

Major Logging Injuries in Louisiana: Nature and Trends 1985-1998

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Logging is one of the most dangerous industries (according to some statistics, THE most dangerous industry). Let's see how we stack up alongside a few other industries: In 1995, 98 loggers died nationwide (116 if you count supervisors), making a fatality rate of 101 fatalities per 100,000 workers. This rate was exceeded only by fishermen (104) and sailors (115). The rate for airplane pilots and navigators was 97. The rate for truck drivers was 26, policemen 17, heavy equipment mechanics 15, firefighters 13, construction trades 12, and welders 12. The number of logger fatalities nationwide has not improved (through 1999).

Increased workers' compensation cost is a major concern to employers. Workers' compensation rates are influenced by the past experience of the employer. An understanding of the most frequent injuries and how they compare to logging operations on a state-wide basis would enable those involved in logging operations, insurance companies and loss prevention programs to clarify the nature of worker injury problems and the necessary actions to prevent the frequency of injuries. Fewer accidents help reduce costs; detailed, accurate information is vital to decision making relating to occupational injury. Following is some statistical information on the nature and scope of occupational injuries in the logging industry in Louisiana from 1985 through 1998.

METHODOLOGY

The data presented in this report are based on reportable claims (fatality, a permanent disability, or a disability resulting in more than 7 lost calendar days) which were received by the Office of Workers' Compensation between 1985 and 1998 for employees covered under the Louisiana Workers' Compensation Act.

RESULTS & DISCUSSION

Characteristics of Injuries and Illnesses

For the SIC 2411 (logging) data, the number of workers' compensation claims in LA increased from 495 in 1985 to a high of 566 in 1987, but then dropped dramatically from 448 in 1990 and to 246 in 1992 and under 200 in 1996 - 1998 (Figure 1).

The number of employees in logging operations fell from 3348 in 1985 to 2784 in 1986, but then increased to 3491 in 1998. The dramatic drop in employment during 1985-6 is reflective of the recession in the logging industry and generally tough times for Louisiana during that year (Figure 2).

Incidence rates, based on number of accidents per 100 employees, followed the same trends as the total number of claims. To get relative equivalence across years, these figures assume full-time employees are working 40 hours per week for 50 weeks per year. The reduction in the incidence rate in the logging industry suggests that changes occurred in logging operations between 1987 and 1991. This is the same time period that significant mechanization of felling occurred.

Characteristics of the Claimant

Analysis of the SIC 2411 data showed that logging truck drivers were responsible for 20% of claims. Saw operators and helpers each contributed approximately 9% of claims.

During 1985-1990, approximately 57% of the claims were accounted for by workers employed less than one year (Figure 3). Employees with less than three years of employment accounted for 82% of all claims. This trend was stable across years 1985-1990. Employee turnover rates would be unknown and would influence these numbers. Nonetheless, the finding that most accidents happen to employees with low seniority (and, presumably little experience) follows traditional safety theory that inexperienced workers have more accidents. Besides that, one cannot assume that a new employee with prior experience was properly trained. Nor can an experienced employee be expected to be fully familiar with the methodology of a new work crew. Training plus extensive supervision by experienced management could reduce the frequency and severity of accidents for employees who are new to logging or to a specific contractor's work practices and procedures.

Characteristics of the Injury

Cuts and lacerations accounted for the largest percentage of claims in the earlier years of this study (34% in 1987) (Figure 4). These claims included all open wounds and includes injection of a foreign substance under pressure. Sprains and Strains (23%) and fractures (21%) accounted for the greatest proportion of claims in the later years. Strains and sprains included torn ligaments, ruptured muscle and knee cartilage, as well as spinal injuries.

Logging operations involve extensive cutting and lifting. Since these processes are inherently dangerous, careful safety analysis of industrial jobs and procedures should be stressed.

Plants & trees (31%), tools & equipment (19%), and parts & materials (18%) were the most common source of injury (Figure 5). Power saws were responsible for most of the tool/equipment claims, whereas workers being struck by trees or logs resulted in most of the "struck by/struck against" claims (Figure 6). In addition, structures/surfaces (e.g., the outdoor ground and machinery steps) accounted for 12% of the claims.

The type of accident or exposure identifies the event which directly resulted in injury or illness. As indicated, the clear majority of claims were due to being struck by or struck against an object (58%) (Figure 6). Approximately one half of this 58% is due to falling objects. Falls (14%) and bodily reaction/exertion (12%) were next in line. The majority of falls occurred off vehicles and onto the working surfaces. Most overexertion cases were from lifting, pulling or pushing objects. The trends were less well defined for the remaining categories. The data confirm that the most hazardous activities in logging operations is in cutting trees and moving logs. Work processes need to be assessed, with particular emphasis on the safety of all employees. Since the volume of logs produced per day is critical to logging operations success, there may be a tendency to encourage workers to move too quickly, thus increasing the risk of injury.

The part of the body affected identifies the part of the injured or ill employee's body directly affected by the injury or illness. Nearly one third (32%) of claims occurred to the lower extremities, i.e. thighs, knees, ankles and feet (Figure 7). Injuries to the back accounted alone for 14% of claims. Head, fingers, upper extremities and multiple areas

each accounted for approximately 10%. Less than 1% of claims were from bodily systems (e.g., internal organs, nerve cells). The percentages were stable across 1986-1998 for the various parts of body affected. Injuries to employees in logging operations tended to center on cuts to the lower extremities from powered hand tools and on knee injuries from slipping. The dangers imposed by chain saws has long been recognized. Care should be taken to ensure proper training, supervision, and stress the use of personal protective equipment in reducing the adverse consequences of cuts to the lower extremities.

Employee Fatalities

Logging accounted for 3 to 4% of all occupational fatalities in Louisiana during 1985-1990. Other industries, such as the construction or oil and gas services industries, account for as much as 15% of the total occupational fatalities annually in Louisiana. Employee fatalities in logging have decreased from a high in 1985 of 9 deaths to 5 per year from 1987 through 1990. Falling trees were the most frequent cause of fatalities. Highway and non-highway accidents including moving objects or collision with another non-highway vehicle also were major events that resulted in fatalities.

Costs

The "cheapest" nature of injury is lacerations at an average cost of \$5,800 per injury (medical plus compensation costs). The same injuries averaged 80 days of lost time. The most expensive injuries are sprains/strains, costing \$20,000 and taking 200 lost workdays to overcome. Remember from Figure 4 that the most common type of injury is changing from cuts to sprains/strains and fractures? **Thus, the most expensive injuries are also becoming the most common type.**

The worst part of the body to have affected is the neck, costing \$38,500 and taking 279 lost work days to recover. Lower extremities, the most common part of the body to be injured, average \$10,800 and take 141 work days.

As to the source of injury, bodily motion (lifting, jumping) is the most expensive type, costing \$28,000 and taking 240 work days to recover. This reinforces the notion that sprains/strains are the most expensive nature of injuries. Hand tools, including chain saws, are involved in relatively cheap injuries, averaging \$6,500 but still taking 73 working days to recover. Interestingly, injuries involving working surfaces (falling down) are among the most costly, averaging \$24,300 and taking 200 working days. Although slips and falls involve only 13% of the injuries, they are significant because they are such simple accidents and yet so serious.

There is always some question as to how much money is going into medical costs and how much is going into workers' compensation. There have been several cases with almost no associated medical expense, yet compensation costs run as high as about \$18,000. A criminal investigator would likely want to look closely at these cases to see if fraudulent claims were made. While the exposure and reduction of fraudulent claims is important in reducing costs to both loggers and insurance companies, it is only a small part of the picture. **Reducing accident rates and severity will reduce pain, suffering, employee turnover and insurance costs, while improving worker morale.**

APPLICATION

Workers' compensation claims in the logging industry increased from 1985 to 1987 and then fell through 1998. The level of employment fell in 1986 and 1987 at the time that the logging industry faced its greatest number of worker's compensation claims. As a result, the incidence rate (number of accidents per 100 employees) for the logging increased dramatically from 1985 (14) to 1986 (20). It then dropped from 1987 with a rate of 19 to 17 in 1988, 15 in 1989, 14 in 1990, 8 in 1991-5 and 6 or less in 1996-8. This dramatic drop in the incidence rate for workers' compensation claims could be

produced by many factors. Logging operations managers realize the adverse impact of increased costs and may have taken actions to encourage safe work practices. Further research needs to be conducted to determine if incidence rate reduction is related to the introduction of mechanical tree cutting operations in Louisiana in 1986 and 1987, and what factors influence reduction. Changes in work operations through mechanization could affect the frequency of injuries. This would result in less hands-on cutting and handling of timber. Classical safety theory implies as mechanization increases, then the frequency of injuries may decrease, but severity may increase. However, mechanized logging operators are generally higher paid than unmechanized operators, thus indemnity payments may be inflated due to mechanization.

The Louisiana Forestry Association began a concerted effort in Louisiana to train loggers in worker safety principles and safety regulations in 1993. This effort has been continued through the Sustainable Forestry Initiative by the Louisiana Logging Council. The workshops produced by this program could account, in part, for the improvement in the number of logging accidents since 1993.

Most accidents appear to happen to inexperienced workers (57% of claimants had less than one year of experience with their employer). The most common cause of fatalities is falling trees. Strict policies must be adhered to concerning lodged trees and limbs. The second most common cause of fatality involves both highway and non-highway vehicle collisions and accounted for twenty percent of the claims. Truck drivers must be taught that they are not immune from accidents. As the use of the chain saw diminishes, the shift toward other types of accidents should be reflected in the accident prevention program. Instead of lacerations, strains & sprains and fractures have become the most common types of accident. With back injuries accounting for fifteen percent of all injuries, prevention must be taught. A significant number of accidents are falls.

New employees must be indoctrinated with a distinct safety program. While many job skills can be learned on the job, safety must not be one of them. The consequences are too grave. A separate three-tiered safety program for inexperienced workers is suggested: (1) a formal safety indoctrination on the first day of the job consisting of films, literature to read at home, a review of selected accidents and required safety equipment; (2) an overall safety program for all workers which may consist of monthly meetings, formal accident investigations with reports, safety inspections, posters, rewards for safe practices, etc.; and (3) a more frequent (daily or weekly) intense safety sub-program. Although such a program may seem costly to the company, a major accident is far more costly.

On the job injuries can be prevented. With careful attention to the work environment, the adverse affects of employee injuries can be avoided or minimized.

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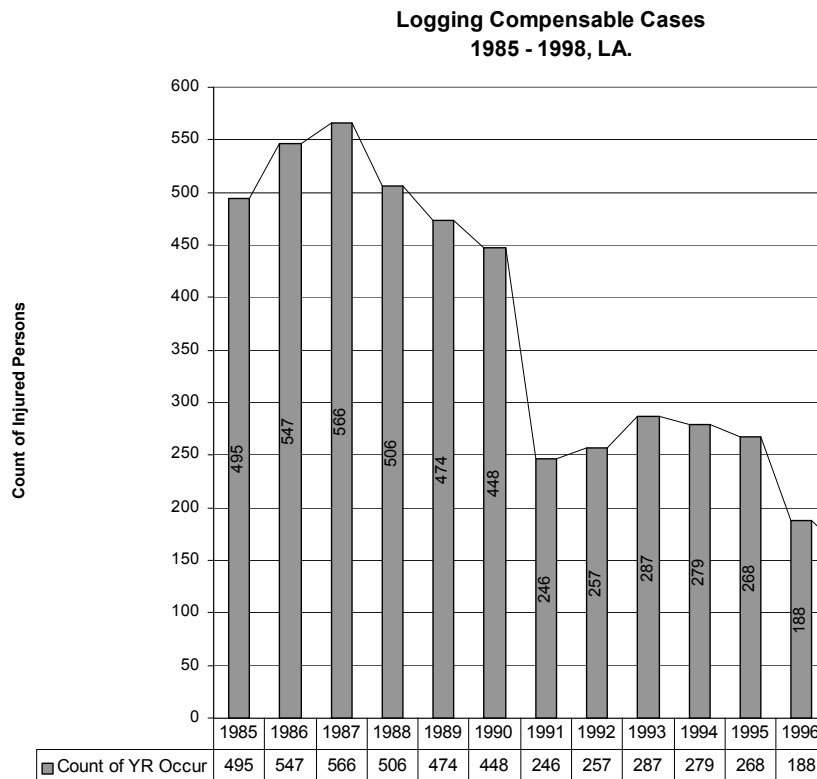
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1: Number of workers' compensation cases in Louisiana in logging (SIC 2411). The last 3 years can be expected to increase as late reports are received - possibly 15% more in the last year.

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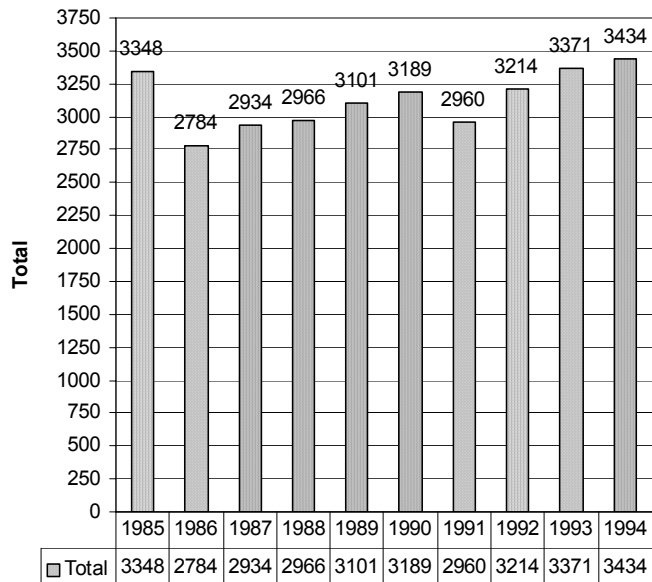
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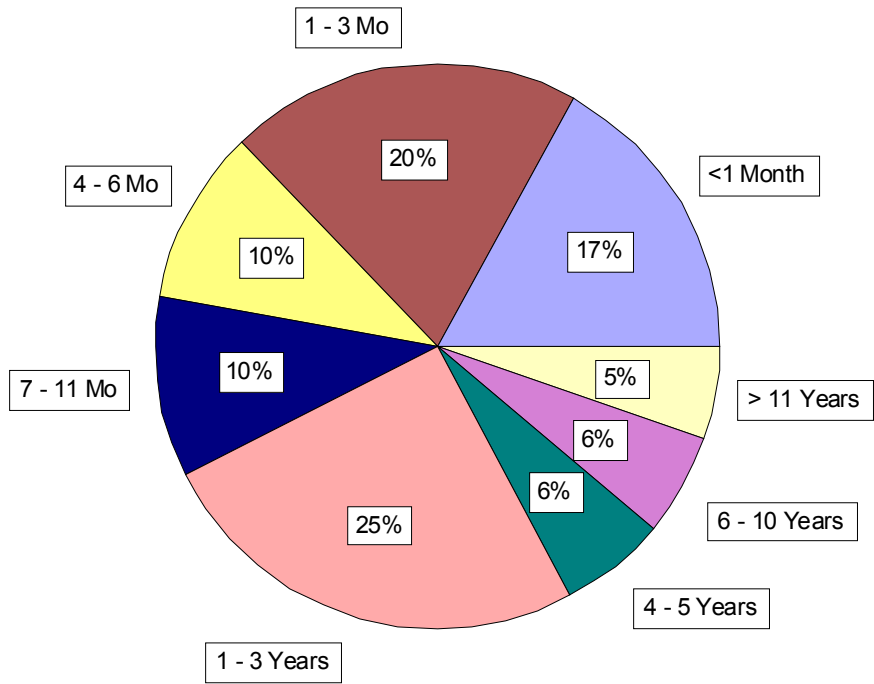
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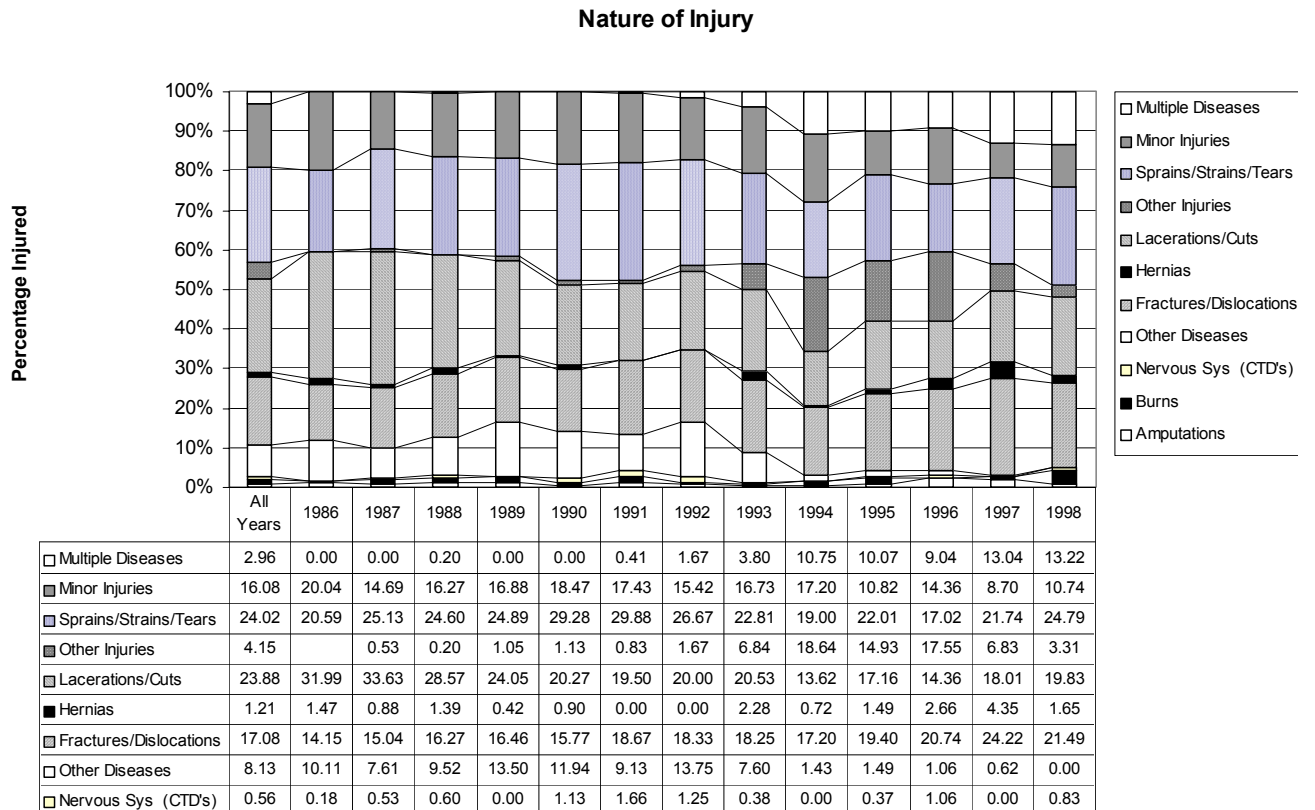
**Annual Average Logging Employ
1985 - 1998**



2: Average level of employment in Louisiana's logging industry (SIC 2411). Source: Louisiana Department of Labor.

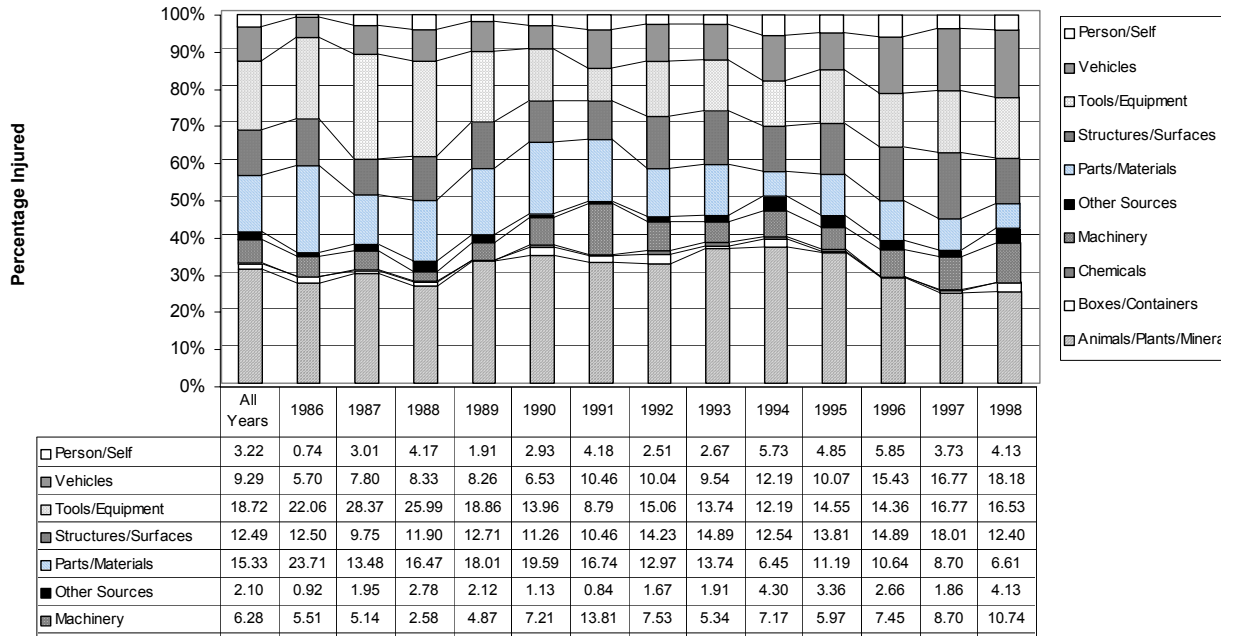


3: Duration of employment (seniority of claimant). Based on 3366 cases in 1985-1990.



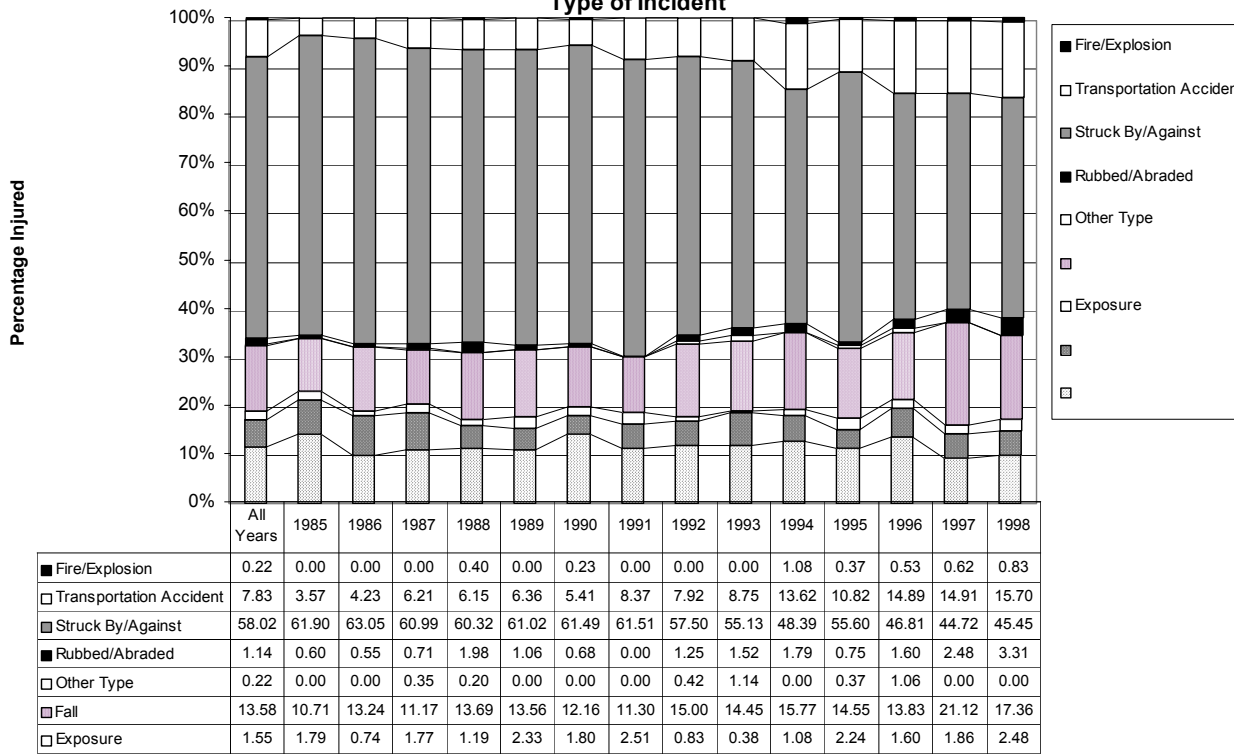
4: Nature of injury. Cuts were once the most common injuries. Now fractures and strains/sprains/tears are the most common injuries.

Source of Incident



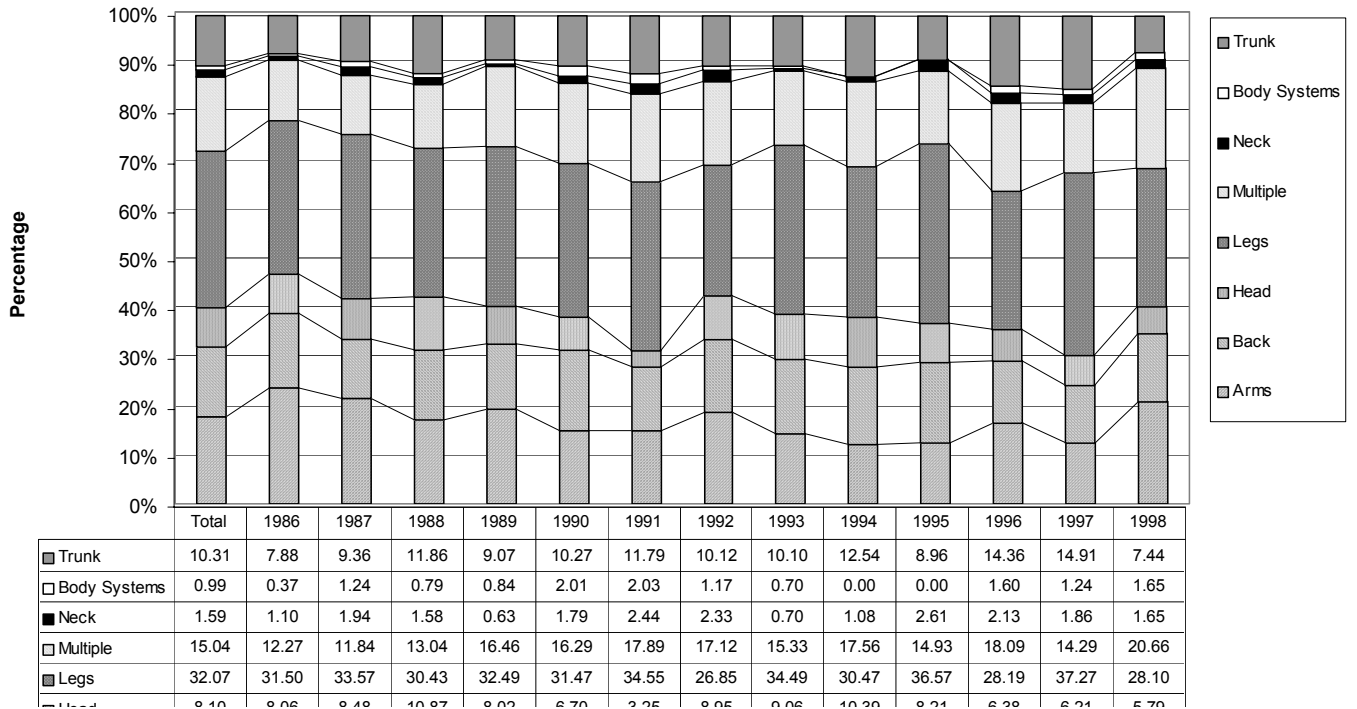
5: Source of injury. The category “hand tools” includes chainsaws.

Type of Incident



6: Type of accident or exposure.

Part of Body



7: Part of body affected.

Logging Compensable Cases By Age 1986 - 1998, LA.

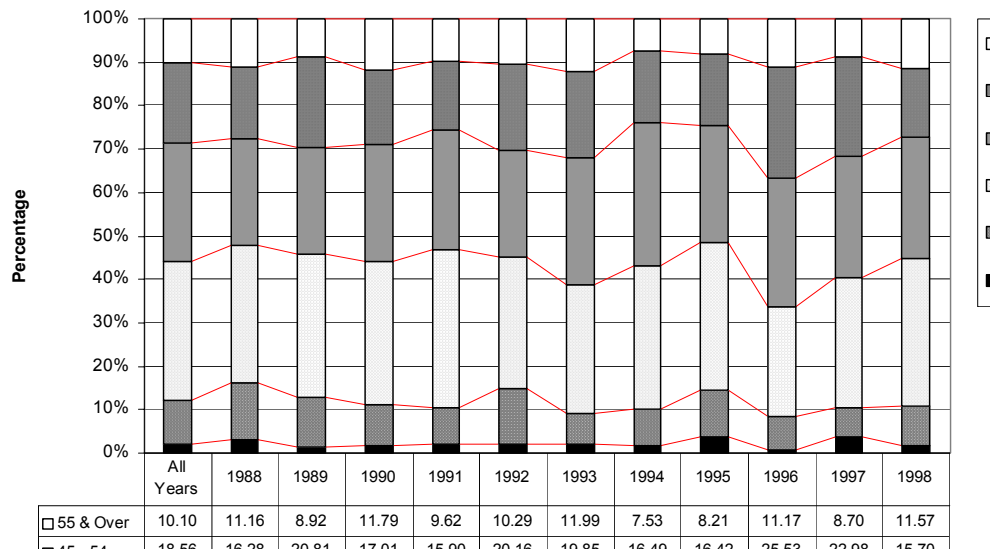


Figure 7a: Age of claimant.

MAIN POINTS

- * WORKERS WITH LOW SENIORITY GET HURT THE MOST.
- * IT IS VERY IMPORTANT TO TRAIN NEW WORKERS.
- * SPRAINS/STRAINS AND FRACTURES ARE BECOMING THE MOST COMMON TYPE OF ACCIDENTS.
- * SPRAINS/STRAINS AND FRACTURES ARE ALSO THE MOST EXPENSIVE ACCIDENTS.
- * SPRAINS/STRAINS AND FRACTURES TAKE THE LONGEST RECOVERY TIME.
- * TRUCK DRIVERS GET HURT A LOT, TOO.
- * THE NUMBER OF SERIOUS ACCIDENTS IS DECREASING, BUT THE INJURIES ARE GETTING MORE SERIOUS.