International Association of Fire Chiefs

Safety, Health, and Survival Section

Fire Fighter Fatality Investigation and Prevention Program Task Force

4 June 2007

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Charge

"The IAFC president has directed the IAFC Safety, Health and Survival Section to develop a set of recommendations regarding changes to the existing program and report back to the board at its April 2007 meeting. This should include defining what the NIOSH Program is now and what the IAFC thinks it should be."

Introduction and Background

Chief William Goldfeder, EFO
Chair, IAFC Safety, Health and Survival Section

Never in our history has the fire service taken such a strong look at the issues of fire fighter safety, health and survival. Specifically, within the past 10 years, members of the fire service - in particular, International Association of Fire Chiefs, International Association of Fire Fighters, National Fire Protection Association, National Fallen Fire fighters Foundation and many others – have worked together aggressively to determine what must be done to reduce the devastating medical issues, traumatic injuries and deaths to fire fighters. As a part of that, the NIOSH Fire Fighter Fatality Investigation and Prevention Program and its staff play a very important and lead role in supporting the fire service in determining the "how, what, where and why" related to our tragic losses.

The NIOSH Fire Fighter Fatality Investigation and Prevention Program (FFFIPP) is a major improvement over what we have had in the past, and the program has led to countless improvements and fire fighter lives being saved. And like any program, especially one that relates to fire fighters - our top priority, we also feel that there is a great opportunity for improvement, especially in mission scope and resources to support the mission. Our goal is to support major improvements as noted above that clearly define what the fire service needs an investigation program to do. We are convinced that fire fighters and fire chiefs support this need for improvement. It should also be noted that the investigation of fire fighter fatalities after the fact should not be a substitute for aggressive prevention and leadership efforts to prevent fatalities from occurring.

The NIOSH-FFFIPP currently has a 14 person staff and about $2 million to run the program. Its role is generally to identify what contributed to our specific deaths and provide recommendations for prevention. It is different from the authority of other federal government agencies that conduct crime investigations (FBI), lead arson investigations (ATF), or identify responsibility for a disaster, such as the National Transportation Safety Board (NTSB), with a multi-million dollar budget.

The FFFIPP has done nearly 400 investigations since its inception in 1998 and it is very hard to argue that it has not made a positive difference in preventing fire fighter fatalities (all fire fighter fatalities – volunteer and career) through revisions to NFPA standards, changes in fire training programs, equipment design, etc.

NIOSH has worked with associations like the IAFF, IAFC, NFPA, NVFC, etc. to develop and make improvements in standards for equipment such as PASS devices when they had evidence that PASS devices might not work as they should under normal fire conditions. In five investigations prior to 2003, where PASS devices were reported not to have been heard, NIOSH documented those findings in reports that were sent out to all fire departments and associations.

NIOSH personnel do have safety and fire service expertise, including fire fighting experience, but they are not required to have fire fighting expertise and that is one issue that we feel requires significant enhancement. The understanding of fire fighting and fire department operations is critical in order to fully disclose the lessons learned after an incident. Additionally, those in leadership roles should also have a fire service background for the same reasons.

Prior to President Jim Harmes and the IAFC Board of Directors forming this task force, there was concern that the fire service was being kept in the dark, out of the loop and uninformed on issues such as potentially failing PASS devices – a concern which has proven to be false.

The NFPA published an excellent notification document on the issue. It was re-sent by the IAFC, the IAFF and posted on most fire service web sites. Perhaps it is time to consider a fully funded "fire service information communications system," not unlike law enforcement's National Criminal Information Center (NCIC), to minimize the possibility of fire chiefs and departments missing critical information. Access to every fire chief and department instantly through a coordinated effort could take the fire service a long way into communication and potentially life saving information.

There has been criticism of the fact that so many NIOSH reports appear to be the same. My response is that our fatalities, while all unique in their own, personal way, are so often the same. I am not talking about the heroic ones, where a fire fighter gave his/her life in a risk that was considered worth it. I am talking about the other ones. The ones where some of us lost our lives in the performance of not so heroic actions. I mean, how many times can some of the reports tell us to wear and use all of our PPE, don't breathe smoke, improve upon training, respect and enforce SOPs, belt in, study building construction, pre-plan, use incident command, study fire behavior, don't blow red lights and stop signs, slow down and take care of ourselves?

So should NIOSH have been more aggressive in "marketing" the problems? Should they "red flag" the issues when they come up so we all know, much, much quicker? I don't know if they can do that. I wish they could…and we need to make the changes so they can. NIOSH needs the funding and the authoritative capability to do that and much more.

But what about the manufacturers? If they knew of problems, should the manufacturers have done urgent recalls? Absolutely….nothing stops them from doing that. Why wouldn't a manufacturer want to do what's best for fire fighters? Forget the legal aspects….but why wouldn't a manufacturer want to do what's best for fire fighters? This is a problem.

Are the NIOSH reports perfect? No. But they are what we have at this point, they are of great value and their value should not be underestimated. What we did not want do is to jump too hard on the "change" bandwagon. That is why this task force was formed: to fact find and provide recommendations to President Harmes and the IAFC Board of Directors. Facts that help maintain confidence in the current NIOSH investigative process which I feel, has worked as much as it is allowed to work.

From working closely with us to the survivors of fallen fire fighters, NIOSH staff members know that the deaths of fire fighters are horribly devastating. From my view, they take their responsibility seriously but due to the lack of required fire service background, expertise and training, may at times not be able to fully understand all aspects of an incident. That is addressed in this report.

The NIOSH Fire Fighter Fatality Investigation and Prevention Program is OUR program and that was the attitude and focus taken by the highly respected members of this task force. We now have an incredible opportunity to greatly improve the current program to best serve us as fire fighters.

My sincere thanks to President Jim Harmes, the IAFC Board of Directors, the IAFC Safety, Health and Survival Section Board and members for their support and encouragement during this process. Additionally, my sincere thanks and appreciation go out to Chief Dave Fulmer (Miami Township, OH) and Chief Colleen Walz (Pittsburgh, PA) for their joint coordination and leadership efforts as well as to all of the task force members for their time and dedication to the welfare of all fire fighters.

In conclusion, the IAFC SHS Section awaits leadership direction from the IAFC BOD to take the next steps in order to work toward the coordinated and successful achievement of these recommendations.

A. Enhance and support the existing National Institute for Occupational Safety and Health – Fire Fighter Fatality Investigation and Prevention Program.

The Fire Fighter Fatality Investigation and Prevention Program (FFFIPP) is a very small program in a very large organization. This program was assigned to NIOSH as a result of fire service requests to Congress to have firefighter line of duty deaths investigated and causes reported in an attempt to decrease deaths and injuries. The fire service has a vested interest in ensuring that the FFFIPP is provided the necessary resources, both in personnel and funding, to accomplish that mission. While the program has been successful in performing investigations of a number of firefighter fatalities, enhancements to the program would improve the value and impact of the program's products.

NIOSH is a research and educational organization. It has limited investigative authority to support the research mission, but it has no enforcement powers and no mandate to conduct "official fact finding" investigations of specific incidents. The current program effort is directed toward discovering and making the fire service aware of information that will help to prevent future fatalities. This process needs to evolve into a process that produces usable data that can impact the problems which lead to firefighter deaths and injuries.

The mission of the FFFIPP is divided between two teams: one to investigate cardiovascular and medically-related fatalities and the other to investigate traumatic fatalities. The FFFIPP cardiovascular fatality team has the appropriate skills and qualifications to analyze deaths resulting from heart attacks and other medical conditions. This group is producing valuable information that is supporting efforts to reduce cardiovascular fatalities. The Fire Service should ensure that the cardiovascular fatality team continues to receive the necessary resources to complete their mission.

The FFFIPP traumatic fatality team is based in Morgantown and it has limited resources given the complex circumstances and varied scenarios that result in traumatic firefighter deaths. Some members of the traumatic fatality team have fire service backgrounds or fire service training but most of the members of the team come from an occupational safety or occupational forensics background. The traumatic fatality program's products could be improved by more fire service involvement in directing the work of the team and through direct participation in the work of the team.

NIOSH prides itself on the organization-wide use of the FACE (Fatality Assessment and Control Evaluation) method for investigating workplace fatalities. This method is successfully used across many industries by NIOSH. The approach is a valid way of conducting investigations and should be retained.

The current analysis of operational fatalities is based entirely on references to existing standards and recommended practices. This approach frequently identifies repetitive causal factors that can be associated with failure to follow the existing standards and recommended practices. While this effort has educational value, it can only serve to reinforce "conventional wisdom". It does not develop new information or provide additional insight into areas where different strategies should be considered or developed. The program should be expanded to evaluate the existing approaches in relation to real world experiences and outcomes and to consider a broad range of strategies to prevent firefighter fatalities, injuries, and occupational illness. This would require a paradigm shift in the orientation of the program, coupled with and increased sense of urgency in reducing firefighter fatalities.

The FFFIPP traumatic fatality team needs to be enhanced to include fire service subject matter experts (SMEs). These SMEs should be involved at all levels of an investigation to include: initial investigation and interview of witnesses, examination of physical evidence, analysis and review of findings, and development of the investigation report. In addition, the SMEs should be involved in the evaluation of "conventional wisdom" and the identification of areas where different approaches should be researched.

The presence of fire service SMEs in the NIOSH investigative effort would improve communication between professional NIOSH investigators and local fire department members, provide context information for the NIOSH investigators, and lend additional credibility to the NIOSH team. The SMEs can "speak" the firefighter language and act as a facilitative interpreter between the parties.

The role of the FFFIPP should be directed toward obtaining information from primary investigations, assembling and analyzing that information and making that information available to the national fire service audience. A single data collection and dissemination point for information regarding the investigation needs to be established. The efforts of IAFC and the other fire service organizations should be directed toward helping NIOSH obtain the resources to perform that mission well.

Subject matter experts (SME) should be nominated/selected/recommended by the joint coalition of fire service organizations, so they can be recognized for their expertise and independence as opposed to their affiliations. The SMEs should be involved in the overall project oversight and review process, as well as assisting with specific investigations and reviewing the reports. The selected SMEs need to be federally credentialed employees in order to gain access to sites where local law enforcement personnel are enforcing security or conducting investigations.

Recommendations

1. In conjunction with the other fire service organizations, develop an advisory board to work directly with NIOSH and the FFFIPP. This advisory board should be actively involved in representing the fire services interests much more actively than the current stakeholder systems.

2. In conjunction with the other fire service organizations, develop a working group to augment the information provided in the NIOSH reports. There have been concerns that current reports only go "so far" and need to include significantly enhanced command and control as well as tactical recommendations. In addition, the working group should identify the necessary resources to produce the recommended outcomes and performance benchmarks (i.e. investigation team response times, investigation report publication timelines, etc.).

3. In conjunction with the other fire service organizations and NIOSH, identify the need for statutory changes, additional resources (staffing and funding), and enhanced capabilities to facilitate the mission of the FFFIPP. In addition, develop marketing and lobbying strategies to successfully promote implementation of the necessary changes.

4. In conjunction with the other fire service organizations and NIOSH, develop a plan to integrate fire service subject matter experts into the NIOSH-FFFIPP investigative process, in both administrative and onsite response roles.

B. Work toward the development of a national system to conduct investigations of significant operational line of duty death (LODD) incidents.

The NIOSH-FFFIPP, by its nature, cannot devote significant resources in terms of investigator time and effort to a single firefighter fatality incident. There are simply too many firefighter fatalities and not enough resources. A more focused effort needs to be developed to address firefighter fatality incidents that are significant in some way or significant as an example of a number of similar incidents.

For many years, the United States Fire Administration conducted a significant fire investigation program that provided in-depth analysis of large loss fires – in terms of civilian deaths, firefighter deaths, or property loss. This, or some similar program, should be revitalized to provide in-depth analysis of selected firefighter fatality incidents.

The focus of the revitalized program could be to rapidly investigate significant firefighter fatality incidents. These investigations could provide additional information that is not practical to provide in a standard NIOSH-FFFIPP investigation. This additional information could include more detailed analysis of decision-making, communications, risk management decisions, and other more complicated factors. These investigations would analyze less than a dozen events a year and would complement the existing NIOSH-FFFIPP efforts.

The program would need to identify, in advance, the types of incidents that would receive this additional investigative effort. An investigative team or teams would need to be identified and be prepared to react to an incident in a short period of time. The team or teams would bring together structural specialists, fire protection engineers, experienced commanders, and other needed for the effort. In many ways, this team would be similar to the teams gathered to investigate significant wildland firefighter fatality events.

Recommendations:

1. Formulate written criteria to identify incidents that require or merit the more in-depth investigations discussed above.

2. Provide a method for these investigations to be conducted and funding for the effort. This may be through an expansion of the USFA significant incident program or through some other effort.

3. Implement the expanded investigations program.

C. **Develop a system/network/organization to collect, analyze and distribute information relating to protective clothing and equipment issues.**

One of the catalysts to bring issues to the surface regarding the FFFIPP program involved malfunctions of the Personal Alert Safety System (PASS) devices worn by fire fighters. PASS devices are designed to provide an audible alarm when a fire fighter becomes incapacitated and motionless. Several investigations revealed that PASS devices were failing to operate as designed.

It was quickly identified that there exists a serious void within the fire service to collect, analyze, and disseminate information regarding failures or difficulties involving personal protective equipment (PPE). Our inability to collect, analyze, and disseminate pertinent information enables PPE failures and defects to negatively impact our personnel and could result in serious injuries and/or death.

The fire service has worked to develop the National Fire Fighter Near-Miss Reporting System, which has had an immediate impact on information sharing among practitioners. However, this system is not currently designed or capable of filling the current void. The task force believes it is a viable model, and could be replicated to specifically track equipment-related issues.

A single point of contact (e.g., 800 #, website, task force, etc.) should be developed that would allow individual firefighters, fire departments, or fire service organizations to provide input on specific difficulties with a piece of safety equipment or protective clothing. These comments should be vetted by knowledgeable staff and an advisory board, posted for viewing by the fire service, and passed on to the responsible manufacturer and certification organization, as appropriate.

Within NIOSH, there exists the National Personal Protective Technology Laboratory (NPPTL), which has the mission to conduct research on protective clothing and equipment. The task force believes that the NPPTL would be the logical agency to provide technical expertise in this area for the fire service; however, NPPTL would require additional resources, both personnel and funding, to take on this enhanced mission. The task force believes that an interim system should be developed to perform this mission until NPPTL is in a position to accept this responsibility.

Recommendations

1. In conjunction with the other fire service organizations, NIOSH and industry representatives, develop a program to collect, analyze, and disseminate information regarding personal protective clothing and equipment problems and failures. The working group should also identify the most appropriate agency to house this program and look for potential funding sources.

2. In conjunction with the other fire service organizations, NIOSH and industry representatives promote rapid development of enhanced capabilities with the NIOSH-NPPTL to conduct technical evaluation and testing of personal protective clothing and equipment involving fire fighter fatalities and other incidents where performance deficiencies or failures are suspected.

Summary of Recommendations

The IAFC, in conjunction with a coalition of fire service organizations (e.g., IAFF, NVFC, NFPA, etc.), should work to advocate and support improvements in the NIOSH-FFFIPP and in the investigation of all fire fighter fatalities.

1. In conjunction with the other fire service organizations, develop an advisory board to work directly with NIOSH and the FFFIPP. This advisory board should be actively involved in representing the fire services interests much more actively than the current stakeholder systems.

2. In conjunction with the other fire service organizations, develop a working group to augment the information provided in the NIOSH reports. There have been concerns that current reports only go "so far" and need to include significantly enhanced command and control as well as tactical recommendations. In addition, the working group should identify the necessary resources to produce the recommended outcomes and performance benchmarks (i.e. investigation team response times, investigation report publication timelines, etc.).

3. In conjunction with the other fire service organizations and NIOSH, identify the need for statutory changes, additional resources (staffing and funding), and enhanced capabilities to facilitate the mission of the FFFIPP. In addition, develop marketing and lobbying strategies to successfully promote implementation of the necessary changes.

4. In conjunction with the other fire service organizations and NIOSH, develop a plan to integrate fire service subject matter experts into the NIOSH-FFFIPP investigative process, in both administrative and onsite response roles.

5. In conjunction with the other fire service organizations, formulate written criteria to identify incidents that require or merit the more in-depth investigations discussed above.

6. In conjunction with the other fire service organizations, provide a method for these investigations to be conducted and funding for the effort. This may be through an expansion of the USFA significant incident program or through some other effort.

7. In conjunction with the other fire service organizations and NIOSH, implement the expanded investigations program.

8. In conjunction with the other fire service organizations, NIOSH and industry representatives, develop a program to collect, analyze, and disseminate information regarding personal protective clothing and equipment problems and failures. The working group should also identify the most appropriate agency to house this program and look for potential funding sources.

9. In conjunction with the other fire service organizations, NIOSH and industry representatives promote rapid development of enhanced capabilities with the NIOSH-NPPTL to conduct technical evaluation and testing of personal protective clothing and equipment involved fire fighter fatalities and other incidents where performance deficiencies or failures are suspected.