-
Idaho	2	0	0	(1)	1	4
Oregon *	2(1)	0	0	0	0	3
Washington *	1(1)	0	0	0	0	2
Grand Total (Regions Only)	41	10	4	7	2	64

* State Plan States

** In FY 1996, six (6) of the falling trees were danger trees, one each was located in New York, Virginia, Alabama, Florida, Illinois and Idaho. In FY 1997, six (6) of the falling trees were danger trees, one each was located in Pennsylvania, Alabama, Mississippi, North Carolina, Wisconsin and Utah.

Table 7

**Number of OSHA-Investigated Logging Fatalities
by Employee Activity and Federal Region**
FY 1996 and FY 1997 (Source: IMIS)

Federal Regions (and States)	Number of Logging Fatalities by Employee Activity (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)							Total
	Felling a Tree	Operating Machines/ Equipment	Limbing/ Bucking a Tree	Waiting For Other Processes to Be Completed	Loading/ Unloading Logs	Unknown	Other **	
Region I	2(1)	(1)	0	0	0	0	0	5
CT	-	-	-	-	-	-	-	-
ME	0	(1)	0	0	0	0	1	2
MA	-	-	-	-	-	-	-	-
NH	1	0	0	0	0	0	0	1
RI	-	-	-	-	-	-	-	-
VT *	1(1)	0	0	0	0	0	0	2
Region II	1(1)	2	0	0	0	0	0	4
NJ	-	-	-	-	-	-	-	-
NY	1(1)	2	0	0	0	0	0	4
Region III	2(5)	1(3)	3(1)	0	1	2(1)	(2)	21
DE	-	-	-	-	-	-	-	-
MD *	-	-	-	-	-	-	-	-
PA	(1)	0	1	0	0	0	0	2
VA *	2(4)	1(2)	1(1)	0	0	1	(1)	13
WV	0	(1)	1	0	1	1(1)	(1)	6
Region IV	6(2)	2(1)	4(5)	4	1(2)	1(1)	2	31
AL	4	1(1)	1(2)	1	1(1)	0	0	12
FL	0	0	1	0	0	(1)	0	2

Federal Regions (and States)	Number of Logging Fatalities by Employee Activity (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)							
	Felling a Tree	Operating Machines/ Equipment	Limbing/ Bucking a Tree	Waiting For Other Processes to Be Completed	Loading/ Unloading Logs	Unknown	Other **	Total
GA	0	0	1(1)	1	0	0	0	3
KT *	-	-	-	-	-	-	-	-
MS	(1)	0	1(1)	2	(1)	1	0	7
NC *	1(1)	0	(1)	0	0	0	1	4
SC *	0	1	0	0	0	0	1	2
TN *	1	0	0	0	0	0	0	1
Region V	2(1)	0	0	0	0	0	0	3
IN *	-	-	-	-	-	-	-	-
IL	1	0	0	0	0	0	0	1
MI *	-	-	-	-	-	-	-	-
MN *	-	-	-	-	-	-	-	-
OH	1	0	0	0	0	0	0	1
WI	(1)	0	0	0	0	0	0	1
Region VI	1(2)	1(1)	(2)	0	0	0	2	9
AR	(1)	1	(1)	0	0	0	1	4
LA	(1)	(1)	(1)	0	0	0	0	3
NM *	-	-	-	-	-	-	-	-
OK	-	-	-	-	-	-	-	-
TX	1	0	0	0	0	0	1	2
Region VII	-	-	-	-	-	-	-	-
IO *	-	-	-	-	-	-	-	-
KS	-	-	-	-	-	-	-	-
MO	-	-	-	-	-	-	-	-
NE	-	-	-	-	-	-	-	-

Federal Regions (and States)	Number of Logging Fatalities by Employee Activity (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)							
	Felling a Tree	Operating Machines/ Equipment	Limbing/ Bucking a Tree	Waiting For Other Processes to Be Completed	Loading/ Unloading Logs	Unknown	Other **	Total
Region VIII	(3)	1	0	0	0	1	0	5
CO	-	-	-	-	-	-	-	-
MT	(1)	1	0	0	0	0	0	2
ND	-	-	-	-	-	-	-	-
SD	-	-	-	-	-	-	-	-
UT *	(2)	0	0	0	0	1	0	3
WY *	-	-	-	-	0	-	-	-
Region IX	0	1(1)	1	(1)	0	(1)	0	5
AZ *	-	-	-	-	-	-	-	-
CA *	0	1(1)	1	(1)	0	(1)	0	5
HA *	-	-	-	-	-	-	-	-
NE *	-	-	-	-	-	-	-	-
Region X	4(1)	6(4)	3(1)	4	1	0	(1)	25
AK *	-	-	-	-	-	-	-	-
ID	2	(1)	1	0	0	0	0	4
OR *	0	3	2(1)	2	1	0	(1)	10
WA *	2(1)	3(3)	0	2	0	0	0	11
TOTALS Regions Only	34	25	20	9	5	7	7	107

* State Plan States

** Other includes, in FY 1996, one victim in New York who was repairing a fuel tank, one victim in North Carolina who was checking the property line, one victim in South Carolina who was stacking short logs, one victim in Arkansas who was leaving the work site, one victim in Texas who was walking beside a moving log truck, and one victim in Virginia who was performing maintenance. For FY 1997, other includes, one victim in Oregon who was stamping logs, one victim in Virginia who was cutting a stump to release a tree being pulled, and one victim in West Virginia who was walking away from a cut-up tree.

Table 8
Number of OSHA-Investigated Logging Fatalities
by Incident Type and Federal Region
 FY 1996 and FY 1997 (Source: IMIS)

Federal Regions (and States)	Number of Logging Fatalities by Incident Type (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)						Total
	Procedural	Mechanical	Material	Structural	Environmental	Other **	
Region I (Total)	3(1)	0	0	0	0	0	4
Connecticut	-	-	-	-	-	-	-
Maine	1	0	0	0	0	0	1
Massachusetts	-	-	-	-	-	-	-
New Hampshire	1	0	0	0	0	0	1
Rhode Island	-	-	-	-	-	-	-
Vermont *	1(1)	0	0	0	0	0	2
Region II (Total)	3(1)	0	0	0	0	0	4
New Jersey	-	-	-	-	-	-	-
New York	3(1)	0	0	0	0	0	4
Region III (Total)	8(11)	1(1)	0	0	0	0	21
Delaware	-	-	-	-	-	-	-
Maryland *	-	-	-	-	-	-	-
Pennsylvania	1(1)	0	0	0	0	0	2
Virginia *	4(8)	1	0	0	0	0	13
West Virginia	3(2)	(1)	0	0	0	0	6
Region IV (Total)	19(9)	(2)	0	0	0	1	31
Alabama	8(2)	(2)	0	0	0	0	12
Florida	1(1)	0	0	0	0	0	2
Georgia	2(1)	0	0	0	0	0	3

Federal Regions (and States)	Number of Logging Fatalities by Incident Type (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)						
	Procedural	Mechanical	Material	Structural	Environmental	Other **	Total
Kentucky *	-	-	-	-	-	-	-
Mississippi	4(3)	0	0	0	0	0	7
North Carolina*	2(2)	0	0	0	0	0	4
South Carolina*	1	0	0	0	0	1	2
Tennessee *	1	0	0	0	0	0	1
Region V (Total)	2(1)	0	0	0	0	0	3
Indiana *	-	-	-	-	-	-	-
Illinois	1	0	0	0	0	0	1
Michigan *	-	-	-	-	-	-	-
Minnesota *	-	-	-	-	-	-	-
Ohio	1	0	0	0	0	0	1
Wisconsin	(1)	0	0	0	0	0	1
Region VI (Total)	4(5)	0	0	0	0	0	9
Arkansas	2(2)	0	0	0	0	0	4
Louisiana	(3)	0	0	0	0	0	3
New Mexico *	-	-	-	-	-	-	-
Oklahoma	-	-	-	-	-	-	-
Texas	2	0	0	0	0	0	2
Region VII(Total)	-	-	-	-	-	-	-
Iowa *	-	-	-	-	-	-	-
Kansas	-	-	-	-	-	-	-
Missouri	-	-	-	-	-	-	-
Nebraska	-	-	-	-	-	-	-
Region VIII(Tot)	2(3)	0	0	0	0	0	5

Federal Regions (and States)	Number of Logging Fatalities by Incident Type (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)						
	Procedural	Mechanical	Material	Structural	Environmental	Other **	Total
Colorado	-	-	-	-	-	-	-
Montana	1(1)	0	0	0	0	0	2
North Dakota	-	-	-	-	-	-	-
South Dakota	-	-	-	-	-	-	-
Utah *	1(2)	0	0	0	0	0	3
Wyoming *	-	-	-	-	-	-	-
Region IX (Total)	2(3)	0	0	0	0	0	5
Arizona *	-	-	-	-	-	-	-
California *	2(3)	0	0	0	0	0	5
Hawaii *	-	-	-	-	-	-	-
Nevada *	-	-	-	-	-	-	-
Region X (Total)	15(6)	2(1)	1	0	0	0	25
Alaska *	-	-	-	-	-	-	-
Idaho	3(1)	0	0	0	0	0	4
Oregon *	7(2)	1	0	0	0	0	10
Washington *	5(3)	1(1)	1	0	0	0	11
Grand Total (Regions Only)	98	7	1	0	0	1	107

* State Plan States

** Other includes, in FY 1996, one victim in South Carolina who collapsed for medical reasons.

Table 9
Number of OSHA-Investigated Logging Fatalities
by Related Factor and Federal Region

FY 1996 and FY 1997 (Source: IMIS)

Federal Regions (and States)	Number of Logging Fatalities by Related Factor (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)						
	Human Factor	Mechanical Factor	Material Factor	Structural Factor	Environmental Factor	Other Factors**	Total
Region I (Total)	3(1)	0	0	0	0	0	4
Connecticut	-	-	-	-	-	-	-
Maine	1	0	0	0	0	0	1
Massachusetts	-	-	-	-	-	-	-
New Hampshire	1	0	0	0	0	0	1
Rhode Island	-	-	-	-	-	-	-
Vermont *	1(1)	0	0	0	0	0	2
Region II (Total)	3(1)	0	0	0	0	0	4
New Jersey	-	-	-	-	-	-	-
New York	3(1)	0	0	0	0	0	4
Region III (Total)	8(11)	1(1)	0	0	0	0	21
Delaware	-	-	-	-	-	-	-
Maryland *	-	-	-	-	-	-	-
Pennsylvania	1(1)	0	0	0	0	0	2
Virginia *	4(8)	1	0	0	0	0	13
West Virginia	3(2)	(1)	0	0	0	0	6
Region IV (Total)	18(10)	(1)	0	0	0	2	31
Alabama	7(3)	(1)	0	0	0	1	12
Florida	1(1)	0	0	0	0	0	2
Georgia	2(1)	0	0	0	0	0	3

Federal Regions (and States)	Number of Logging Fatalities by Related Factor (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)						
	Human Factor	Mechanical Factor	Material Factor	Structural Factor	Environmental Factor	Other Factors**	Total
Kentucky *	-	-	-	-	-	-	-
Mississippi	4(3)	0	0	0	0	0	7
North Carolina*	2(2)	0	0	0	0	0	4
South Carolina*	1	0	0	0	0	1	2
Tennessee *	1	0	0	0	0	0	1
Region V (Total)	2(1)	0	0	0	0	0	3
Indiana *	-	-	-	-	-	-	-
Illinois	1	0	0	0	0	0	1
Michigan *	-	-	-	-	-	-	-
Minnesota *	-	-	-	-	-	-	-
Ohio	1	0	0	0	0	0	1
Wisconsin	(1)	0	0	0	0	0	1
Region VI (Total)	4(5)	0	0	0	0	0	9
Arkansas	2(2)	0	0	0	0	0	4
Louisiana	(3)	0	0	0	0	0	3
New Mexico *	-	-	-	-	-	-	-
Oklahoma	-	-	-	-	-	-	-
Texas	2	0	0	0	0	0	2
Region VII(Total)	-	-	-	-	-	-	-
Iowa *	-	-	-	-	-	-	-
Kansas	-	-	-	-	-	-	-
Missouri	-	-	-	-	-	-	-
Nebraska	-	-	-	-	-	-	-
Region VIII(Tot)	2(3)	0	0	0	0	0	5

Federal Regions (and States)	Number of Logging Fatalities by Related Factor (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)						
	Human Factor	Mechanical Factor	Material Factor	Structural Factor	Environmental Factor	Other Factors**	Total
Colorado	-	-	-	-	-	-	-
Montana	1(1)	0	0	0	0	0	2
North Dakota	-	-	-	-	-	-	-
South Dakota	-	-	-	-	-	-	-
Utah *	1(2)	0	0	0	0	0	3
Wyoming *	-	-	-	-	-	-	-
Region IX (Total)	2(3)	0	0	0	0	0	5
Arizona *	-	-	-	-	-	-	-
California *	2(3)	0	0	0	0	0	5
Hawaii *	-	-	-	-	-	-	-
Nevada *	-	-	-	-	-	-	-
Region X (Total)	15(6)	1(1)	2	0	0	0	25
Alaska *	-	-	-	-	-	-	-
Idaho	3(1)	0	0	0	0	0	4
Oregon *	7(2)	0	1	0	0	0	10
Washington *	5(3)	1(1)	1	0	0	0	11
Grand Total (Regions Only)	98	5	2	0	0	2	107

* State Plan States

** Other factors include, in FY 1996, one victim in Alabama who was killed when he ran in the direction of the falling tree, and one victim in South Carolina who collapsed while stacking short logs.

Table 10

**Number of OSHA-Investigated Logging Fatalities
by Source of Injury and Federal Region**
FY 1996 and FY 1997 (Source: IMIS)

Federal Regions (and States)	Number of Logging Fatalities by Source of Injury (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)					Total
	Tree	Machine/ Equipment	Log	Piece of Wood	Other**	
Region I (Total)	2(1)	1	0	0	0	4
Connecticut	-	-	-	-	-	-
Maine	0	1	0	0	0	1
Massachusetts	-	-	-	-	-	-
New Hampshire	1	0	0	0	0	1
Rhode Island	-	-	-	-	-	-
Vermont *	1(1)	0	0	0	0	2
Region II (Total)	1(1)	1	0	0	1	4
New Jersey	-	-	-	-	-	-
New York	1(1)	1	0	0	1	3
Region III (Total)	6(8)	2(4)	1	0	0	21
Delaware	-	-	-	-	-	-
Maryland *	-	-	-	-	-	-
Pennsylvania	1(1)	0	0	0	0	2
Virginia *	3(5)	2(3)	0	0	0	13
West Virginia	2(2)	(1)	1	0	0	6
Region IV (Total)	14(6)	(2)	4(2)	(1)	2	31
Alabama	7(2)	(2)	1	0	0	12
Florida	1	0	0	(1)	0	2

Federal Regions (and States)	Number of Logging Fatalities by Source of Injury (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)					
	Tree	Machine/ Equipment	Log	Piece of Wood	Other**	Total
Georgia	1	0	1(1)	0	0	3
Kentucky *	-	-	-	-	-	-
Mississippi	2(2)	0	2(1)	0	0	7
North Carolina*	2(2)	0	0	0	0	4
South Carolina*	0	0	0	0	2	2
Tennessee *	1	0	0	0	0	1
Region V (Total)	2(1)	0	0	0	0	3
Indiana *	-	-	-	-	-	-
Illinois	1	0	0	0	0	1
Michigan *	-	-	-	-	-	-
Minnesota *	-	-	-	-	-	-
Ohio	1	0	0	0	0	1
Wisconsin	(1)	0	0	0	0	1
Region VI (Total)	2(4)	2(1)	0	0	0	9
Arkansas	1(2)	1	0	0	0	4
Louisiana	(2)	(1)	0	0	0	3
New Mexico *	-	-	-	-	-	-
Oklahoma	-	-	-	-	-	-
Texas	1	1	0	0	0	2
Region VII (Total)	-	-	-	-	-	-
Iowa *	-	-	-	-	-	-
Kansas	-	-	-	-	-	-
Missouri	-	-	-	-	-	-
Nebraska	-	-	-	-	-	-

Federal Regions (and States)	Number of Logging Fatalities by Source of Injury (Numbers not in parentheses = FY 1996; numbers in parentheses = FY 1997)					
	Tree	Machine/ Equipment	Log	Piece of Wood	Other**	Total
Region VIII _(Tot)	1(3)	0	1	0	0	5
Colorado	-	-	-	-	-	-
Montana	1(1)	0	0	0	0	2
North Dakota	-	-	-	-	-	-
South Dakota	-	-	-	-	-	-
Utah *	(2)	0	1	0	0	3
Wyoming *	-	-	-	-	-	-
Region IX _(Total)	1	1(1)	(1)	(1)	0	5
Arizona *	-	-	-	-	-	-
California *	1	1(1)	(1)	(1)	0	5
Hawaii *	-	-	-	-	-	-
Nevada *	-	-	-	-	-	-
Region X _(Total)	7(2)	7(5)	2	2	0	25
Alaska *	-	-	-	-	-	-
Idaho	3	(1)	0	0	0	4
Oregon *	2(1)	4(1)	2	0	0	10
Washington *	2(1)	3(3)	0	2	0	11
Grand Total (Regions Only)	62	27	11	4	3	107

* State Plan States

** Other includes, in FY 1996, one victim in South Carolina who collapsed while stacking short logs, one victim in South Carolina who drowned while logging in a flooded timber area, and one victim in New York who burned to death when his torch ignited fuel remaining in a tank he was repairing.

Table 11

**Number of OSHA-Investigated Logging Fatalities
by Source of Fatal Action and Federal Region**
FY 1996 and FY 1997 (Source: IMIS)

Federal Regions (and States)	Number of Logging Fatalities by Source of Fatal Action				Total No. Victims
	FY 1996		FY 1997		
	Fatal Action Taken by Victim	Fatal Action Taken by Other Workers	Fatal Action Taken by Victim	Fatal Action Taken by Other Workers	
Region I (Total)	3	0	0	1	4
Connecticut	-	-	-	-	-
Maine	1	0	0	0	1
Massachusetts	-	-	-	-	-
New Hampshire	1	0	0	0	1
Rhode Island	-	-	-	-	-
Vermont *	1	0	0	1	2
Region II (Total)	3	0	1	0	4
New Jersey	-	-	-	-	-
New York	3	0	1	0	4
Region III (Total)	8	1	12	0	21
Delaware	-	-	-	-	-
Maryland *	-	-	-	-	-
Pennsylvania	1	0	1	0	2
Virginia *	5	0	8	0	13
West Virginia	2	1	3	0	6
Region IV (Total)	11	9	8	3	31
Alabama	5	3	3	1	12

Federal Regions (and States)	Number of Logging Fatalities by Source of Fatal Action				Total No. Victims
	FY 1996		FY 1997		
	Fatal Action Taken by Victim	Fatal Action Taken by Other Workers	Fatal Action Taken by Victim	Fatal Action Taken by Other Workers	
Florida	1	0	0	1	2
Georgia	1	1	1	0	3
Kentucky *	-	-	-	-	-
Mississippi	1	3	3	0	7
North Carolina*	1	1	1	1	4
South Carolina*	2	0	0	0	2
Tennessee *	0	1	0	0	1
Region V (Total)	2	0	1	0	3
Indiana *	-	-	-	-	-
Illinois	1	0	0	0	1
Michigan *	-	-	-	-	-
Minnesota *	-	-	-	-	-
Ohio	1	0	0	0	1
Wisconsin	0	0	1	0	1
Region VI (Total)	3	1	4	1	9
Arkansas	1	1	2	0	4
Louisiana	0	0	2	1	3
New Mexico *	-	-	-	-	-
Oklahoma	-	-	-	-	-
Texas	2	0	0	0	2
Region VII (Total)	-	-	-	-	-
Iowa *	-	-	-	-	-
Kansas	-	-	-	-	-

Federal Regions (and States)	Number of Logging Fatalities by Source of Fatal Action				Total No. Victims
	FY 1996		FY 1997		
	Fatal Action Taken by Victim	Fatal Action Taken by Other Workers	Fatal Action Taken by Victim	Fatal Action Taken by Other Workers	
Missouri	-	-	-	-	-
Nebraska	-	-	-	-	-
Region VIII ^(Tot)	0	2	2	1	5
Colorado	-	-	-	-	-
Montana	0	1	1	0	2
North Dakota	-	-	-	-	-
South Dakota	-	-	-	-	-
Utah *	0	1	1	1	3
Wyoming *	-	-	-	-	-
Region IX ^(Total)	1	1	2	1	5
Arizona *	-	-	-	-	-
California *	1	1	2	1	5
Hawaii *	-	-	-	-	-
Nevada *	-	-	-	-	-
Region X ^(Total)	11	7	6	1	25
Alaska *	-	-	-	-	-
Idaho	2	1	1	0	4
Oregon *	5	3	1	1	10
Washington *	4	3	4	0	11
Grand Total (Regions Only)	42	21	36	8	107

* State Plan States.

Table 12

**Number of OSHA-Investigated Logging Fatalities
by Work Pattern and Federal Region
FY 1996 and FY 1997 (Source: IMIS)**

Federal Regions (and States)	Number of Logging Fatalities by Work Pattern**				
	FY 1996		FY 1997		Total No. Victims
	Victim Was Working Alone	Victim Was Working With Others	Victim Was Working Alone	Victim Was Working With Others	
	FY 1996	FY 1996	FY 1997	FY 1997	
Region I (Total)	3	0	0	1	4
Connecticut	-	-	-	-	-
Maine	1	0	0	0	1
Massachusetts	-	-	-	-	-
New Hampshire	1	0	0	0	1
Rhode Island	-	-	-	-	-
Vermont *	1	0	0	1	2
Region II (Total)	2	1	1	0	4
New Jersey	-	-	-	-	-
New York	2	1	1	0	4
Region III (Total)	6	3	10	2	21
Delaware	-	-	-	-	-
Maryland *	-	-	-	-	-
Pennsylvania	1	0	1	0	2
Virginia *	4	1	7	1	13
West Virginia	1	2	2	1	6
Region IV (Total)	7	13	9	2	31
Alabama	2	6	3	1	12

Federal Regions (and States)	Number of Logging Fatalities by Work Pattern**				
	FY 1996		FY 1997		Total No. Victims
	Victim Was Working Alone	Victim Was Working With Others	Victim Was Working Alone	Victim Was Working With Others	
	FY 1996	FY 1996	FY 1997	FY 1997	
Florida	0	1	1	0	2
Georgia	1	1	1	0	3
Kentucky *	-	-	-	-	-
Mississippi	1	3	3	0	7
North Carolina*	2	0	1	1	4
South Carolina*	0	2	0	0	2
Tennessee *	1	0	0	0	1
Region V (Total)	2	0	1	0	3
Indiana *	-	-	-	-	-
Illinois	1	0	0	0	1
Michigan *	-	-	-	-	-
Minnesota *	-	-	-	-	-
Ohio	1	0	0	0	1
Wisconsin	0	0	1	0	1
Region VI (Total)	4	0	4	1	9
Arkansas	2	0	2	0	4
Louisiana	0	0	2	1	3
New Mexico *	-	-	-	-	-
Oklahoma	-	-	-	-	-
Texas	2	0	0	0	2
Region VII (Total)	-	-	-	-	-
Iowa *	-	-	-	-	-
Kansas	-	-	-	-	-

Federal Regions (and States)	Number of Logging Fatalities by Work Pattern**				
	FY 1996		FY 1997		Total No. Victims
	Victim Was Working Alone	Victim Was Working With Others	Victim Was Working Alone	Victim Was Working With Others	
	FY 1996	FY 1996	FY 1997	FY 1997	
Missouri	-	-	-	-	-
Nebraska	-	-	-	-	-
Region VIII (Tot)	1	1	3	0	5
Colorado	-	-	-	-	-
Montana	1	0	1	0	2
North Dakota	-	-	-	-	-
South Dakota	-	-	-	-	-
Utah *	0	1	2	0	3
Wyoming *	-	-	-	-	-
Region IX (Total)	1	1	1	2	5
Arizona *	-	-	-	-	-
California *	1	1	1	2	5
Hawaii *	-	-	-	-	-
Nevada *	-	-	-	-	-
Region X (Total)	10	8	6	1	25
Alaska *	-	-	-	-	-
Idaho	2	1	1	0	4
Oregon *	4	4	1	1	10
Washington *	4	3	4	0	11
Grand Total (Regions Only)	36	27	35	9	107

* State Plan States.

** Work pattern is defined as whether the victim was working alone or whether the victim was working with others. If the victim was working alone, he was not within sight and/or hearing of others. If the victim was working with others he was within sight and/or hearing of other workers.

Table 13

**Number of Citations for Violations of Federal and State Standards
Resulting From OSHA's Investigation of Fatal Logging Incidents**

FY 1996 (Source: IMIS)

Investigations by Region and State	Violations of Federal and State Standards		
	Number Violations Per Investigation	Number Violations Related to Fatal Incidents By Investigation	Was There A Violation of the Logging Training Standard? (1910.266(i))**
	FY 1996 (FY 1997)	FY 1996 (FY 1997)	FY 1996 (FY 1997)
Region I (Total)	9 (0)	4 (0)	-
1. Maine	3	2	Yes
2. New Hampshire	0	0	No
3. Vermont*	6	2	N/A
4. Vermont*	(0)	(0)	(No)
Region II (Total)	19 (12)	5 (3)	-
5. New York	10	2	No
6. New York	5	2	Yes
7. New York	4	1	No
8. New York	(12)	(3)	(Yes)
Region III (Total)	68 (52)	11 (13)	-
9. Pennsylvania	2	2	Yes
10. Pennsylvania	(0)	(0)	(No)
11. Virginia*	5	0	N/A
12. Virginia*	14	0	N/A
13. Virginia*	11	2	N/A
14. Virginia*	19	3	N/A
15. Virginia*	3	0	N/A

Investigations by Region and State	Violations of Federal and State Standards		
	Number Violations Per Investigation	Number Violations Related to Fatal Incidents By Investigation	Was There A Violation of the Logging Training Standard? (1910.266(i))**
	FY 1996 (FY 1997)	FY 1996 (FY 1997)	FY 1996 (FY 1997)
16. Virginia*	(8)	(1)	(N/A)
17. Virginia*	(4)	(0)	(N/A)
18. Virginia*	(0)	(0)	(N/A)
19. Virginia*	(9)	(3)	(N/A)
20. Virginia*	(2)	(0)	(N/A)
21. Virginia*	(16)	(2)	(N/A)
22. Virginia*	(10)	(4)	(N/A)
23. Virginia*	(0)	(0)	(N/A)
24. West Virginia	5	2	Yes
25. West Virginia	0	0	No
26. West Virginia	9	2	Yes
27. West Virginia	(0)	(0)	(No)
28. West Virginia	(0)	(0)	(No)
29. West Virginia	(3)	(3)	(No)
Region IV_(Total)	100 (25)	51 (8)	-
30. Alabama	4	4	Yes
31. Alabama	6	0	No
32. Alabama	1	0	No
33. Alabama	2	2	No
34. Alabama	6	4	Yes
35. Alabama	2	2	Yes
36. Alabama	3	3	No
37. Alabama	14	14	Yes

Investigations by Region and State	Violations of Federal and State Standards		
	Number Violations Per Investigation	Number Violations Related to Fatal Incidents By Investigation	Was There A Violation of the Logging Training Standard? (1910.266(i))**
	FY 1996 (FY 1997)	FY 1996 (FY 1997)	FY 1996 (FY 1997)
38. Alabama	(2)	(2)	(No)
39. Alabama	(4)	(0)	(No)
40. Alabama	(1)	(0)	(No)
41. Alabama	(1)	(1)	(No)
42. Florida	4	4	Yes
43. Florida	(3)	(2)	(Yes)
44. Georgia	3	3	Yes
45. Georgia	3	3	Yes
46. Georgia	(1)	(1)	(Yes)
47. Mississippi	5	3	Yes
48. Mississippi	5	0	No
49. Mississippi	4	0	No
50. Mississippi	8	1	No
51. Mississippi	(7)	(0)	(No)
52. Mississippi	(3)	(0)	(No)
53. Mississippi	(1)	(1)	(No)
54. North Carolina*	26	7	N/A
55. North Carolina*	0	0	N/A
56. North Carolina*	(2)	(1)	(N/A)
57. North Carolina*	(0)	(0)	(N/A)
58. South Carolina*	0	0	N/A
59. South Carolina*	3	0	N/A
60. Tennessee*	1	1	N/A

Investigations by Region and State	Violations of Federal and State Standards		
	Number Violations Per Investigation	Number Violations Related to Fatal Incidents By Investigation	Was There A Violation of the Logging Training Standard? (1910.266(i))**
	FY 1996 (FY 1997)	FY 1996 (FY 1997)	FY 1996 (FY 1997)
Region V (Total)	6 (9)	3 (4)	-
61. Illinois	4	3	Yes
62. Ohio	2	0	-
63. Wisconsin	(9)	(4)	(Yes)
Region VI (Total)	3 (8)	3 (5)	-
64. Arkansas	0	0	-
65. Arkansas	0	0	-
66. Arkansas	(2)	(0)	(No)
67. Arkansas	(1)	(0)	(No)
68. Louisiana	(1)	(1)	(No)
69. Louisiana	(2)	(2)	(No)
70. Louisiana	(2)	(2)	(Yes)
71. Texas	0	0	-
72. Texas	3	3	Yes
Region VIII (Tot)	10 (13)	3 (4)	-
73. Montana	10	3	Yes
74. Montana	(12)	(3)	(Yes)
75. Utah*	0	0	N/A
76. Utah*	(1)	(1)	(N/A)
77. Utah*	(0)	(0)	(N/A)
Region IX (Total)	4 (5)	4 (1)	-
78. California*	1	1	N/A
79. California*	3	3	N/A

Investigations by Region and State	Violations of Federal and State Standards		
	Number Violations Per Investigation	Number Violations Related to Fatal Incidents By Investigation	Was There A Violation of the Logging Training Standard? (1910.266(i))**
	FY 1996 (FY 1997)	FY 1996 (FY 1997)	FY 1996 (FY 1997)
80. California	(2)	(0)	(N/A)
81. California	(0)	(0)	(N/A)
82. California	(3)	(1)	(N/A)
Region X (Total)	27 (8)	22 (6)	-
83. Idaho	2	2	Yes
84. Idaho	3	3	No
85. Idaho	0	0	No
86. Idaho	(0)	(0)	(No)
87. Oregon*	0	0	N/A
88. Oregon*	0	0	N/A
89. Oregon*	2	2	N/A
90. Oregon*	2	2	N/A
91. Oregon*	2	2	N/A
92. Oregon*	3	2	N/A
93. Oregon*	0	0	N/A
94. Oregon*	0	0	N/A
95. Oregon*	(0)	(0)	(N/A)
96. Oregon*	(0)	(0)	(N/A)
97. Washington*	7	3	N/A
98. Washington+	2	2	Yes
99. Washington*	1	1	N/A
100. Washington*	0	0	N/A
101. Washington*	1	1	N/A

Investigations by Region and State	Violations of Federal and State Standards		
	Number Violations Per Investigation	Number Violations Related to Fatal Incidents By Investigation	Was There A Violation of the Logging Training Standard? (1910.266(i))**
	FY 1996 (FY 1997)	FY 1996 (FY 1997)	FY 1996 (FY 1997)
102. Washington*	2	2	N/A
103. Washington*	0	0	N/A
104. Washington*	(4)	(4)	(N/A)
105. Washington*	(2)	(2)	(N/A)
106. Washington*	(1)	(0)	(N/A)
107. Washington*	(1)	(0)	(N/A)
Grand Total (Regions Only)	246 (132) Total: 378	106 (44) Total: 150	-

* State plan states.

** This applies to Federal standards only.

+ This investigation was conducted by Federal OSHA and Federal standards were cited.

Note: There were no logging fatality investigation case files for the Region VII states – Iowa, Kansas, Missouri and Nebraska.

Table 14

**Federal Standards Cited by Frequency
At Logging Facilities Investigated by OSHA**
(FY 1996 and FY 1997) (Source: IMIS)

State (# Insp) ¹	Federal Standard Cited		Number of Times Cited		
			FY96	FY97	Total
REGION I (Total)			3	-	3
ME (1/0)	1910.266 D	Logging (General Requirements)	1	-	1
	1910.266 G	Logging (Vehicles)	1	-	1
	1910.266 I	Logging (Training)	1	-	1
REGION II (Total)			19	12	31
NY (3/1)	1910.266 I	Logging (Training)	6	3	9
	1910.266 D	Logging (General Requirements)	4	1	5
	1910.266 F	Logging (Machines)	3	2	5
	1910.266 H	Logging (Tree Harvesting)	3	1	4
	1910.1200 E	Hazard Communication (Written Communications Program)	1	1	2
	1910.1200 G	Hazard Communication (Material Safety Data Sheets)	0	1	1
	1910.1200 H	Hazard Communication (Employee Information and Training)	0	1	1
	1910.1200 F	Hazard Communication (Labels and Other Forms of Warning)	0	1	1
	1910.252 A	Welding, Cutting and Brazing: General Requirements (Fire Prevention and Protection)	1	0	1
	1910.253 A	Oxygen-Fuel Gas Welding/Cutting (General Requirements)	0	1	1
1910.266 E	Logging (Hand and Portable Powered Tools)	1	0	1	
REGION III (Total)			16	4	20

State (# Insp) ¹	Federal Standard Cited		Number of Times Cited		
			FY96	FY97	Total
PA (1/2)	1910.266 H	Logging (Tree Harvesting)	1	0	1
	1910.266 I	Logging (Training)	1	0	1
WV (3/3)	1910.266 H	Logging (Tree Harvesting)	2	4	6
	1910.266 I	Logging (Training)	5	0	5
	1910.1200 E	Hazard Communication (Written Communications Program)	2	0	2
	1910.266 D	Logging (General Requirements)	2	0	2
	1910.1200 G	Hazard Communication (Material Safety Data Sheets)	2	0	2
	1910.1200 H	Hazard Communication (Employee Information and Training)	1	0	1
REGION IV (Total)			67	26	93
AL (8/4)	1910.266 D	Logging (General Requirements)	10	2	12
	1910.266 I	Logging (Training)	7	1	8
	1910.266 F	Logging (Machines)	4	4	8
	1910.266 H	Logging (Tree Harvesting)	6	1	7
	1910.1200 E	Hazard Communication (Written Communications Program)	4	0	4
	1904.8	Reporting of Fatality or Multiple Hospitalization Incidents	3	0	3
	1910.1200 G	Hazard Communication (Material Safety Data Sheets)	2	0	2
	1910.1200 H	Hazard Communication (Employee Information and Training)	2	0	2
FL (1/1)	1910.266 D	Logging (General Requirements)	2	1	3
	1910.266 I	Logging (Training)	1	2	3
	1910.266 H	Logging (Tree Harvesting)	1	0	1

State (# Insp) ¹	Federal Standard Cited		Number of Times Cited		
			FY96	FY97	Total
GA (2/1)	1910.266 H	Logging (Tree Harvesting)	2	1	3
	1910.266 I	Logging (Training)	1	2	3
	1904.8 A	Reporting of Fatality or Multiple Hospitalization Incidents (Within 8 hours ...)	0	1	1
MS (4/3)	1910.266 D	Logging (General Requirements)	9	6	15
	1910.266 I	Logging (Training)	5	4	9
	1910.266 H	Logging (Tree Harvesting)	2	1	3
	1910.266 F	Logging (Machines)	2	0	2
	1910.1200 E	Hazard Communication (Written Communications Program)	1	0	1
	1910.1200 G	Hazard Communication (Material Safety Data Sheets)	1	0	1
	1910.1200 H	Hazard Communication (Employee Information and Training)	1	0	1
	1910.147 C	Lockout/Tagout (General)	1	0	1
REGION V (Total)			7	9	16
IL (1/0)	1910.266 I	Logging (Training)	2	-	2
	1910.266 D	Logging (General Requirements)	1	-	1
	1904.8 A	Reporting of Fatality or Multiple Hospitalization Incidents (Within 8 hours ...)	1	-	1
OH (1/0)	1910.266 D	Logging (General Requirements)	1	-	1
	1910.266 I	Logging (Training)	1	-	1
	1904.8	Reporting of Fatality or Multiple Hospitalization Incidents	1	-	1
WI (0/1)	1910.266 H	Logging (Tree Harvesting)	-	3	3
	1910.266 D	Logging (General Requirements)	-	2	2
	1910.266 I	Logging (Training)	-	2	2
	1910.266 F	Logging (Machines)	-	1	1

State (# Insp) ¹	Federal Standard Cited		Number of Times Cited		
			FY96	FY97	Total
	1910.95 D	Noise (Monitoring)	-	1	1
REGION VI (Total)			-	10	10
AR (2/2)	1904.8	Reporting of Fatality or Multiple Hospitalization Incidents	0	2	2
	1910.1200 E	Hazard Communication (Written Communications Program)	0	1	1
	1910.1200 G	Hazard Communication (Material Safety Data Sheets)	0	1	1
	1910.266 I	Logging (Training)	0	1	1
LA (0/3)	1910.266 D	Logging (General Requirements)	0	1	1
TX (2/0)	1910.266 D	Logging (General Requirements)	3	-	3
	1910.266 I	Logging (Training)	1	-	1
REGION VIII (Total)			11	12	23
MT (1/1)	1910.266 I	Logging (Training)	4	4	8
	1910.266 H	Logging (Tree Harvesting)	2	3	5
	1910.266 D	Logging (General Requirements)	1	1	2
	1910.1030 C	Bloodborne Pathogens (Exposure Control)	1	1	2
	1910.1030 D	Bloodborne Pathogens (Methods of Compliance)	1	1	2
	1910.1030 G	Bloodborne Pathogens (Communication of Hazards to Employees)	1	1	2
	1904.8	Reporting of Fatality or Multiple Hospitalization Incidents	0	1	1
	1910.1030 F	Bloodborne Pathogens (Hepatitis B Vaccination and Post-Exposure Evaluation)	1	0	1
REGION X (Total)			19	9	28
ID (3/1)	1910.266 H	Logging (Tree Harvesting)	4	7	11
	1910.266 D	Logging (General Requirements)	4	1	5

State (# Insp) ¹	Federal Standard Cited		Number of Times Cited		
			FY96	FY97	Total
	1910.266 I	Logging (Training)	4	0	4
	1910.1030 C	Bloodborne Pathogens (Exposure Control)	0	1	1
WA* (1/0)	1910.266 D	Logging (General Requirements)	2	-	2
	1910.266 I	Logging (Training)	2	-	2
	1910.266 F	Logging (Machines)	1	-	1
	1910.266 H	Logging (Tree Harvesting)	1	-	1
	1904.8	Reporting of Fatality or Multiple Hospitalization Incidents	1	-	1
Grand Total (Regions Only)			142	82	224

* This is a state plan state, however, one fatality in FY 1996 was investigated by Federal OSHA and was cited under Federal standards.
¹ (Number equals total number fatality inspections in FY 1996/number equals total number fatality inspections in FY 1997)

A Review of Logging Fatalities Investigated by the
Occupational Safety and Health Administration in
FY 1996 and FY1997

Federal Logging Operations Standard

(The following is an excerpt from OSHA's web site of 29 CFR, Part 1910)

Standard Number: 1910.266

Standard Title: Logging operations.

SubPart Number: R

SubPart Title: Special Industries

(a)

Table of contents.

This paragraph contains the list of paragraphs and appendices contained in this section.

- a. Table of contents
- b. Scope and application
- c. Definitions
- d. General requirements
 - 1. Personal protective equipment
 - 2. First-aid kits
 - 3. Seat belts
 - 4. Fire extinguishers
 - 5. Environmental conditions
 - 6. Work areas
 - 7. Signaling and signal equipment
 - 8. Overhead electric lines
 - 9. Flammable and combustible liquids
 - 10. Explosives and blasting agents
- e. Hand and portable powered tools

1. General requirements
2. Chain saws

f. Machines

1. General requirements
2. Machine operation
3. Protective structures
4. Overhead guards
5. Machine access
6. Exhaust systems
7. Brakes
8. Guarding

g. Vehicles

h. Tree harvesting

1. General requirements
2. Manual felling
3. Bucking and limbing
4. Chipping
5. Yarding
6. Loading and unloading
7. Transport
8. Storage

i. Training

j. Effective date

k. Appendices

- Appendix A -- Minimum First-aid Supplies
- Appendix B -- Minimum First-aid Training
- Appendix C -- Corresponding ISO Agreements

(b)

Scope and application.

(b)(1)

This standard establishes safety practices, means, methods and operations for all types of logging, regardless of the end use of the wood. These types of logging include, but are not limited to, pulpwood and timber harvesting and the logging of sawlogs, veneer bolts, poles, pilings and other forest products. This standard does not cover the construction or use of cable yarding systems.

(b)(2)

This standard applies to all logging operations as defined by this section.

(b)(3)

Hazards and working conditions not specifically addressed by this section are covered by other applicable sections of Part 1910.

(c)

Definitions applicable to this section.

"Arch." An open-framed trailer or built-up framework used to suspend the leading ends of trees or logs when they are skidded.

"Backcut (felling cut)." The final cut in a felling operation.

"Ballistic nylon." A nylon fabric of high tensile properties designed to provide protection from lacerations.

"Buck." To cut a felled tree into logs.

"Butt." The bottom of the felled part of a tree.

"Cable yarding." The movement of felled trees or logs from the area where they are felled to the landing on a system composed of a cable suspended from spars and/or towers. The trees or logs may be either dragged across the ground on the cable or carried while suspended from the cable.

"Chock." A block, often wedge shaped, which is used to prevent movement; e.g., a log from rolling, a wheel from turning.

"Choker." A sling used to encircle the end of a log for yarding. One end is passed around the load, then through a loop eye, end fitting or other device at the other end of the sling. The end that passed through the end fitting or other device is then hooked to the lifting or pulling machine.

"Danger tree." A standing tree that presents a hazard to employees due to conditions such as, but not limited to, deterioration or physical damage to the root system, trunk, stem or limbs, and the direction and lean of the tree.

"Debark." To remove bark from trees or logs.

"Deck." A stack of trees or logs.

"Designated person." An employee who has the requisite knowledge, training and experience to perform specific duties.

"Domino felling." The partial cutting of multiple trees which are left standing and then pushed over with a pusher tree.

"Fell (fall)." To cut down trees.

"Feller (faller)." An employee who fells trees.

"Grounded." The placement of a component of a machine on the ground or on a device where it is firmly supported.

"Guarded." Covered, shielded, fenced, enclosed, or otherwise protected by means of suitable enclosures, covers, casings, shields, troughs, railings, screens, mats, or platforms, or by location, to prevent injury.

"Health care provider." A health care practitioner operating with the scope of his/her license, certificate, registration or legally authorized practice.

"Landing." Any place where logs are laid after being yarded, and before transport from the work site.

"Limbing." To cut branches off felled trees.

"Lodged tree (hung tree)." A tree leaning against another tree or object which prevents it from falling to the ground.

"Log." A segment sawed or split from a felled tree, such as, but not limited to, a section, bolt, or tree length.

"Logging operations." Operations associated with felling and moving trees and logs from the stump to the point of delivery, such as, but not limited to, marking danger trees and trees/logs to be cut to length, felling, limbing, bucking, debarking, chipping, yarding, loading, unloading, storing, and transporting machines, equipment and personnel to, from and between logging sites.

"Machine." A piece of stationary or mobile equipment having a self-contained power plant, that is operated off-road and used for the movement of material. Machines include, but are not limited to, tractors, skidders, front-end loaders, scrapers, graders, bulldozers, swing yarders, log stackers, log loaders, and mechanical felling devices, such as tree shears and feller-bunchers. Machines do not include airplanes or aircraft (e.g., helicopters).

"Rated capacity." The maximum load a system, vehicle, machine or piece of equipment was designed by the manufacturer to handle.

"Root wad." The ball of a tree root and dirt that is pulled from the ground when a tree is uprooted.

"Serviceable condition." A state or ability of a tool, machine, vehicle or other device to operate as it was intended by the manufacturer to operate.

"Skidding." The yarding of trees or logs by pulling or towing them across the ground.

"Slope (grade)." The increase or decrease in altitude over a horizontal distance expressed as a percentage. For example, a change of altitude of 20 feet (6 m) over a horizontal distance of 100 feet (30 m) is expressed as a 20 percent slope.

"Snag." Any standing dead tree or portion thereof.

"Spring pole." A tree, segment of a tree, limb, or sapling which is under stress or tension due to the pressure or weight of another object.

"Tie down." Chain, cable, steel strips or fiber webbing and binders attached to a truck, trailer or other conveyance as a means to secure loads and to prevent them from shifting or moving when they are being transported.

"Undercut." A notch cut in a tree to guide the direction of the tree fall and to prevent splitting or kickback.

"Vehicle." A car, bus, truck, trailer or semi-trailer owned, leased or rented by the employer that is used for transportation of employees or movement of material.

"Winching." The winding of cable or rope onto a spool or drum.

"Yarding." The movement of logs from the place they are felled to a landing.

..1910.266(d)

(d)

"General requirements."

(d)(1)

"Personal protective equipment."

(d)(1)(i)

The employer shall assure that personal protective equipment, including any personal protective equipment provided by an employee, is maintained in a serviceable condition.

(d)(1)(ii)

The employer shall assure that personal protective equipment, including any personal protective equipment provided by an employee, is inspected before initial use during each workshift. Defects or damage shall be repaired or the unserviceable personal protective equipment shall be replaced before work is commenced.

(d)(1)(iii)

The employer shall provide, at no cost to the employee, and assure that each employee handling wire rope wears, hand protection which provides adequate protection from puncture wounds, cuts and lacerations.

(d)(1)(iv)

The employer shall provide, at no cost to the employee, and assure that each employee who operates a chain saw wears leg protection constructed with cut-resistant material, such as ballistic nylon. The leg protection shall cover the full length of the thigh to the top of the boot on each leg to protect against contact with a moving chain saw. Exception: This requirement does not apply when an employee is working as a climber if the employer demonstrates that a greater hazard is posed by wearing leg protection in the particular situation, or when an employee is working from a vehicular mounted elevating and rotating work platform meeting the requirements of 29 CFR 1910.68.

..1910.266(d)(1)(v)

(d)(1)(v)

The employer shall assure that each employee wears foot protection, such as heavy-duty logging boots that are waterproof or water repellent, cover and provide support to the ankle. The employer shall assure that each employee who operates a chain saw wears foot protection that is constructed with cut-resistant material which will protect the employee against contact with a running chain saw. Sharp, calk-soled boots or other slip-resistant type boots may be worn where the employer demonstrates that they are necessary for the employee's job, the terrain, the timber type, and the weather conditions, provided that foot protection otherwise required by this paragraph is met.

(d)(1)(vi)

The employer shall provide, at no cost to the employee, and assure that each employee who works in an area where there is potential for head injury from falling or flying objects wears head protection meeting the requirements of subpart I of Part 1910.

(d)(1)(vii)

The employer shall provide, at no cost to the employee, and assure that each employee wears the following:

(d)(1)(vii)(A)

Eye protection meeting the requirements of subpart I of Part 1910 where there is potential for eye injury due to falling or flying objects; and

(d)(1)(vii)(B)

Face protection meeting the requirements of subpart I of Part 1910 where there is potential for facial injury such as, but not limited to, operating a chipper. Logger-type mesh screens may be worn by employees performing chain-saw operations and yarding.

Note to paragraph (d)(1)(vii): The employee does not have to wear a separate eye protection device where face protection covering both the eyes and face is worn.

(d)(2)

"First-aid kits."

..1910.266(d)(2)(i)

(d)(2)(i)

The employer shall provide first-aid kits at each work site where trees are being cut (e.g., felling, buckling, limbing), at each active landing, and on each employee transport vehicle. The number of first-aid kits and the content of each kit shall reflect the degree of isolation, the number of employees, and the hazards reasonably anticipated at the work site.

(d)(2)(ii)

At a minimum, each first-aid kit shall contain the items listed in Appendix A at all times.

(d)(2)(iii)

The employer also may have the number and content of first-aid kits reviewed and approved annually by a health care provider.

(d)(2)(iv)

The employer shall maintain the contents of each first-aid kit in a serviceable condition.

(d)(3)

"Seat belts." For each vehicle or machine (equipped with ROPS/FOPS or overhead guards), including any vehicle or machine provided by an employee, the employer shall assure:

(d)(3)(i)

That a seat belt is provided for each vehicle or machine operator;

(d)(3)(ii)

That each employee uses the available seat belt while the vehicle or machine is being operated;

(d)(3)(iii)

That each employee securely and tightly fastens the seat belt to restrain the employee within the vehicle or machine cab;

..1910.266(d)(3)(iv)

(d)(3)(iv)

That each machine seat belt meets the requirements of the Society of Automotive Engineers Standard SAE J386, June 1985, "Operator Restraint Systems for Off-Road Work Machines", which is incorporated by reference as specified in Sec. 1910.6.

(d)(3)(v)

That seat belts are not removed from any vehicle or machine. The employer shall replace each seat belt which has been removed from any vehicle or machine that was equipped with seat belts at the time of manufacture; and

(d)(3)(vi)

That each seat belt is maintained in a serviceable condition.

(d)(4)

"Fire extinguishers." The employer shall provide and maintain portable fire extinguishers on each machine and vehicle in accordance with the requirements of subpart L of Part 1910.

(d)(5)

"Environmental conditions." All work shall terminate and each employee shall move to a place of safety when environmental conditions, such as but not limited to, electrical storms, strong winds which may affect the fall of a tree, heavy rain or snow, extreme cold, dense fog, fires, mudslides, and darkness, create a hazard for the employee in the performance of the job.

(d)(6)

"Work areas."

(d)(6)(i)

Employees shall be spaced and the duties of each employee shall be organized so the actions of one employee will not create a hazard for any other employee.

..1910.266(d)(6)(ii)

(d)(6)(ii)

Work areas shall be assigned so that trees cannot fall into an adjacent occupied work area. The distance between adjacent occupied work areas shall be at least two tree lengths of the trees being felled. The distance between adjacent occupied work areas shall reflect the degree of slope, the density of the growth, the height of the trees, the soil structure and other hazards reasonably anticipated at that work site. A distance of greater than two tree lengths shall be maintained between adjacent occupied work areas on any slope where rolling or sliding of trees or logs is reasonably foreseeable.

(d)(6)(iii)

Each employee performing a logging operation at a logging work site shall work in a position or location that is within visual or audible contact with another employee.

(d)(6)(iv)

The employer shall account for each employee at the end of each workshift.

(d)(7)

"Signaling and signal equipment."

(d)(7)(i)

Hand signals or audible contact, such as but not limited to, whistles, horns, or radios, shall be utilized whenever noise, distance, restricted visibility, or other factors prevent clear understanding of normal voice communications between employees.

(d)(7)(ii)

Engine noise, such as from a chain saw, is not an acceptable means of signaling. Other locally and regionally recognized signals may be used.

(d)(7)(iii)

Only a designated person shall give signals, except in an emergency.

..1910.266(d)(8)

(d)(8)

"Overhead electric lines."

(d)(8)(i)

Logging operations near overhead electric lines shall be done in accordance with the requirements of 29 CFR 1910.333(c)(3).

(d)(8)(ii)

The employer shall notify the power company immediately if a felled tree makes contact with any power line. Each employee shall remain clear of the area until the power company advises that there are no electrical hazards.

(d)(9)

"Flammable and combustible liquids."

(d)(9)(i)

Flammable and combustible liquids shall be stored, handled, transported, and used in accordance with the requirements of subpart H of Part 1910.

(d)(9)(ii)

Flammable and combustible liquids shall not be transported in the driver compartment or in any passenger-occupied area of a machine or vehicle.

(d)(9)(iii)

Each machine, vehicle and portable powered tool shall be shut off during fueling. Diesel-powered machines and vehicles may be fueled while they are at idle, provided that continued operation is intended and that the employer follows safe fueling and operating procedures.

..1910.266(d)(9)(iv)

(d)(9)(iv)

Flammable and combustible liquids, including chain-saw and diesel fuel, may be used to start a fire, provided the employer assures that in the particular situation its use does not create a hazard for an employee.

(d)(10)

"Explosives and blasting agents."

(d)(10)(i)

Explosives and blasting agents shall be stored, handled, transported, and used in accordance with the requirements of subpart H of part 1910.

(d)(10)(ii)

Only a designated person shall handle or use explosives and blasting agents.

(d)(10)(iii)

Explosives and blasting agents shall not be transported in the driver compartment or in any passenger-occupied area of a machine or vehicle.

(e)

"Hand and portable powered tools."

(e)(1)

"General requirements."

(e)(1)(i)

The employer shall assure that each hand and portable powered tool, including any tool provided by an employee, is maintained in serviceable condition.

(e)(1)(ii)

The employer shall assure that each tool, including any tool provided by an employee, is inspected before initial use during each workshift. At a minimum, the inspection shall include the following:

..1910.266(e)(1)(ii)(A)

(e)(1)(ii)(A)

Handles and guards, to assure that they are sound, tight-fitting, properly shaped, free of splinters and sharp edges, and in place;

(e)(1)(ii)(B)

Controls, to assure proper function;

(e)(1)(ii)(C)

Chain-saw chains, to assure proper adjustment;

(e)(1)(ii)(D)

Chain-saw mufflers, to assure that they are operational and in place;

(e)(1)(ii)(E)

Chain brakes and nose shielding devices, to assure that they are in place and function properly;

(e)(1)(ii)(F)

Heads of shock, impact-driven and driving tools, to assure that there is no mushrooming;

(e)(1)(ii)(G)

Cutting edges, to assure that they are sharp and properly shaped; and

(e)(1)(ii)(H)

All other safety devices, to assure that they are in place and function properly.

(e)(1)(iii)

The employer shall assure that each tool is used only for purposes for which it has been designed.

..1910.266(e)(1)(iv)

(e)(1)(iv)

When the head of any shock, impact-driven or driving tool begins to chip, it shall be repaired or removed from service.

(e)(1)(v)

The cutting edge of each tool shall be sharpened in accordance with manufacturer's specifications whenever it becomes dull during the workshift.

(e)(1)(vi)

Each tool shall be stored in the provided location when not being used at a work site.

(e)(1)(vii)

Racks, boxes, holsters or other means shall be provided, arranged and used for the transportation of tools so that a hazard is not created for any vehicle operator or passenger.

(e)(2)

"Chain saws."

(e)(2)(i)

Each chain saw placed into initial service after the effective date of this section shall be equipped with a chain brake and shall otherwise meet the requirements of the ANSI B175.1-1991 "Safety Requirements for Gasoline-Powered Chain Saws", which is incorporated by reference as specified in Sec. 1910.6. Each chain saw placed into service before the effective date of this section shall be equipped with a protective device that minimizes chain-saw kickback. No chain-saw kickback device shall be removed or otherwise disabled.

..1910.266(e)(2)(ii)

(e)(2)(ii)

Each gasoline-powered chain saw shall be equipped with a continuous pressure throttle control system which will stop the chain when pressure on the throttle is released.

(e)(2)(iii)

The chain saw shall be operated and adjusted in accordance with the manufacturer's instructions.

(e)(2)(iv)

The chain saw shall be fueled at least 10 feet (3 m) from any open flame or other source of ignition.

(e)(2)(v)

The chain saw shall be started at least 10 feet (3 m) from the fueling area.

(e)(2)(vi)

The chain saw shall be started on the ground or where otherwise firmly supported. Drop starting a chain saw is prohibited.

(e)(2)(vii)

The chain saw shall be started with the chain brake engaged.

(e)(2)(viii)

The chain saw shall be held with the thumbs and fingers of both hands encircling the handles during operation unless the employer demonstrates that a greater hazard is posed by keeping both hands on the chain saw in that particular situation.

(e)(2)(ix)

The chain-saw operator shall be certain of footing before starting to cut. The chain saw shall not be used in a position or at a distance that could cause the operator to become off-balance, to have insecure footing, or to relinquish a firm grip on the saw.

..1910.266(e)(2)(x)

(e)(2)(x)

Prior to felling any tree, the chain-saw operator shall clear away brush or other potential obstacles which might interfere with cutting the tree or using the retreat path.

(e)(2)(xi)

The chain saw shall not be used to cut directly overhead.

(e)(2)(xii)

The chain saw shall be carried in a manner that will prevent operator contact with the cutting chain and muffler.

(e)(2)(xiii)

The chain saw shall be shut off or the throttle released before the feller starts his retreat.

(e)(2)(xiv)

The chain saw shall be shut down or the chain brake shall be engaged whenever a saw is carried further than 50 feet (15.2 m). The chain saw shall be shut down or the chain brake shall be engaged when a saw is carried less than 50 feet if conditions such as, but not limited to, the terrain, underbrush and slippery surfaces, may create a hazard for an employee.

(f)

"Machines."

(f)(1)

"General requirements."

(f)(1)(i)

The employer shall assure that each machine, including any machine provided by an employee, is maintained in serviceable condition.

..1910.266(f)(1)(ii)

(f)(1)(ii)

The employer shall assure that each machine, including any machine provided by an employee, is inspected before initial use during each workshift. Defects or damage shall be repaired or the unserviceable machine shall be replaced before work is commenced.

(f)(1)(iii)

The employer shall assure that operating and maintenance instructions are available on the machine or in the area where the machine is being operated. Each machine operator and maintenance employee shall comply with the operating and maintenance instructions.

(f)(2)

"Machine operation."

(f)(2)(i)

The machine shall be started and operated only by a designated person.

(f)(2)(ii)

Stationary logging machines and their components shall be anchored or otherwise stabilized to prevent movement during operation.

(f)(2)(iii)

The rated capacity of any machine shall not be exceeded.

(f)(2)(iv)

To maintain stability, the machine must be operated within the limitations imposed by the manufacturer as described in the operating and maintenance instructions for that machine. on any slope which is greater than the maximum slope recommended by the manufacturer.

(f)(2)(v)

Before starting or moving any machine, the operator shall determine that no employee is in the path of the machine.

..1910.266(f)(2)(vi)

(f)(2)(vi)

The machine shall be operated only from the operator's station or as otherwise recommended by the manufacturer.

(f)(2)(vii)

The machine shall be operated at such a distance from employees and other machines such that operation will not create a hazard for an employee.

(f)(2)(viii)

No employee other than the operator shall ride on any mobile machine unless seating, seat belts and other protection equivalent to that provided for the operator are provided.

(f)(2)(ix)

No employee shall ride on any load.

(f)(2)(x)

Before the operator leaves the operator's station of a machine, it shall be secured as follows:

(f)(2)(x)(A)

The parking brake or brake locks shall be applied;

(f)(2)(x)(B)

The transmission shall be placed in the manufacturer's specified park position; and

(f)(2)(x)(C)

Each moving element shall as, but not limited to blades, buckets, saws and shears, shall be lowered to the ground or otherwise secured.

..1910.266(f)(2)(xi)

(f)(2)(xi)

If a hydraulic or pneumatic storage device can move the moving elements such as, but not limited to, blades, buckets, saws and shears, after the machine is shut down, the pressure or stored energy from the element shall be discharged as specified by the manufacturer.

(f)(2)(xii)

The rated capacity of any vehicle transporting a machine shall not be exceeded.

(f)(2)(xiii)

The machine shall be loaded, secured and unloaded so that it will not create a hazard for any employee.

(f)(3)

"Protective structures."

(f)(3)(i)

Each tractor, skidder, swing yarder, log stacker, log loader and mechanical felling device, such as tree shears or feller-buncher, placed into initial service after February 9, 1995, shall be equipped with falling object protective structure (FOPS) and/or rollover protective structure (ROPS). The employer shall replace FOPS or ROPS which have been removed from any machine. Exception: This requirement does not apply to machines which are capable of 360 degree rotation.

(f)(3)(ii)

(f)(3)(ii)(A)

ROPS shall be tested, installed, and maintained in serviceable condition.

..1910.266(f)(3)(ii)(B)

(f)(3)(ii)(B)

Each machine manufactured after August 1, 1996, shall have ROPS tested, installed, and maintained in accordance with the Society of Automotive Engineers SAE J1040, April 1988, "Performance Criteria for Rollover Protective Structures (ROPS) for Construction, Earthmoving, Forestry, and Mining Machines", which is incorporated by reference as specified in Sec. 1910.6.

(f)(3)(iii)

FOPS shall be installed, tested and maintained in accordance with the Society of Automotive Engineers SAE J231, January 1981, "Minimum Performance Criteria for Falling Object Protective Structures (FOPS)", which is incorporated by reference as specified in Sec. 1910.6.

(f)(3)(iv)

ROPS and FOPS shall meet the requirements of the Society of Automotive Engineers SAE J397, April 1988, "Deflection Limiting Volume-ROPS/FOPS Laboratory Evaluation", which is incorporated by reference as specified in Sec. 1910.6.

(f)(3)(v)

Each protective structure shall be of a size that does not impede the operator's normal movements.

(f)(3)(vi)

The overhead covering of each cab shall be of solid material and shall extend over the entire canopy.

..1910.266(f)(3)(vii)

(f)(3)(vii)

Each machine manufactured after August 1, 1996, shall have a cab that is fully enclosed with mesh material with openings no greater than 2 inches (5.08 cm) at its least dimension. The cab may be enclosed with other material(s) where the employer demonstrates such material(s) provides equivalent protection and visibility. Exception: Equivalent visibility is not required for the lower portion of the cab where there are control panels or similar obstructions in the cab, or where visibility is not necessary for safe operation of the machine.

(f)(3)(viii)

Each machine manufactured on or before August 1, 1996 shall have a cab which meets the requirements specified in paragraph (f)(3)(vii) or a protective canopy for the operator which meets the following requirements:

(f)(3)(viii)(A)

The protective canopy shall be constructed to protect the operator from injury due to falling trees, limbs, saplings or branches which might enter the compartment side areas and from snapping winch lines or other objects;

(f)(3)(viii)(B)

The lower portion of the cab shall be fully enclosed with solid material, except at entrances, to prevent the operator from being injured from obstacles entering the cab;

(f)(3)(viii)(C)

The upper rear portion of the cab shall be fully enclosed with open mesh material with openings of such size as to reject the entrance of an object larger than 2 inches in diameter. It shall provide maximum rearward visibility; and

(f)(3)(viii)(D)

Open mesh shall be extended forward as far as possible from the rear corners of the cab sides so as to give the maximum protection against obstacles, branches, etc., entering the cab area.

..1910.266(f)(3)(ix)

(f)(3)(ix)

The enclosure of the upper portion of each cab shall allow maximum visibility.

(f)(3)(x)

When transparent material is used to enclose the upper portion of the cab, it shall be made of safety glass or other material that the employer demonstrates provides equivalent protection and visibility.

(f)(3)(xi)

Transparent material shall be kept clean to assure operator visibility.

(f)(3)(xii)

Transparent material that may create a hazard for the operator, such as but not limited to, cracked, broken or scratched safety glass, shall be replaced.

(f)(3)(xiii)

Deflectors shall be installed in front of each cab to deflect whipping saplings and branches. Deflectors shall be located so as not to impede visibility and access to the cab.

(f)(3)(xiv)

The height of each cab entrance shall be at least 52 inches (1.3 meters) from the floor of the cab.

(f)(3)(xv)

Each machine operated near cable yarding operations shall be equipped with sheds or roofs of sufficient strength to provide protection from breaking lines.

..1910.266(f)(4)

(f)(4)

"Overhead guards." Each forklift shall be equipped with an overhead guard meeting the requirements of the American Society of Mechanical Engineers, ASME B56.6-1992 (with addenda), "Safety Standard for Rough Terrain Forklift Trucks", which is incorporated by reference as specified in Sec. 1910.6.

(f)(5)

"Machine access."

(f)(5)(i)

Machine access systems, meeting the specifications of the Society of Automotive Engineers, SAE J185, June 1988, "Recommended Practice for Access Systems for Off-Road Machines'," which is incorporated by reference as specified in Sec. 1910.6, shall be provided for each machine where the operator or any other employee must climb onto the machine to enter the cab or to perform maintenance.

(f)(5)(ii)

Each machine cab shall have a second means of egress.

(f)(5)(iii)

Walking and working surfaces of each machine and machine work station shall have a slip resistant surface to assure safe footing.

(f)(5)(iv)

The walking and working surface of each machine shall be kept free of waste, debris and any other material which might result in fire, slipping, or falling.

(f)(6)

"Exhaust systems."

(f)(6)(i)

The exhaust pipes on each machine shall be located so exhaust gases are directed away from the operator.

(f)(6)(ii)

The exhaust pipes on each machine shall be mounted or guarded to protect each employee from accidental contact.

..1910.266(f)(6)(iii)

(f)(6)(iii)

The exhaust pipes shall be equipped with spark arresters. Engines equipped with turbochargers do not require spark arresters.

(f)(6)(iv)

Each machine muffler provided by the manufacturer, or their equivalent, shall be in place at all times the machine is in operation.

(f)(7)

"Brakes."

(f)(7)(i)

Service brakes shall be sufficient to stop and hold each machine and its rated load capacity on the slopes over which it is being operated.

(f)(7)(ii)

Each machine placed into initial service on or after September 8, 1995 shall also be equipped with: back-up or secondary brakes that are capable of stopping the machine regardless of the direction of travel or whether the engine is running; and parking brakes that are capable of continuously holding a stopped machine stationary.

(f)(8)

"Guarding."

(f)(8)(i)

Each machine shall be equipped with guarding to protect employees from exposed moving elements, such as but not limited to, shafts, pulleys, belts on conveyors, and gears, in accordance with the requirements of subpart O of part 1910.

..1910.266(f)(8)(ii)

(f)(8)(ii)

Each machine used for debarking, limbing and chipping shall be equipped with guarding to protect employees from flying wood chunks, logs, chips, bark, limbs and other material in accordance with the requirements of subpart O of part 1910.

(f)(8)(iii)

The guarding on each machine shall be in place at all times the machine is in operation.

(g)

"Vehicles."

(g)(1)

The employer shall assure that each vehicle used to perform any logging operation is maintained in serviceable condition.

(g)(2)

The employer shall assure that each vehicle used to perform any logging operation is inspected before initial use during each workshift. Defects or damage shall be repaired or the unserviceable vehicle shall be replaced before work is commenced.

(g)(3)

The employer shall assure that operating and maintenance instructions are available in each vehicle. Each vehicle operator and maintenance employee shall comply with the operating and maintenance instructions.

(g)(4)

The employer shall assure that each vehicle operator has a valid operator's license for the class of vehicle being operated.

..1910.266(g)(5)

(g)(5)

Mounting steps and handholds shall be provided for each vehicle wherever it is necessary to prevent an employee from being injured when entering or leaving the vehicle.

(g)(6)

The seats of each vehicle shall be securely fastened.

(g)(7)

The requirements of paragraphs (f)(2)(iii), (f)(2)(v), (f)(2)(vii), (f)(2)(x), (f)(2)(xiii), and (f)(7) of this section shall also apply to each vehicle used to transport any employee off public roads or to perform any logging operation, including any vehicle provided by an employee.

(h)

"Tree harvesting."

(h)(1)

"General requirements."

(h)(1)(i)

Trees shall not be felled in a manner that may create a hazard for an employee, such as but not limited to, striking a rope, cable, power line, or machine.

(h)(1)(ii)

The immediate supervisor shall be consulted when unfamiliar or unusually hazardous conditions necessitate the supervisor's approval before cutting is commenced.

(h)(1)(iii)

While manual felling is in progress, no yarding machine shall be operated within two tree lengths of trees being manually felled. Exception: This provision does not apply to yarding machines performing tree pulling operations.

..1910.266(h)(1)(iv)

(h)(1)(iv)

No employee shall approach a feller closer than two tree lengths of trees being felled until the feller has acknowledged that it is safe to do so, unless the employer demonstrates that a team of employees is necessary to manually fell a particular tree.

(h)(1)(v)

No employee shall approach a mechanical felling operation closer than two tree lengths of the trees being felled until the machine operator has acknowledged that it is safe to do so.

(h)(1)(vi)

Each danger tree shall be felled, removed or avoided. Each danger tree, including lodged trees and snags, shall be felled or removed using mechanical or other techniques that minimize employee exposure before work is commenced in the area of the danger tree. If the danger tree is not felled or removed, it shall be marked and no work shall be conducted within two tree lengths of the danger tree unless the employer demonstrates that a shorter distance will not create a hazard for an employee.

(h)(1)(vii)

Each danger tree shall be carefully checked for signs of loose bark, broken branches and limbs or other damage before they are felled or removed. Accessible loose bark and other damage that may create a hazard for an employee shall be removed or held in place before felling or removing the tree.

(h)(1)(viii)

Felling on any slope where rolling or sliding of trees or logs is reasonably foreseeable shall be done uphill from, or on the same level as, previously felled trees.

(h)(1)(ix)

Domino felling of trees is prohibited.

Note to paragraph (h)(1)(ix): The definition of domino felling does not include the felling of a single danger tree by felling another single tree into it.

..1910.266(h)(2)

(h)(2)

"Manual felling."

(h)(2)(i)

Before felling is started, the feller shall plan and clear a retreat path. The retreat path shall extend diagonally away from the expected felling line unless the employer demonstrates that such a retreat path poses a greater hazard than an alternate path. Once the backcut has been made the feller shall immediately move a safe distance away from the tree on the retreat path.

(h)(2)(ii)

Before each tree is felled, conditions such as, but not limited to, snow and ice accumulation, the wind, the lean of tree, dead limbs, and the location of other trees, shall be evaluated by the feller and precautions taken so a hazard is not created for an employee.

(h)(2)(iii)

Each tree shall be checked for accumulations of snow and ice. Accumulations of snow and ice that may create a hazard for an employee shall be removed before felling is commenced in the area or the area shall be avoided.

(h)(2)(iv)

When a spring pole or other tree under stress is cut, no employee other than the feller shall be closer than two trees lengths when the stress is released.

(h)(2)(v)

An undercut shall be made in each tree being felled unless the employer demonstrates that felling the particular tree without an undercut will not create a hazard for an employee. The undercut shall be of a size so the tree will not split and will fall in the intended direction.

..1910.266(h)(2)(vi)

(h)(2)(vi)

A backcut shall be made in each tree being felled. The backcut shall leave sufficient hinge wood to hold the tree to the stump during most of its fall so that the hinge is able to guide the tree's fall in the intended direction.

(h)(2)(vii)

The backcut shall be above the level of the horizontal facecut in order to provide an adequate platform to prevent kickback. Exception: The backcut may be at or below the horizontal facecut in tree pulling operations.

Note to paragraph (h)(2)(vii): This requirement does not apply to open face felling where two angled facecuts rather than a horizontal facecut are used.

(h)(3)

"Limbing and bucking."

(h)(3)(i)

Limbing and bucking on any slope where rolling or sliding of trees or logs is reasonably foreseeable shall be done on the uphill side of each tree or log.

(h)(3)(ii)

Before bucking or limbing wind-thrown trees, precautions shall be taken to prevent the root wad, butt or logs from striking an employee. These precautions include, but are not limited to, chocking or moving the tree to a stable position.

(h)(4)

"Chipping (in-woods locations)."

(h)(4)(i)

Chipper access covers or doors shall not be opened until the drum or disc is at a complete stop.

(h)(4)(ii)

Infeed and discharge ports shall be guarded to prevent contact with the disc, knives, or blower blades.

..1910.266(h)(4)(iii)

(h)(4)(iii)

The chipper shall be shut down and locked out in accordance with the requirements of 29 CFR 1910.147 when an employee performs any servicing or maintenance.

(h)(4)(iv)

Detached trailer chippers shall be chocked during usage on any slope where rolling or sliding of the chipper is reasonably foreseeable.

(h)(5)
"Yarding."

(h)(5)(i)
No log shall be moved until each employee is in the clear.

(h)(5)(ii)
Each choker shall be hooked and unhooked from the uphill side or end of the log, unless the employer demonstrates that it is not feasible in the particular situation to hook or unhook the choker from the uphill side. Where the choker is hooked or unhooked from the downhill side or end of the log, the log shall be securely chocked to prevent rolling, sliding or swinging.

(h)(5)(iii)
Each choker shall be positioned near the end of the log or tree length.

(h)(5)(iv)
Each machine shall be positioned during winching so the machine and winch are operated within their design limits.

..1910.266(h)(5)(v)

(h)(5)(v)
No yarding line shall be moved unless the yarding machine operator has clearly received and understood the signal to do so. When in doubt, the yarding machine operator shall repeat the signal and wait for a confirming signal before moving any line.

(h)(5)(vi)
No load shall exceed the rated capacity of the pallet, trailer, or other carrier.

(h)(5)(vii)
Towed equipment, such as but not limited to, skid pans, pallets, arches, and trailers, shall be attached to each machine or vehicle in such a manner as to allow a full 90 degree turn; to prevent overrunning of the towing machine or vehicle; and to assure that the operator is always in control of the towed equipment.

(h)(5)(viii)
The yarding machine or vehicle, including its load, shall be operated with safe clearance from all obstructions that may create a hazard for an employee.

(h)(5)(ix)

Each yarded tree shall be placed in a location that does not create a hazard for an employee and an orderly manner so that the trees are stable before bucking or limbing is commenced.

(h)(6)

"Loading and unloading."

(h)(6)(i)

The transport vehicle shall be positioned to provide working clearance between the vehicle and the deck.

..1910.266(h)(6)(ii)

(h)(6)(ii)

Only the loading or unloading machine operator and other personnel the employer demonstrates are essential shall be in the loading or unloading work area during this operation.

(h)(6)(iii)

No transport vehicle operator shall remain in the cab during loading and unloading if the logs are carried or moved over the truck cab, unless the employer demonstrates that it is necessary for the operator to do so. Where the transport vehicle operator remains in the cab, the employer shall provide operator protection, such as but not limited to, reinforcement of the cab.

(h)(6)(iv)

Each log shall be placed on a transport vehicle in an orderly manner and tightly secured.

(h)(6)(v)

The load shall be positioned to prevent slippage or loss during handling and transport.

(h)(6)(vi)

Each stake and chock which is used to trip loads shall be so constructed that the tripping mechanism is activated on the side opposite the release of the load.

(h)(6)(vii)

Each tie down shall be left in place over the peak log to secure all logs until the unloading lines or other protection the employer demonstrates is equivalent has been put in place. A stake of sufficient strength to withstand the forces of shifting or moving logs, shall be considered equivalent protection provided that the logs are not loaded higher than the stake.

..1910.266(h)(6)(viii)

(h)(6)(viii)

Each tie down shall be released only from the side on which the unloading machine operates, except as follows:

(h)(6)(viii)(A)

When the tie down is released by a remote control device; and

(h)(6)(viii)(B)

When the employee making the release is protected by racks, stanchions or other protection the employer demonstrates is capable of withstanding the force of the logs.

(h)(7)

"Transport." The transport vehicle operator shall assure that each tie down is tight before transporting the load. While enroute, the operator shall check and tighten the tie downs whenever there is reason to believe that the tie downs have loosened or the load has shifted.

(h)(8)

"Storage." Each deck shall be constructed and located so it is stable and provides each employee with enough room to safely move and work in the area.

(i)

"Training."

(i)(1)

The employer shall provide training for each employee, including supervisors, at no cost to the employee.

(i)(2)

"Frequency." Training shall be provided as follows:

..1910.266(i)(2)(i)

(i)(2)(i)

As soon as possible but not later than the effective date of this section for initial training for each current and new employee;

(i)(2)(ii)

Prior to initial assignment for each new employee;

(i)(2)(iii)

Whenever the employee is assigned new work tasks, tools, equipment, machines or vehicles; and

(i)(2)(iv)

Whenever an employee demonstrates unsafe job performance.

(i)(3)

"Content." At a minimum, training shall consist of the following elements:

(i)(3)(i)

Safe performance of assigned work tasks;

(i)(3)(ii)

Safe use, operation and maintenance of tools, machines and vehicles the employee uses or operates, including emphasis on understanding and following the manufacturer's operating and maintenance instructions, warnings and precautions;

(i)(3)(iii)

Recognition of safety and health hazards associated with the employee's specific work tasks, including the use of measures and work practices to prevent or control those hazards;

(i)(3)(iv)

Recognition, prevention and control of other safety and health hazards in the logging industry;

..1910.266(i)(3)(v)

(i)(3)(v)

Procedures, practices and requirements of the employer's work site; and

(i)(3)(vi)

The requirements of this standard.

(i)(4)

Training of an employee due to unsafe job performance, or assignment of new work tasks, tools, equipment, machines, or vehicles; may be limited to those elements in paragraph (i)(3) of this section which are relevant to the circumstances giving rise to the need for training.

(i)(5)

"Portability of training."

(i)(5)(i)

Each current employee who has received training in the particular elements specified in paragraph (i)(3) of this section shall not be required to be retrained in those elements.

(i)(5)(ii)

Each new employee who has received training in the particular elements specified in paragraph (i)(3) of this section shall not be required to be retrained in those elements prior to initial assignment.

(i)(5)(iii)

The employer shall train each current and new employee in those elements for which the employee has not received training.

..1910.266(i)(5)(iv)

(i)(5)(iv)

The employer is responsible for ensuring that each current and new employee can properly and safely perform the work tasks and operate the tools, equipment, machines, and vehicles used in their job.

(i)(6)

Each new employee and each employee who is required to be trained as specified in paragraph (i)(2) of this section, shall work under the close supervision of a designated person until the employee demonstrates to the employer the ability to safely perform their new duties independently.

(i)(7)

"First-aid training."

(i)(7)(i)

The employer shall assure that each employee, including supervisors, receives or has received first-aid and CPR training meeting at least the requirements specified in Appendix B.

(i)(7)(ii)

The employer shall assure that each employee's first-aid and CPR training and/or certificate of training remain current.

(i)(8)

All training shall be conducted by a designated person.

(i)(9)

The employer shall assure that all training required by this section is presented in a manner that the employee is able to understand. The employer shall assure that all training materials used are appropriate in content and vocabulary to the educational level, literacy, and language skills of the employees being trained.

..1910.266(i)(10)

(i)(10)

"Certification of training."

(i)(10)(i)

The employer shall verify compliance with paragraph (i) of this section by preparing a written certification record. The written certification record shall contain the name or other identity of the employee trained, the date(s) of the training, and the signature of the person who conducted the training or the signature of the employer. If the employer relies on training conducted prior to the employee's hiring or completed prior to the effective date of this section, the certification record shall indicate the date the employer determined the prior training was adequate.

(i)(10)(ii)

The most recent training certification shall be maintained.

(i)(11)

"Safety and health meetings." The employer shall hold safety and health meetings as necessary and at least each month for each employee. Safety and health meetings may be conducted individually, in crew meetings, in larger groups, or as part of other staff meetings.

(j)

"Effective date." This section is effective February 9, 1995. All requirements under this section commence on the effective date.

(k)

"Appendices." Appendices A and B of this section are mandatory. The information contained in Appendix C of this section is informational and is not intended to create any additional obligations not otherwise imposed or to detract from existing regulations.

Note: The note added at the bottom of this standard 1910.266 in the Federal Register of August 9, 1995, has been superseded by the corrections made in the Federal Register of September 8, 1995.

[59 FR 51672, Oct. 12, 1994; 60 FR 7447, Feb. 8, 1995; 60 FR 40457, Aug. 9, 1995; 60 FR 47022, Sept. 8, 1995; 61 FR 9227, March 7, 1996]

REPORT EVALUATION FORM

A Review of Logging Fatalities Investigated by the
Occupational Safety and Health Administration in FY 1996 and FY 1997

Part 2 of 2

★★ Report Evaluation Form

This logging report is a continuation of fatality reports produced by the Occupational Safety and Health Administration (OSHA) in the 1980's and early 1990's. The format has been modified to make the material more user-friendly, and to direct the focus of the material more toward compliance activities. This report represents one of a number of reports that are being proposed using information in OSHA's Integrated Management Information System (IMIS). The overall goal is to develop more reports that are useful to you and to make them available in a more timely fashion.

The fatality reports are intended to be reference documents. For each Standard Industrial Classification (SIC), the initial base report, with some exceptions, will cover 10 years of compliance information, and will be kept current through updates every 2-5 years. As we formalize this modified report format and process, we would appreciate your comments, because your input is important to us. Please take a few minutes to respond to the following questions. (For additional space, use the last page.)

1. Is the report format user-friendly?
 - a. Yes: ___ No: ___ (Please check one answer.)
 - b. If the answer is no, please describe below how we can improve the user-friendly format.

2. Logging (SIC 2411) was chosen for this initial report because it represents one of the Agency's 5-year Strategic Plan targets, and because, over the past 10 years, there have been significantly more deaths due to logging accidents than in any other industry sector (SIC). While the number of fatalities occurring nationwide will continue to be one yard stick for determining which SICs to report on, we would like to know other criteria you believe should be applied and your suggestion of other SICs that should be reported on.

a. Describe below your suggested criteria for determining which SICs to report on?

b. Applying your suggested criteria, identify below SICs that you recommend be reported on, in order of priority?

3. In developing this logging report (Part 2 of 2), the broadest range of issues was addressed, e.g., month and year of the fatality, geographical location of the fatality, age of the victim, etc. Did we miss any significant issues? Did we address issues of limited value? Let us know below.

a. Does the report adequately address the significant issues?

Yes: ___ No: ___ (Please check one answer.)

b. If the answer is no, please describe below the significant issues you believe should be addressed in future reports, and state why?

c. Please describe below issues addressed in this report that you believe have limited value, and state why?

d. Please describe below issues whose value could be significantly improved on if represented differently, e.g., proposed penalty amounts represented as an average rather than a total, the weekday of the fatality rather than the time of day, etc., and state why?

4. Overall, how would you score the reports usefulness as a reference document?

a. Excellent: ___ b. Very Good: ___ c. Good: ___
d. Fair: ___ e. Poor: ___

