

## Appendix D-2. Note on the 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 number 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. For instance, the number or rate of nonfatal injuries is another factor that should be taken into consideration when trying to determine the most dangerous jobs.

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. Previously, there have been limitations in the availability of reliable hours data, so the Bureau of Labor Statistics (BLS) has used employment as the denominator. BLS is currently researching the calculation of hours worked and may replace employment with hours worked in subsequent releases of fatality rates.

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 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 2005 average fatality rate of 4.0). 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 other methods of risk assessment, such as hours-based rates.