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INJURY RATES FOR FELLER-BUNCHER/ GRAPPLE SKIDDER OPERATIONS

Survey/Studies: safety

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INTRODUCTION: As part of a 1997 study examining injuries on feller-buncher/grapple skidder operations in the South (FRA Technical Release 99-R-2), Virginia Tech Industrial Forestry Operations researchers established a 1996 Total Case Incident Rate (TCIR) for the group. The TCIR is the established and recognized measure of work-related injuries for an industry or industry subgroup. It represents the average number of injuries incurred by 100 workers over the course of a year (# of injuries per 100 man-years). The TCIR is calculated by the following formula:

$$\text{TCIR} = \frac{200,000 \times \text{annual \# of injuries}}{\text{annual number of hours worked}}$$

As a follow-up to that study, and to determine if injury rates have changed, the data sources (three cooperating Workers' Compensation Insurance [WCI] providers) were revisited in 1999 and new sample data recorded to establish the 1998 TCIR for the logging industry subgroup of feller-buncher/grapple skidder operations in the South. Additionally, separate TCIRs were calculated for "fully" mechanized operations (that incorporated mechanical delimiting) and "partially" mechanized operations (that employed manual chain saw delimiting). The 1997 study found that injury types and causes were significantly different for fully versus partially mechanized operations but did not compare the injury rate (TCIR) for the two categories.

FINDINGS: The 1996 and 1998 TCIRs for feller-buncher/grapple skidder operations in the South are shown below:

1996 TCIR [n=200] 10.0

1998 TCIR [n=164] 7.2

1998 TCIRs for fully and partially mechanized operations were not significantly different (7.12 vs. 7.54), indicating that accidents occurred on these jobs at essentially the same rate. As reported earlier in Technical Release 99-R-2 "Injuries on Feller-Buncher / Grapple Skidder Operations," however, the major cause of injury was significantly different for the two groups. Manual chain saw delimiting was the most frequent task performed when an injury occurred on partially mechanized operations, while equipment maintenance was the most frequent cause on fully mechanized jobs.

DISCUSSION: 1998 injury rates for this important logging industry subgroup were nearly 30% below 1996 rates. We are hopeful that this finding demonstrates a downward trend in injuries and not simply "one good year" for logging safety. Virginia Tech researchers intend to continue long-term monitoring of the injury rate for this important subgroup of the logging industry. Consistent annual TCIR measurement will capture any trend which emerges.

Pinpointing the primary cause or causes of this impressive two-year reduction in logging accidents and injuries is difficult. However, a strong argument can be made that the significant increase in logging safety training that occurred across the South from 1995 through 1998 as a part of the Sustainable Forestry InitiativeSM (SFISM) played a major role.



The Bureau of Labor Statistics (BLS) annually publishes a TCIR for the U.S. logging industry as a whole (SIC code 2410). BLS's published logging injury rates for 1996 and 1997 were 8.7 and 9.8, respectively (at the time of this writing the 1998 BLS rate was not available). These rates, however, cannot be compared directly with the TCIRs established in the Tech study, since in establishing its rate, the BLS uses only "OSHA Reportable Injuries," which are those injuries that either (1) result in a fatality, (2) result in lost time from the job, or (3) result in medical costs exceeding \$1,000. The Virginia Tech TCIR calculation included all injuries reported to the co-operating WCI providers, many of which were relatively minor and would not meet the criteria for "OSHA Reportable."

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