Appendix D. Selected Occupations with High Fatality Rates

This appendix presents a table that shows selected occupations with high fatality rates per 100,000 employed. Fatality rates depict the risk of incurring a fatal work injury for workers in a given employment group expressed as the proportion of fatalities per standard measure (usually per 100,000 workers). This allows risk to be compared among different employment groups. To produce a fatality rate, the number of fatal work injuries in a given occupation is divided by the number of employed persons in that occupation, and multiplied by 100,000. While the table does present occupations with the highest fatality rates, it should be noted that other factors and considerations should be explored before labeling these occupations as the most dangerous.

An alternate method of calculating occupational fatality rates is to divide the number of fatalities in a given period by the number of hours worked in the same period. Using hours in the denominator is a preferable method because, conceptually, it will represent the amount of time during which an employee is exposed to a hazardous working environment. However, because there are limitations in the availability of reliable hours data, employment typically is used as the denominator. The number or rate of nonfatal injuries is another factor that should be taken into consideration when trying to determine the most dangerous jobs. However, at this time, incidence rates for nonfatal injuries by occupation are not calculated. Additionally, it might be difficult to combine the fatal and nonfatal data because of the different methodologies used in collecting the data.

Another consideration to take into account when analyzing fatality rates is that they cannot be used to determine the "potential" occurrence of a workplace fatality. To illustrate, in a given year the annual average actual employment for a given highly specialized occupation may be 100. If that occupation group reports 1 fatality, the rate will be calculated as 1,000 fatalities per 100,000 employed (which is an extremely high rate when compared to the 2004 average fatality rate of 4.1). The next year, if no fatalities are reported in that occupation, then the rate will be zero and it will appear to be a very safe occupation. A hypothetical example of such a scenario is the case of circus animal trainers. The occupation of circus animal trainer may be perceived as dangerous because of the potential for being fatally attacked by an animal. However, if no fatalities occurred in a given year, it could be stated that, based on the fatality rate of zero, the occupation of circus animal trainer is safer than the occupation of schoolteacher, which on average has a rate of about 1 fatality per 100,000 employed.

Employment-based fatality rates can be used to reach broad conclusions about which occupations are relatively risky. While occupations can easily be ranked using this method, it should be noted that the rankings might differ from those derived using the other methods of risk assessment.