

The below FEMA/USFA report on firefighter fatalities in the US doesn't separate out structural and wildland firefighting and can be presumed to be predominately structural since that is their organizational emphasis. However, wildland ground fatalities (as opposed to those occurring in aircraft) that are attributable to medical causes has previously been shown to have similar basic fatalities causes. Between 1949 and 1997 there were 84 wildland fire ground fatalities attributable to medial causes (updated from PMS 822/NFES 1849, March 1997 containing information through 1996) and these were principally heart attacks (72) followed by heat stroke (3) and stroke (3). During this same period these wildland fire medical related deaths were almost exclusively within the ranks of Rural and Volunteer FD's. Prior to 1983 most of those deaths were on fires in the western US, primarily California. After 1983 the distribution shifted dramatically to the central and eastern US. Medical related wildland fire fatalities during the period of study were the third highest category, following entrapments (388, usually incidents involving large groups with data starting in 1910) and aviation (249, usually 1 to 3 fatalities at a time with data starting in 1955). Wildland fire fatalities attributable to motor vehicles were the fourth highest category (77). Deaths from inflicted causes, which could also be categorized as trauma as in the below FEMA/USFA report, in wildland fire fighting in the US are relatively rare (23, first recorded in 1946) usually resulting from falling trees.

The entire report containing the above information is in the conference proceedings of the 1997 International Association of Wildland Fire's "Wildland Fire Safety Summit" held in Rossland, British Columbia, Canada; pages 15-33; and was titled "Wildland Fire/Aircraft Firefighter Fatalities in the United States compared with Ground Based Firefighter Fatalities." The emphasis of the report was on reporting US aviation related wildland fire fatalities which previously had remained mostly undocumented. - Chuck Bushey

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## HEART ATTACK LEADING CAUSE OF DEATH FOR FIREFIGHTERS

WASHINGTON, D.C. - The United States Fire Administration (USFA) released today a comprehensive study which examines the causes of deaths for "on-duty" firefighters. The USFA Firefighter Fatality Retrospective

Study: 1990-2000 is an in-depth analysis as to the causes for more than 1,000 on-duty deaths which have occurred in the United States during the last decade of the 20th century. The goal of the study is to identify trends in firefighter mortality, and use the information to help reduce firefighter deaths by 25% in 5 (five) years.

The key findings of the study include:

- The leading cause of death for firefighters is heart attack (44 percent). Death from trauma, including internal and head injuries, is the second leading cause of death (27 percent). Asphyxia and burns account for 20 percent of firefighter fatalities.

- Each year in the United States, approximately 100 firefighters are killed while on duty and tens of thousands are injured. Although the number of firefighter fatalities has steadily decreased over the past 20 years, the incidence of firefighter fatalities per 100,000 incidents has actually risen over the last 5 years, with 1999 having the highest rate of firefighter fatalities per 100,000 incidents since 1978.

- Firefighters under the age of 35 are more likely to be killed by traumatic injuries than they are to die from medical causes (e.g., heart attack, stroke). After age 35, the proportion of deaths due to traumatic injuries decreases, and the proportion of deaths due to medical causes rises steadily.

- Since 1984, motor vehicle collisions (MVCs) have accounted for between 20 and 25 percent of all firefighter fatalities, annually. One quarter of the firefighters who died in MVCs were killed in private/personally owned vehicles (POVs). Following POVs, the apparatus most often involved in fatal collisions were water tankers, engines/pumpers, and airplanes. More firefighters are killed in tanker collisions than in engines and ladders combined.

- About 27 percent of fatalities killed in MVCs were ejected from the vehicle at the time of the collision. Only 21 percent of firefighters were reportedly wearing their seatbelts prior to the collision.

- Approximately 60 percent of all firefighter fatalities were individuals over the age of 40, and one-third were over the age of 50. Nationwide, firefighters over the age of 40 make up 46 percent of the fire service, with those over 50 accounting for only 16 percent of firefighters. About 40 percent of volunteer firefighters are over the age of 50, compared to 25 percent of career firefighters.

- The majority of firefighter fatalities (57 percent) were members of local or municipal volunteer fire agencies (including combination departments, which are comprised of both career and volunteer personnel).

Full-time career firefighters account for 33 percent of firefighter fatalities. Numerically more volunteer firefighters are killed than career personnel, yet career personnel lose their lives at a rate disproportionate to their representation in the fire service.

- In many fire departments, EMS calls account for between 50 and 80 percent of their emergency call volume. These EMS incidents result in only 3 percent of firefighter fatalities. Trauma (internal/head) accounts for the deaths of 50 percent of firefighters who were involved in EMS operations at the time of their fatal injury. Another 38 percent involved in EMS operations died from heart attack.

For the past 25 years, the United States Fire Administration (USFA) has tracked the number of firefighter fatalities and conducted an annual analysis. Through the collection of this information on the causes of firefighter deaths, the USFA is able to focus on specific problems and direct national efforts to finding solutions for the reduction of firefighter fatalities in the future. The information in this study is also used to measure the effectiveness of current programs directed toward firefighter health and safety. One of the USFA main program goals is a 25 percent reduction in firefighter fatalities in 5 years and a 50 percent reduction within 10 years.

The complete report may be viewed and downloaded from the USFA web site at:

<http://www.usfa.fema.gov/dhtml/inside-usfa/fa-220.cfm>

The USFA is a part of the Federal Emergency Management Agency (FEMA).