Wildland Firefighter Life Safety Mini-Summit

In the ongoing efforts to prevent firefighter fatalities, the National Fallen Firefighters Foundation has recognized that the wildland component of the fire service has a unique set of concerns. To address these concerns, the Foundation conducted the first in a series of mini-summit meetings in San Diego on February 1, 2005, in conjunction with the Firehouse World Conference. The participants in this meeting directed their efforts toward fine-tuning the application of the 16 Firefighter Life Safety Initiatives to wildland firefighters and their operational environment. While most of the basic principles of the 16 Firefighter Life Safety Initiatives apply to both wildland and structural firefighting, their specific application can involve very different considerations.

Wildland firefighters comprise a very large segment of the overall fire service in the United States. Between 1990 and 2004, more than 120 wildland firefighters died in the line of duty in the United States. There are large variations in the number of wildland firefighter fatalities from one year to another. A large proportion of this variation can be attributed to climatic conditions that have a huge impact on the number of wildland fires that occur each year and the resulting number of firefighters who are involved in fighting them. There have been as many as 35 fatalities in a single year, when an exceptionally high number of major wildland fires occurred. From 2000 to 2003 there were an average of 11 wildland firefighters annually, including many pilots and aircraft crew members. Only four wildland firefighter deaths occurred in 2004, including three pilots and one ground-based firefighter. This significant reduction in fatalities can be attributed to a year which saw relatively few major wildland fires in the mainland portion of the USA, as well as the decision to ground aging air tankers as a safety measure.

In addition to the groups specifically identified as wildland firefighting organizations, many other fire departments are frequently involved in fighting grass, brush and wildland fires. During the same period, from 1990 to 2004, more than 130 other firefighters, from both career and volunteer departments, died while fighting or responding to these types fires fires. Together, these figures represent almost 20 percent of the total line of duty deaths that occurred in the United States.

Summit Description

A group of 36 individuals, all of whom shared a special interest in preventing line-of-duty fatalities among wildland firefighters, participated in the full-day mini-summit. The attendees represented a wide spectrum of organizations, from federal and state wildland fire protection agencies to career and volunteer fire departments and private contractors.

The participants were divided into three discussion groups to examine issues relating to wildland firefighting operations; apparatus and equipment; and health, wellness and fitness for wildland firefighters. Each group identified the key issues, defined programs and strategies that will strengthen the application of the initiatives and then developed specific objectives and timeframes that will guide the Foundation’s efforts. All of the participants were then reassembled to discuss the findings of the individual discussion groups.

The discussions took note of the wide spectrum of agencies that are involved in wildland firefighting and the many different environments in which they operate. These agencies include the federal and state organizations that specialize in protecting vast forests and

grasslands, structural fire departments that protect urban interface zones, and many small community fire departments that routinely fight brush and grass fires in rural areas. Each operating environment presents a different set of tactical challenges and risks to firefighters and many of the approaches that are designed for one set of circumstances are very difficult to apply to a different scenario. Because so many different agencies and sets of circumstances are involved, it is very difficult to identify common factors that would apply to wildland firefighting in general.

A large-scale wildland operation can involve thousands of firefighters for weeks at a time and often involves transporting crews and equipment hundreds or thousands of miles. Many of these fires occur in remote areas where there are very limited resources and a complex logistical operation must be established to support the operation. Wildland firefighters include thousands of highly experienced fulltime and part time personnel, who are at home in this type of environment, as well as many young seasonal firefighters who have had only basic training in fire suppression techniques.

The many different state and federal agencies that protect wildland areas have very different approaches and philosophies that are based on their particular operating environments. The participants noted that fires in different terrain and ecosystems present very different scenarios. Firefighters who are highly experienced fighting fires in one region may encounter very unfamiliar circumstances when they are dispatched to assist on a fire in a different region.

In several states it is very common to mobilize structural firefighters from urban areas to provide protection for structures in interface areas. This type of operation is totally different from structural firefighting and very different from fighting a forest fire in a remote undeveloped area. While forest fires are fought on foot or from aircraft, interface operations generally involve crews operating with fire apparatus, either on or close to roads. In several cases large scale urban interface fires have occurred in areas that normally experience few major fires of this type, usually as a result of unusual drought conditions. These situations can expose local firefighters to a very unfamiliar set of risk factors.

The third major component of wildland firefighters includes tens of thousands of firefighters, mostly volunteers, who protect small communities and rural areas. These firefighters often fight more brush and grass fires than structure fires. In some cases they have to face very rapidly spreading fires and high-risk situations with a minimum of resources.

Operations Group

The operational firefighting discussion noted several serious challenges that must be addressed. The fact that a large number of the individuals who are currently qualified to work on high level incident management teams are expected to retire in the next few years was identified as a major approaching problem. The participants noted that existing systems are not producing enough qualified and experienced individuals to replace all of the talent and experience that will be leaving the system fairly soon. This was identified as a priority issue that will require attention.

Concern was also expressed over different training and qualifications requirements among different agencies that can be confusing and unnecessarily complicated. While

the federal wildland agencies have made great efforts to coordinate their programs and placed a tremendous emphasis on safety in the past several years, the same factors do not apply across the entire spectrum of state wildland agencies. Even at the federal level there is room for improvement in coordination and standardization.

In the area of cultural change, the participants discussed a range of issues. Part of the concern involve the culture of firefighters themselves and convincing them of the need to be safety conscious and vigilant at all times. This is true of wildland firefighters, just as it applies to structural firefighters. We must embrace a culture of safety and realistic risk management, with accountability at every level, from agency management to supervisors to individual firefighters.

A different dimension of cultural change was identified as the need to change unrealistic public and news media expectations. As the level of resources committed to fighting wildland fires has increased, so have public expectations about the ability of fire fighters to control fires and protect property. Homeowners who choose to build houses in interface areas, without considering the fire risk factors, expect firefighters to protect them when a fire occurs. When a large fire is spreading across a forested area, the public expects it to be stopped. The news media often portray the situation as a simple battle of firefighters against flames as opposed to the forces of nature taking their natural course. The participants noted that these unrealistic expectations sometimes result in resources being committed to situations where the level of risk is not justifiable.

The final recommendations produced by this group included the following specific objectives:

Within 2 years:

- Develop a single national model for fire incident personnel accountability.
  Agencies to be involved: NFPA, FIRESCOPE, NWCG

- Capture and incorporate technology from other agencies to improve wildland operations.
  Agencies to be involved: DOD, DHS, FCC, Private sector technology sources

- Develop a series of strategies to recruit, train and retain qualified individuals to serve on incident management teams.
  Agencies to be involved: NWCG, DHS/FEMA/USFA/NFA, IAFC, IAFF, NVFC

Within 2 - 5 years:

- Identify agencies to conduct ongoing causal factor analysis of wildland firefighter fatalities and injures. Examine the issues from a human behavioral and psychological aspect. Develop strategies to match risk management principles with the causal factors identified.
  Agencies to be involved: NIOSH, Universities, MTDC, USMC, NWCG

Within 10 years:

- Develop a consistent and dependable funding source for fire service training and secure an independent agency to manage it.
  Agencies to be involved: DHS, NWCG, CFSC, USFA, Insurance Industry

Health-Wellness-Fitness Group

The group that was assigned to discuss issues relating to firefighter health, wellness and fitness identified a list of issues very similar to those that apply to all firefighters. Wildland firefighters have to be in excellent physical condition and most wildland agencies require annual medical examinations and fitness assessments, however they do not have the type of ongoing medical surveillance, physical fitness programs and wellness programs that have been developed for many structural fire fighters. As a general statement, wildland firefighters are required to establish that they have the strength and stamina to do the job, but once they have met the qualification standard they are on their own.

The participants in this discussion developed a series of program recommendations that involve the specific organizations, which are involved in wildland firefighting:

Within 2 years:

- Develop funding mechanisms for implementation and maintenance of Health-Wellness-Fitness programs.
  Agencies to be involved: Workers compensation carriers, ICMA, DHS, NVFC, IAFF, IAFC

Within 2 - 5 years:

- Implement ongoing wellness-fitness programs (i.e. IAFF-IAFC model)
  Agencies to be involved: NFPA, IAFF, IAFC, NVFC, ICMA, NASF, MTDC, BLM, USFS, NPS, BIA, FWS, DOD, DHS, Bureau of Reclamation.

- Mandate pre-hire standards including medical exams, fitness tests, prohibition of tobacco use on and off duty, and drug screening.
  Agencies to be involved: NFPA, IAFF, IAFC, NVFC, ICMA, NASF, MTDC, BLM, USFS, NPS, BIA, FWS, DOD, DHS, Bureau of Reclamation.

Within 10 years:

- Identify the causes and effects of firefighter occupational diseases (e.g. cancer, respiratory, circulatory)
  Agencies to be involved: NIOSH, CDC, DOD, ACS, AMA, American Lung Association, MSHA, MTDC

- Develop and deliver programs on the prevention of occupational diseases.
  Agencies to be involved: NFPA, IAFF, IAFC, NVFC, ICMA, NASF, MTDC, BLM, USFS, NPS, BIA, FWS, DOD, DHS, NIOSH, CDC, DOD, ACS, AMA, American Lung Association, MSHA, MTDC, NFA

Vehicles and Equipment

The vehicles and equipment discussion group placed an emphasis on the need for built-in safety in wherever it can be applied. They also underlined the importance of making time to conscientiously emphasize safety on a daily basis in order to change the culture of the fire service. The practice of taking six minutes at the start of every work period to discuss safety measures was described as a very effective approach to deliver this message. Daily checks must be performed thoroughly and conscientiously to ensure that all equipment is in proper condition.

We must work toward changing the cultural mindset that we will simply do the best we can with whatever tools and equipment are available to do the job. Instead, we should make every effort to have the appropriate tools, equipment and resources to operate safely and effectively. The most visible example of this approach is the current emphasis on thoroughly evaluating the suitability and condition of aircraft used for fire attack operations; the same approach should apply to everything that is used and depended upon by wildland firefighters.

This group also underlined the need to thoroughly investigate all accidents, injuries and near-miss situations, as well as fatal incidents, and to look closely at issues relating to equipment design and maintenance.

The need for ongoing research to identify and adapt technologies for wildland firefighting use was also discussed. Improved personnel accountability systems, capable of continually tracking the location of all individual firefighters at a wildland incident and relaying the information back to a command post, were listed as a high priority. This technology exists for military applications and needs to be adapted for firefighting purposes. The discussion noted that several major advances in technology have become available in recent history, however their availability is often limited by cost considerations.

The group encouraged the development and funding of more grant programs to help local jurisdictions obtain better equipment. They supported the principle of establishing a connection between safety standards and grant eligibility, so that grant funds could only be obtained for non-safety related purposes if the organization meets all of the applicable safety standards.

The group also discussed the need for all agencies to adopt uniform resource and equipment standards. These standards should be developed through the consensus standards system and applied nationally.

There was additional discussion on the need for improved safety standards for crew transport vehicles and for policies relating to personnel movement. In many cases crews are transported over long distances in vehicles that would not meet accepted safety standards. Fatigued crewmembers are often assigned to drive these vehicles after days or weeks of firefighting activities.

The vehicles and equipment group produced the following recommendations:

Within 2 years:

1. Develop and adopt ***national response standards*** for various types of wildland incidents:

- A standardized national typing of apparatus with minimum levels of specific equipment for all apparatus; including aviation assets.
- All involved standards agencies should work together to develop uniform wildland equipment standards.
- ARFF standards for Heli-bases - at least equal to the Coast Guard Heli-Base Standards. (The requirements should increase in proportion to the fuel quantity or number of Type 1 Helicopters.)
- A minimum number of equipment and aviation assets should be dispatched to all incidents based on Type 1; Type 2; Type 3 incidents.
- The federal dispatch system should to be centralized. Dispatching at the local forest level is problematic. A unified system should account for all available assets, nationwide.
- Standards should address crew transport vehicles and policies.

Agencies to be involved: NFPA, NIMS, NWCG, NWSA, DOD, DHS, FEMA, USFA

2. ***Federal grant programs for equipment should focus on safety items***. If a department is receiving federal excess or surplus equipment, there should be a contract that requires a minimum level of safety.
   Agencies to be involved: DHS, FEMA, USFA, DOD

3. ***All LODD, injury and near-miss investigations should include an analysis of equipment use, design, and application.***
   Agencies to be involved: DHS, FEMA, USFA, OSHA

4. **New technology should focus on built-in safety:**

- Grants should be available to manufacturers to develop better safety equipment.
- All safety research should be focused directly on the causes of LODDs.

Agencies to be involved: DHS, FEMA, USFA, NFPA, USFA, OSHA, FAMA

5. ***Technology transfer research should identify valuable equipment and technologies that are available outside the fire industry:***

- Personnel accountability technology is currently available (i.e. DOD) that is not currently being used in the fire service.
- Research grants should be made available to develop safety features and equipment specific for the fire service.

Agencies to be involved: DHS, USFA, DOD, San Dimas, Missoula, NASA, U.L.

The National Fallen Firefighters Foundation will incorporate the comments and recommendations of the mini-summit participants into the overall planning and implementation of the 16 Firefighter Life Safety Initiatives. The participation of the attendees and facilitators is greatly appreciated. Special thanks go to Cygnus-Firehouse for hosting this event.

The 16 Firefighter Life Safety Initiatives were developed at the first National Summit on Firefighter Life Safety, which was held in Tampa, Florida in March, 2004. During 2005 the National Fallen Firefighters Foundation is planning to conduct six mini-summits to closely examine the application of the initiatives to specific segments of the fire service. Each session will focus on a distinct component of the fire service or a special set of activities.