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### INJURY RATES DROPPING ON MECHANIZED OPERATIONS IN SOUTH

Surveys/Studies: safety

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**INTRODUCTION:** Researchers at Virginia Tech previously reported that injury rates (TCIR) for feller-buncher/grapple skidder operations decreased from 1996 to 1998 (See FRA Technical Release 00-R-2). The TCIR (Total Case Incident Rate) is the U.S. Labor Department standard for reporting the annual frequency of work-related injuries. It represents the number of injuries per 100 workers per year.

Cooperating Worker's Compensation Insurance providers provide data for the Virginia Tech project. To determine if a downward trend in injuries is continuing, Virginia Tech researchers recently collected the necessary data to establish the 1999 TCIR and then solicited assessments from industry logging safety professionals as to the probable causes of the apparent continuing decline in logging injuries on mechanized operations in the South.

**FINDINGS:** The 1996, 1998 and 1999 TCIRs are:

Year	TCIR	sample size (n)
1996	10.0	200
1998	7.2	164
1999	5.7	319

The TCIRs were established from the *population* of mechanized (feller-buncher/grapple skidder) loggers insured by the cooperating WCI firms, including operations across the South from Texas to Virginia. Study data are *blended* to insure confidentiality. We use a random number process to select a representative, statistically sound *sample* of operations for the analysis. For each sample operation selected, we determine (1) the number of injuries (claims) submitted for the year in question, and (2) the number of workers employed on the operation that year. With this information, we calculate the TCIR using the following equation:

$$\text{TCIR} = \frac{\text{Total annual \# of injuries incurred by sample firms} \times 200,000}{\text{Total annual \# of hours worked by sample firms' employees}}$$

**DISCUSSION:** Injury rates have declined steadily since 1996 on mechanized logging operations in the South, falling 43% over four years. The 1999 mechanized logging rate of 5.7 compares favorably with the U.S. Labor Department's 1999 "all industry average" TCIR of 5.9. [Note: Labor Department statistics include only "OSHA reportable" injuries, whereas the Virginia Tech study includes *all* injuries. See FRA TR 00-R-2.] Several logging and forest industry professionals were asked to provide their informed opinion on the probable causes driving this decline in logging accidents on mechanized operations. Their opinions are summarized below:

- Improved mechanical delimiting devices, bucksaws, and sawheads have reduced an already limited exposure to manual chain saw felling and delimiting on most mechanized operations. Many operations no longer have a chain saw on the job.



- A growing number of contractors have become aware of the competitive advantage “top tier” loggers have gained through increased safety awareness and commitment and are adopting a similar safety attitude. They fully understand the direct relationship between a good safety record and lower Worker’s Comp insurance rates.
- An increased percentage of loggers are now insured through the competitive market (rather than “assigned risk” pool) where WCI providers routinely require, audit, and enforce strict safety standards, including consistent use of personal protective equipment.
- Due primarily to SFI-related logger training programs, there has been a dramatic increase in the number of loggers participating periodically in formal safety training programs. Also, many companies now require suppliers and contractors to comply with OSHA and company safety rules as a condition of doing business.
- Well designed safety training programs and materials are widely and readily available to loggers through FRA, Logger’s Associations, State Forestry Associations, Cooperative Extension, OSHA, and others, *and are being used.*
- Logging equipment manufacturers are designing and building equipment that is safer and more comfortable for the operator. The growing number of temperature controlled cabs keeps operators in the machine and off the ground more.
- Loggers are reminded frequently that workplace safety is the law – periodic “horror” stories about unannounced OSHA inspections and resulting fines due to non-compliance with required federal safety standards provide an added incentive for many loggers to practice safety.
- A growing number of loggers have implemented safety incentive reward programs for their employees.
- Economic conditions have forced many of the poorer performers (who were experiencing many of the injuries) out of the logging industry in recent years.

All of the above factors have contributed to a positive core shift in attitude about safety, as well as overall logging professionalism throughout the logging industry in recent years. The long-term social and economic benefits to the logging and forest industry from this unprecedented decline in mechanized logging injuries should be substantial.

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