

**NATIONAL FALLEN FIREFIGHTERS FOUNDATION  
FIREFIGHTER LIFE SAFETY INITIATIVES PROJECT**

**MINI-SUMMIT ON STRUCTURAL FIREFIGHTING**

The mini-summit on Structural Firefighting was conducted in Baltimore, Maryland on July 27, 2005, in conjunction with Firehouse Expo. The purpose of the mini-summit was to obtain input from members of the fire service and related organizations on the most appropriate strategies to implement the 16 Firefighter Life Safety Initiatives. The specific focus of this session was directed toward structural firefighting operations.

The 50 participants were divided into 4 groups to focus on different aspects of the Firefighter Life Safety Initiatives program. Each group was asked to develop specific observations and recommendations that would support successful implementation of the 16 initiatives in the relation to a list of topics.

**Group 1**

- Strategy and tactics
- Incident management
- Risk management

**Group 2**

- Training
- Organizational and behavioral science

**Group 3**

- Apparatus and equipment
- Personal protective equipment
- Firefighting technology

**Group 4**

- Pre-incident planning
- Information management
- Communications

**Group 1**

Fireground operational procedures must be based on local conditions and resources.

The balance between staffing requirements and the scope of operations that can be performed safely and effectively is a critical issue. Fire departments must base their operational procedures and expectations on the realities of staffing, training, experience, apparatus, equipment and other resources. In many cases the risk factors exceed the capabilities of the resources that are available.

The group recommended increased application of NFPA Standards 1710 and 1720 as the foundation of community and fire department risk analysis. These standards provide a starting point to determine whether the essential resources are available to provide a minimum standard level of structural fire suppression service, although further effort is required to establish standards for a range of community risk factors. Educational components must be developed to enhance public awareness of the necessary balance between resources and operational capabilities.

Fire departments must develop the ability to apply appropriate risk management techniques to tactical situations.

The participants recommended that the National Fallen Firefighters Foundation should spearhead the development of training programs to support the implementation of risk-based incident management principles. The system must incorporate the concepts of risk-based decision making as a standard approach to managing fire fighting and other emergency operations.

This effort should incorporate planning, training and consistent application of standard principles to guide emergency operations. Firefighters risk death or serious injury when they attempt to conduct offensive operations in situations that call for defensive strategy. The system should define acceptable strategic and tactical behaviors in structural firefighting, including measurable benchmarks and a national code of conduct.

A system of nationally accepted standards and practices should be developed to increase competency and accountability for decision making on the fire ground.

The participants observed that actual firefighting operations, in too many cases, are conducted with inadequate organization, supervision and self-discipline. The perceived urgency of the situation often results in firefighters disregarding basic principles and procedures and operating in a reckless and unstructured manner. Self-discipline was identified as a key issue in this regard. Firefighters must be trained to always conduct operations in a manner that incorporates standard principles and procedures and does not allow urgency to compromise safety.

The accountability issue was emphasized by calling for the elimination of all exemptions from health and safety regulations that apply to emergency services. The group recommended the adoption of laws, similar to C-45 in Canada, that provide for criminal penalties when death or injury results from an employer's or supervisor's failure to implement and enforce reasonable standards of safety.

Leadership skills were identified as a critical issue in the implementation of a safety culture in the fire service. Fire officers need examples of successful

programs and implementation strategies that have worked in other fire departments.

## **Group 2**

The training and organizational behavior group placed a strong emphasis on the need for continuing development of national training and certification standards. The goal should be a seamless system, in which all firefighters consistently utilize the same basic operating principles and are capable of functioning within a seamless system in times of regional or national emergency.

Every fire service member at every level should be qualified and certified at an appropriate level within the professional qualifications system. Requirements for continuing education and periodic recertification should be incorporated into the professional qualifications system. The development of higher standards for fire officers, in particular, will require effort and coordination with professional educators and institutions.

The mini-summit participants noted that the increasingly diverse mission of the fire service has resulted in a greatly expanded scope of training, with reduced emphasis on the basics of structural firefighting. At the same time, the decreasing frequency of structure fires has resulted in a reduction in the practical experience factor. Structural firefighting continues to present the highest risk of injury and death to firefighters.

In order to increase the emphasis on basic skills, fire departments may have to be more innovative in locating and making the best use of qualified instructors. In many cases these resources can be shared among fire departments with similar needs as opposed to developing individual and independent training programs.

### Cultural leadership must start at the top.

The existing fire service culture has been identified as a barrier to implementing improved safety attitudes and practices. The group participants noted that the culture of the organization is defined at the top and the attitudes and values demonstrated by the Fire Chief, over a period of time, become the attitudes and values of the fire department. The leadership to change the culture of the organization must start at the top. When firefighter safety and health issues are emphasized by the fire chief, they will become important throughout the fire department.

Fire chiefs, officers and managers at every level must be trained and educated to develop the desired culture, then must be held accountable for its implementation and enforcement. Municipal government must also accept the responsibility to support and provide the necessary funding to implement safe practices.

Fire officers and instructors must be provided with the tools to implement safe and healthy practices.

An increased emphasis must be placed on training fire service leaders in the content, application and enforcement of existing standards and any new standards that are adopted. In many cases the individuals who are expected to be responsible for the implementation of health and safety policies and procedures have never been provided with the necessary information.

Training must expose firefighters to realistic situations and conditions.

Operational training should involve exercises that are as realistic as possible, including fire conditions, staffing and equipment. The exclusive use of controlled-combustion simulators to provide initial firefighter training can create unrealistic expectations. Structural firefighters must also gain experience fighting actual Class A fuels in realistic conditions, before being qualified to conduct interior firefighting operations.

All training exercises must be conducted with strict adherence to safety policies and practices. Acquired structures can and should be used to provide realistic training, using national safety standards (NFPA 1403) to manage the inherent risk factors.

Aggressive training programs are needed to overcome the lack of experience and ensure that qualified individuals are prepared for leadership positions.

A holistic approach to health and safety must be incorporated into all training programs.

Every aspect of a comprehensive health and safety program must be fully integrated into firefighter training. Training instructors and line officers need to be committed to changing the culture in a safer and positive direction.

Health and wellness issues must be incorporated into training programs, including requirements for medical examinations and fitness evaluations before participating in strenuous activities. Risk management principles and considerations must be applied in every training situation. Safety Officers and accountability systems must be utilized in every exercise, exactly as they would be used at an actual incident. A standard approach to “Rehab” must also be utilized on the training ground

Best practices should be identified, shared and promoted.

Successful programs and strategies, including international examples, should be studied to identify best practices within the fire service. These examples should be widely disseminated to promote their use and refinement.

### **Group 3**

The participants agreed that the existing standards for personal protective clothing and equipment ensembles provide a high level of protection from the hazards of structural firefighting. Continuing advances in respiratory protection equipment are providing firefighters with lighter-weight, longer-duration and more sophisticated systems.

The number of firefighters who lack of modern protective ensembles or have to rely on clothing and equipment that is worn out, poorly maintained or improperly fitted was identified as a major concern. The cost factor is a serious constraint for many fire departments. Fire Act grant funds have enabled many fire departments to upgrade their PPE in the past three years. Additional funding is needed to properly equip a large segment of the fire service that currently lacks adequate protective clothing and equipment.

There was additional concern that many firefighters and fire departments do not follow the recommended maintenance and inspection procedures for their PPE. Fire departments with limited funds often overlook or defer maintenance and inspections and the existing standards are often not enforced. The group recommended that maintenance and usage standards should be formally adopted and enforced. Training is needed to ensure that firefighters are aware of the appropriate procedures and the importance of following them.

Mandatory annual training in the use and limitations of PPE should be provided for all firefighters.

The high level of protection from commonly encountered hazards results in limited sensory feedback to warn the user of dangerous situations. As a result, firefighters tend to unknowingly risk exposure to conditions that are likely to result in death or serious injury. Firefighters must be trained to understand the limitations of their PPE in extreme conditions and to recognize potentially critical situations. Training should also focus on self-rescue and survival procedures.

Environmental monitoring systems are needed to improve the firefighter's situational awareness in order to recognize the dangerous situations.

The issue of situational awareness also extends to systems that will provide improved accountability, location tracking and physiological monitoring of

firefighters operating in hazardous environments. Advances in all of these areas will contribute to improved safety.

**Fireground radio systems must become more functional and reliable.**

The need for more functional and reliable fireground radio communications was identified as a high priority. The group concluded that every individual firefighter should be provided with a portable radio operating on a highly reliable and user-friendly system. The ability to communicate must be maintained inside buildings and structures. The hardware must be durable and affordable.

The discussion noted that expensive and highly complex systems often fail to provide the reliable fireground communications that are essential for firefighter safety. Efforts must be directed toward working with communications systems designers and suppliers to ensure that they understand the needs of firefighters, as well as with political representatives and the general public to ensure that the required funding is available. The fire service must become more technically educated in order to clearly state the operational requirements of communications systems.

**Group 4**

The prevention and planning group identified several issues that require attention.

The design community must be educated to understand the rationale and importance of fire and safety codes, as well the consequences of violating them. In many cases the professionals responsible for designing and constructing buildings do not understand the significance or functionality of mandated fire protection systems and safety features, such as smoke control systems. Their lack of understanding of systems intended to be used by firefighters is a particular problem.

There is a lack of standards for the treatment of existing unsafe buildings. The impact and importance of retroactive requirements is poorly understood.

There is a lack of political will to support the overall fire prevention mission in many communities. Fire codes and safety requirements are often compromised by political considerations. Political leaders often take action to weaken model codes that were developed as minimum standards.

The group determined that the fire service needs to become more proactive in the code development process to ensure that essential safety requirements are adopted. The fire service should also identify influential community leaders and work to create powerful partnerships to support the adoption and enforcement of codes.

The group also noted that fire departments often lack important knowledge of their building inventories, as well as the details of individual properties. More effort should be directed toward identifying hazards and developing pre-incident plans. Considerable effort is needed to gather and manage this type of information; fire departments should take advantage of grant programs to enhance their technological capabilities, including information management systems.

The overall fire prevention effort often suffers from a lack of resources and commitment. Fire departments should direct more effort toward training their personnel to perform code enforcement and public education activities. Best practices should be identified and shared among agencies.

Communication barriers in the community (language, literacy), particularly in the lower socio-economic sectors, present special challenges for public education programs. Cultural differences within a community often present new hazards and problems for fire prevention. Education efforts should be specifically directed toward target audiences, such as employers, employees, building tenants, customers and homeowners.