



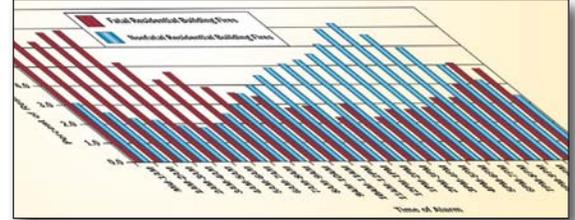
Coffee Break Training - Fire Prevention and Public Education

Basic Fire Risk Analysis

No. FM-2011-7 August 18, 2011

Learning Objective: The student will be able to identify how to conduct basic fire risk analysis.

Risk analysis is determining the probability of a hazard occurring and the potential severity of such an occurrence. Risk probability is expressed in a number such as 1 fire per every 1,000 structures or 1 death per every 10,000 population, etc. The fire problem can be identified only through the use of a good data reporting system that analyzes the community's problems. To determine risk for fires, casualties, and losses in the community it is necessary to ask the questions who, what, when, where, and why? Data collected from previous years are compared with current data to determine trends. Is the risk increasing or decreasing? When these data have been collected, risk analysis can begin.



Only through analysis of good data can a fire problem be identified.

To understand the data, it is necessary to group data elements together. There are many methods of analysis to consider and it is not possible to consider them all here. Take an analytical approach by deciding how to break out the data so they are meaningful to your community. Often, when a few tables have been displayed and prepared immediate questions will arise as to why certain numbers are large or small. These initial findings will themselves suggest further questions.

Much of the analysis for fire data consists simply of arranging the right data in tables and then looking for the large numbers; these findings indicate the major parts of the problem. The most important types of analysis require a simple approach and common sense. A key factor in analysis consists of finding large numbers on a table or chart and asking the cause of the large numbers. This approach may require the use of additional tables to break down the analysis further. Three types of statistics can be used in tables. One basic type is the number or count of fires (incidents, casualties, or the amount of dollar loss). Another type is the rate of these events per capita (per building unit, or per some other unit). The third type is the percentage of the problem in each subcategory.

The absolute number is the raw count showing the size of the problem. Absolute numbers do not indicate how severe the problem is relative to the population at risk; rates depict severity. Per capita rates are necessary for comparing one part of a community to another or one community to another in a fair way. Another method is to graph the change in the number of fires or losses against the change in population. Rate of fires can be computed per million dollars of assessed value. Percentage statistics can be used to express the relative proportion of the problem based on different causes. Another use of percentage statistics is to determine the relative proportion of the problem affecting people of different ethnic backgrounds, ages, income, and educational levels. Analyzing and evaluating these types of data will enable you to provide information on where the fire problems are and where changes or improvements can be made.

Source: U.S. Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA). *Code Management: A Systems Approach*, October 2006.

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