

Incident Command Support Team: The Importance of the Incident Safety Officer

Lance McClintock

Prince William County Department of Fire and Rescue

Prince William, Virginia

**CERTIFICATION STATEMENT**

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writing of another.

Signed: \_\_\_\_\_

### Abstract

The Prince William County Department of Fire and Rescue does not automatically dispatch a dedicated safety officer on significant events as part of the incident command support team. This was a specific recommendation of the Department's Line of Duty Death Investigative Report. The purpose of this research project was to evaluate the effectiveness of the safety officer dispatch. The descriptive research methodology was used to answer research questions regarding the national standards that exist for safety officers, the purpose of a safety officer on the scene of emergency incidents, and the types of incidents a safety officer should be dispatched. The procedures included a questionnaire distributed to the member jurisdictions of the Metropolitan Washington Council of Governments Fire Health & Safety Committee, a review of department standard operating procedures and standard operating guidelines, and interviews with the uniformed personnel assigned to the Prince William County Department of Fire and Rescue's Office of Health and Safety. The results of the research revealed consistency with respect to adherence to the national standards that exist for the safety officer position; however, the deployment of the safety officer varied by the jurisdictions surveyed. Results of the research also revealed agreement as to the purpose of a safety officer on the scene of an emergency incident and the types of calls the safety officer should be dispatched. It is recommended that the Prince William County Department of Fire and Rescue consider assigning the current safety officers to provide dedicated coverage 24 hours a day 365 days a year. In addition, it is recommended that the dispatch compliments should be updated to include the automatic dispatch of the on-duty safety officer as a component of the incident command support team.

**Table of Contents**

Certification Statement .....	2
Abstract .....	3
Table of Contents .....	4
Introduction .....	5
Background and Significance .....	5
Literature Review .....	15
Procedures .....	21
Questionnaire .....	21
Review of Standard Operating Procedures and Standard Operating Guidelines .....	22
Interviews.....	22
Assumptions and Limitations .....	22
Results .....	23
Discussion .....	26
Recommendations .....	28
Reference List .....	32
Appendix A (Questionnaire) .....	34
Appendix B (Questionnaire Results) .....	37

### Incident Command Support Team: The Importance of the Incident Safety Officer

During the mid 1990's, the Prince William County Department of Fire and Rescue created a safety officer position to start the development process of creating a health and safety program. Over the years, changes have been made to address the need of providing for a safer work environment on emergency scenes and the health and safety program has grown to include daytime incident safety officers for each of the four operational battalions.

The problem is that the Prince William County Department of Fire and Rescue does not automatically dispatch a safety officer as part of the incident command support team. The purpose of this research project is to evaluate the effectiveness of the safety officer dispatch. The descriptive research methodology was used to answer the following questions:

1. What national standards exist for safety officers?
2. What is the purpose of a safety officer on the scene of an emergency incident?
3. What types of incidents should a safety officer be dispatched?

### **Background and Significance**

Prince William County is located in Northern Virginia, approximately 35 miles southwest of Washington, D.C. It is bounded on the north by Fairfax and Loudoun Counties, on the east by the Potomac River (Maryland), on the south by Stafford County, and on the west by Fauquier County. Prince William County encompasses a total area of 348 square miles and includes within its boundaries the independent cities of Manassas and Manassas Park. As of March 15, 2010, the estimated population of the county is 396,519.

Prince William County's fire and rescue services are provided by a combination career and volunteer system. The career Department of Fire and Rescue (DFR) and eleven independent volunteer organizations make up the Fire and Rescue Association (FRA) where collectively they

work together to staff 20 fire stations 24 hours a day, seven days a week. During calendar year 2009, the fire and rescue service in Prince William County responded to 38,501 incidents which encompassed 79,140 unit responses.

The DFR consists of 506 members, a combination of civilian and uniformed individuals. The mission of the DFR is to protect lives, property, and the environment through the timely, professional, humanitarian services essential to the health, safety, and well-being of the community. DFR staff is assigned to one of four divisions which include the Office of the Chief, the Community Safety Section, the Operations Section, and the Systems Support Section. These four divisions assist the DFR reach its goals which supports Prince William County's strategic plan. DFR staff assigned to the Office of the Chief coordinates the long range fire and rescue service strategic plan, DFR performance measures, data development and reporting for local, regional, state, and national projects and programs.

The Community Safety Section's primary responsibility is to reduce hazards that contribute to the cause and spread of fire. This area of responsibility is demonstrated through

- code enforcement;
- fire and explosion investigations;
- fire protection system and plan reviews;
- community fire and life safety education; and
- emergency management.

The Operations Section is responsible for the provision of emergency and non-emergency services to protect lives, property, and the environment, as well as offering humanitarian assistance. DFR staff responds to calls for assistance during all emergency situations: accidental, natural, or manmade. The Operations Section provides the full realm of

service for calls ranging from basic and advanced pre-hospital emergency medical life support, fire suppression, hazardous materials incidents, and technical rescues. The minimal DFR staffing responsibility at any of the stations is a Monday through Friday, 12-hour shift (0600-1800). Some stations have 24-hour career personnel assigned to them.

The Systems Support Section is an internal customer service provider. The Systems Support section manages department programs and activities from behind the scenes to ensure prompt, efficient, and effective service to the Prince William County community. This section includes human resources, training, administrative support, budgeting and accounting, planning and analysis, information technology, logistical support, and communications. The Department's Office of Health and Safety also resides within the Systems Support Section and oversees the multitude of safety, health, and wellness services for department members. Both uniform and non-uniform members staff the Systems Support Section, providing a diverse mix of internal services to the department and its members.

On April 16, 2007 the DFR suffered its first line of duty death during a residential structure fire. The event occurred in a large single family structure on Marsh Overlook Drive and involved a career firefighter. The career firefighter was actively engaged in search and rescue operations when the fatality occurred.

At 0601 hours, the Prince William Office of Public Safety Communications (OPSC) began receiving 911 calls for a house fire in Company 512's first-due response area. The first caller reported the structure fire but the exact location of the street address was unknown. A second 911 call was received at 0602 hours with a specific address location reported as next to 15492 Marsh Overlook Drive. The incident was dispatched at 0603, and the initial alarm assignment included Wagon 512, Engine 510, Engine 520, Tower 512, Ambulance 510A, Medic

512C, and Battalion 503. Rescue 510 and Safety 502 added themselves to the incident dispatch. The exact location of the fire incident was 15474 Marsh Overlook Drive.

Wagon 512 was the first unit to arrive on the scene at 0608 hours and reported heavy fire showing on Sides B and C of a two-story single-family home. Tower 512 arrived right behind Wagon 512. Both Wagon and Tower 512 officers independently performed a size-up of the structure and met on Side A of the structure to establish an initial incident action plan. During their size-up, a minivan was observed in the driveway as well as cars on the street in front of the house. There were no interior lights on in the house and given the early morning time period, an occupant rescue situation was suspected. Due to the potential rescue situation, a second alarm assignment was quickly requested by Wagon 512's officer.

The initial incident action plan included Wagon 512's crew advancing a 2 ½ inch hose line for interior fire attack and Tower 512's crew performing a primary search. Both crews planned to proceed to the second floor to accomplish a search of the bedroom areas first. Interior conditions on the first floor were reported as light smoke with no heat. Tower 512's officer reported seeing fire on the house's exterior at the B/C corner. The interior windows were still intact and viewed by the Tower officer from the foyer area on the first floor.

Upon ascending the foyer stairs to the second floor, Tower 512's inside crew encountered smoke banked down approximately three to four feet from the ceiling. The Tower officer and firefighter were in the process of performing a right hand primary search of the master bedroom when conditions on the second floor rapidly deteriorated and changed to thick black smoke, zero visibility, and high heat conditions. Reacting to the change in conditions, the Tower crew began to evacuate the bedroom area to exit the structure. Intense fire and extreme heat rapidly moved down the hallway from Side B toward the master bedroom.



Tower 512's officer stated that while in the master bedroom verbal communications with the firefighter were maintained during the rapid fire and heat development. The officer reported that the firefighter indicated he was behind his officer as the officer attempted to locate the bedroom door. The officer crawled into the hallway and became entangled with a table. The entanglement caused the officer to fall down approximately five to six stairs to the curve of the interior staircase. The Tower officer immediately called back for the firefighter who indicated he was having difficulty locating the stairs.

Simultaneously, Wagon 512's crew experienced the rapidly changing conditions at the front door area and encountered thick black smoke and a ball of fire that was reported to have pushed out the front door. Wagon 512's officer called to the Tower crew to leave the structure. The Wagon officer heard noises that the officer believed were the interior stairs collapsing. Wagon 512's officer reacted to the noise and informed Command that the stairs had burned out, with a crew upstairs, and ordered an evacuation of the structure.

Wagon 512's crew and Rescue 510's interior crew were at the front door when they observed a white helmet appear in a ball of fire in the staircase and foyer area. The crews reached into that area and located Tower 512's officer and quickly removed the officer to the front yard. Tower 512's officer reported that the firefighter was still on the second floor and believed to be in or near the staircase. Rescue 510's officer transmitted a mayday radio report about the missing firefighter. This was immediately followed by a mayday transmission from the firefighter.

In a rescue attempt, crews reentered the structure. The first floor area around the staircase, the staircase, and the second floor hallway area were heavily involved in fire. Crews attempted to protect the staircase with hose lines operating from the foyer area. Despite the

intense heat and fire conditions, crews made multiple attempts to ascend the staircase to the second floor to locate the firefighter while the hose lines operated from the foyer area. During the multiple attempts in these extreme conditions, crews reached the second floor landing area twice where the firefighter was reported to have been but were not able to locate him. A partial collapse of the ceiling and roof structure in Charlie and Delta quadrants occurred and extremely intense fire conditions forced crews back down the stairs. Safety 502 observed the deteriorating conditions from the exterior and issued an emergency evacuation and all crews were ordered out of the structure by Command.

Crews worked to bring the fire under control, reentered the structure, and an extensive search was initiated for the missing firefighter. Several areas of the first and second floors had been burned through and the entire stability of the structure was of concern. Crews located the deceased firefighter in the master bedroom. The firefighter's body was transported to the Virginia Department of Health's Medical Examiner's office. The cause of the line-of-duty death was determined to be thermal and inhalation injuries.

The Prince William County Department of Fire and Rescue Line of Duty Death Investigative Report (2008) identifies the need to develop and implement an incident command support team to assist with the mitigation of major incidents. Assembling an incident command support team from responding resources can lead to inconsistent command post functioning and operation and reduces the amount of resources available for firefighting responsibilities. During the Marsh Overlook incident, Emergency Medical Service (EMS) personnel were initially utilized to perform command post support operations. This caused a portion of the EMS resources dispatched to the incident to be taken away from their primary responsibilities of

patient care or in establishing personnel rehabilitation roles. If an EMS need had occurred, the incident commander would have lost this critical command post support resource.

Personnel assigned to staff assignments typically work from 0700 – 1700 hours Monday through Friday while personnel in the Operations Section typically begin their respective shifts at 0600 hours. Since this incident occurred prior to 0700 hours, command level officers from staff assignments that would normally respond when available to augment the incident command support team during significant events were not readily available to assist. While several of these command level officers eventually responded from their homes, their arrival was delayed due to not being rapidly alerted to the incident.

During the Marsh Overlook incident, the incident commander was operating alone without any immediate command post support assistance in the initial stages of the incident. The following events occurred within the first minute after establishing command:

- Emergency evacuation with a report of a crew trapped on the second floor.
- A rapidly progressing fire.
- Depletion of on scene resources.
- Operating in a hostile environmental condition that included high winds and flying embers spreading into the command post location.

The following events occurred within two minutes after establishing command:

- Mayday from a unit reporting a missing firefighter.
- Mayday from a firefighter reporting he is lost and needs assistance.
- Unanswered radio communications from units in the immediately dangerous to life and health (IDLH) atmosphere.
- Confirmed lost firefighter situation.

The Prince William County Department of Fire and Rescue Line of Duty Death Investigative Report (2008) recommends that the minimum components to be considered in the evaluation and development of an incident command support team include:

- Incident Commander
- Incident Commander Assistant
- Incident Safety Officer
- EMS Officer
- Planning Officer
- How the team is assembled (transportation)
- What support equipment is needed to function from the command vehicles
- What are the escalating needs as an incident grows in complexity and greater alarm assignments are required

While each of these components is critical and should be given due consideration, this Applied Research Project (ARP) will explore only the recommendation of adding a dedicated incident safety officer as part of an incident command support team. The International Fire Service Training Association (2004) identifies that employee safety and health concerns are essential in any work situation; however, fire and emergency service organizations historically operate in hostile or hazardous work environments. Therefore, it is the responsibility of chief officers and incident commanders to mitigate as much of the danger to employee safety and health as possible.

By the nature of the various duties they perform, emergency responders are at risk of death, injury, or illness. Incident safety should be a primary concern of all those who respond to the aid of the jurisdiction they serve. To help minimize the risk to responders, a safety officer

should be a dedicated position and resource to the incident commander. While the incident commander has overall responsibility for the safety of the responders, the incident safety officer has the direct responsibility to focus on the safety aspects of the incident.

The DFR's Office of Health and Safety consists of six uniformed members and two civilian staff. The six uniformed personnel include one battalion chief, one captain, and four lieutenants. Currently, the six uniformed personnel work collectively to provide both administrative and emergency response coverage during traditional career hours which include Monday through Friday from 0600 – 1800 hours. Between these hours, at least two safety officers are available for emergency response and will self-dispatch on incidents. The safety officers are not physically on-duty evenings (1800-0600), weekends, or county holidays. This creates a void in work hours covered and a potential risk for DFR career personnel and volunteer members who are operating on nights, weekends, and holidays without a dedicated on-duty safety officer available for emergency response and inclusion as part of the incident command support team.

An additional risk is that the Prince William County Department of Fire and Rescue does not automatically dispatch a safety officer as a component of any dispatch complement. This practice is in contrast to the recommendation from the Prince William County Department of Fire and Rescue Line of Duty Death Investigative Report (2008). This practice has the potential to create unnecessary risk to responders and could potentially have a negative impact on the incident command function if resources are deprived from other available resources that are on the scene. The Prince William County Department of Fire and Rescue's on-duty safety officers have been given the authority to self-dispatch to incidents during traditional career staff hours which include Monday through Friday from 0600 – 1800 hours, excluding county holidays.

While there is no current standard operating procedure in place covering self-dispatch, on-duty safety officers in Prince William County have been given authority to self-dispatch to the following call types:

- Structure Fires
- Commercial Inside Gas Leaks
- Hazardous Materials Incidents
- Technical Rescue Incidents
- Vehicle Accidents with Entrapment
- Airplane Crashes
- Building Collapses
- Water Rescues
- Truck Fires
- Other types of unusual incidents as determined by the safety officer

The health and safety officers for the DFR responded to a total of 523 distinct incidents from January 1, 2009 to December 31, 2009 (S.W. Boggs, personal communication, February 11, 2010). These 523 incidents generated 552 unit dispatches as many of the incidents had multiple on-duty safety officers on the same event. It is imperative to keep in mind that these safety officer responses occurred only during traditional career hours which include Monday through Friday from 0600 – 1800 hours. In contrast, there was approximately 1096 similar type incidents dispatched between 1800 – 0600 hours, on weekends, and on holidays in which a dedicated safety officer did not self-dispatch. This disparity in the level of safety officer support potentially creates a risk for personnel that are working during these time frames.

This ARP focuses on the problem that the Prince William County Department of Fire and Rescue does not automatically dispatch a safety officer as part of the incident command support team. This research problem has definitive connection to the National Fire Academy's (NFA) *Executive Fire Officer Program* (EFOP), *Executive Development* (ED) R123 course. One of the identified goals of the ED course is to "develop and integrate change management and leadership techniques necessary in complex organizations" (FEMA, 2006, p. SM 0-3).

This ARP also relates to one of the goals of the United States Fire Administration (USFA). Specifically, the identified goal "reduce risk at the local level through prevention and mitigation" (FEMA, 2010, p. 18). The USFA's strategic initiatives directly associated with this goal and impacting fire and emergency services include line of duty deaths and injuries, fire prevention and life safety, and Emergency Medical Services.

### **Literature Review**

Organizations that create positive work environments and make significant investments in their human capital are best positioned to truly realize the benefits of their talents and work potential (Schermerhorn, Hunt, & Osborn, 2005). The study of organizational behavior centers on treating employees right in order to receive high returns. Organizations that provide their employees the added benefit of an effective program such as dedicated incident safety officers are better positioned to maintain those high returns.

Jackson and Schuler (2006) advocate that "by reducing the rates and severity of occupational accidents, diseases, workplace violence, and stress-related illness, and improving the quality of work life for their employees, organizations can only become more effective" (p. 540). The positive outcomes of safe and healthy workplaces are

- higher productivity owing to fewer lost workdays;

- increased efficiency and quality from a more committed workforce;
- reduced medical and insurance costs;
- lower workers' compensation rates and direct payments because of fewer claims being filed; and
- improved reputation as an employer of choice (Jackson & Schuler, 2006, p. 540).

Safety officers, in one form or another have been present in the American work force for a long time. Dodson (2007) identifies that “even though some fire departments have been using safety officers for almost a century, the fire service as a whole was slow to catch up to the concepts of safety and risk management in all phases of fire department operations and administration” (p. 8). Carter & Rausch (2008) suggest that “historically, the fire service took pride in being a dangerous occupation. However, during the 1980’s attitudes began to change. Fire department administrators recognized people as a resource that must be protected and conserved” (p. 189). These observations clearly define the current evolutionary process of the health and safety program in Prince William County from its inception in the mid 1990’ to its much broader focus today.

Edwards (2000) indicates that “ensuring the physical and mental well-being of employees in the workplace is the primary goal of the health and safety management process” (p. 185). The workplace for fire and rescue personnel can be extended to include on the scene of emergency incidents. Fischler (2010) adds that “without sufficient (or sufficiently trained) personnel on the scene, critical support functions may be inadequately staffed or not operating. This failure will detract from the operational functions and decrease firefighter safety” (p. 54). These findings are influential to this ARP as the safety officers in Prince William County are not physically on-duty and available for immediate emergency response on evenings (1800-0600), weekends, or county



holidays potentially creating a void in firefighter safety. “If we are going to reduce the number of injuries and fatalities that occur each year to our people, we must improve the capabilities of our safety officers” (“Incident Safety,” 2007).

Tippett (2009) indicates that “the incident safety officer position should be based on NFPA 1521: Standard for Fire Department Safety Officer, as well as assistance from the Fire Department Safety Officer Association” (p. 2). NFPA 1521 Standard for Fire Department Safety Officer (2002) contains the minimum requirements for the assignment, duties, and responsibilities of the health and safety officer and an incident safety officer for a fire department or other fire service organization. The standard identifies that the incident safety officer shall be integrated with the incident management system as a command staff member. In addition, the standard clearly identifies that standard operating procedures shall define criteria for the response or appointment of an incident safety officer.

The International Fire Service Training Association (2007) identifies that the safety officer is responsible for assessing unsafe situations and hazardous conditions and developing an incident safety plan that ensures the safety of personnel at the incident. The incident safety officer has the authority to alter, suspend, or terminate activities that are imminently dangerous to the life of personnel on the scene of an incident. Brunacini (2002) indicates that the safety officer’s responsibilities on the scene of an emergency incident include the following:

- Evaluate all aspects of the overall operation that affects safety
- Monitor the safety of the workers operating in the hazard zone
- Evaluate changing incident conditions
- Evaluate changing structural conditions
- Supervise safety officers

- Stop unsafe acts

Dodson (2007) suggests that the incident safety officer should be focused on scene-specific operations and functions including risk evaluation, resource evaluation, hazard identification and communication, action plan review, safety briefings, collapse zoning, accident investigation, post-incident analysis, and safety committee participation. Shouldis (2005) adds that “knowing the exact location of resources, vigilantly performing a continuous 360 degree survey, and understanding the inherent dangers of specific occupancies are among the significant duties of the incident safety officer” (p. 3).

The Fire and Rescue Departments of Northern Virginia (NOVA) Command Officers Manual (2008) indicates that the incident safety officer’s function is to develop and recommend measures for ensuring personnel safety and to assess and anticipate hazardous and unsafe situations. Responsibilities of the incident safety officer include:

- Obtain briefing and direction from incident commander.
- Participate in planning meetings.
- Identify unsafe conditions associated with the incident and develop measures to ensure personnel safety.
- Situations of imminent danger requiring immediate action shall be halted at once by the safety officer, and the incident commander will be notified.
- Review the incident action plan for safety implications.
- Ensure adequate rehabilitation for personnel.
- Work in unison or as a liaison with the specialty branches designated safety person in the development of the safety plan.
- Organize, assign, and brief safety assistants as needed.

- Size-up the need for and effectiveness of the accountability plan and procedure; the rapid intervention plan and procedure; and the protective clothing needs of personnel.
- Identify, establish, and maintain safety zones.
- In situations where immediate action is not necessary, the safety officer shall advise the incident commander of the situation and make recommendations.
- Maintain a log and prepare a report of findings at close of incident as required.

Information from the NOVA Command Officers Manual is influential to this ARP as this is the guiding document for command officers in the Northern Virginia region whose agencies have developed cooperative relationships to improve the delivery of fire and emergency medical services. This includes the Prince William County Department of Fire and Rescue and thirteen other regional fire and rescue departments.

With respect to the effectiveness of the dispatch and deployment of the incident safety officer, Brunacini and Brunacini (2004) suggest that “sending an adequate number of command team and staff must be built into the regular dispatch process, and it must be done automatically” (p. 289). Dodson (2007) indicates that the overall goal should be to have a pre-designated, trained incident safety officer programmed to respond to certain incidents with a high risk to firefighters. Incidents that may require an automatic incident safety officer response include:

- Residential or Commercial Structure Fires
- Wildland-Interface Fires
- Specialty Team Incidents
- Target Hazard Incidents
- Aircraft Incidents
- Weather Extremes

According to the NFA Incident Safety Officer Student Manual, the use of the ISO is recommended at working structural fires in commercial buildings; multi-casualty incidents; all multiple alarm fires; and all special operations incidents such as trench rescues, water rescues, hazardous materials incidents, and high angle rescues. Reichenbach (2009) notes “if there is no designated safety officer, there is no one looking for hazards. It is imperative that for every incident you encounter, no matter how complex, there be a designated safety officer” (p. 2). Tippett (2009) adds that “regardless of the department’s size, activity level or budget, the incident safety officer position in a fire department should be considered as important to the fire department’s mission as the need for an incident commander on every multi-company working incident” (p. 2).

Personal interviews were conducted with each of the six uniformed DFR personnel assigned to the Prince William County Department of Fire and Rescue’s Office of Health and Safety (personal communication, December 1, 2010). This group was selected by the author as these individuals are the DFR’s current subject matter experts on health and safety issues within the department. One of the questions that the group was asked was to identify how the incident safety officer can be a resource to the incident command support team. In summary, the group identified that the incident safety officer provides a level of expertise to the incident commander on health, safety, and risk management issues. Each member agreed that the incident safety officer works in conjunction with the incident commander by providing an objective perspective of the emergency incident and associated hazards. The incident safety officer needs to understand the incident commander’s incident action plan and ensure that emergency personnel operating within that plan are doing so in the safest and most effective way possible. Given the fact that the Prince William County Department of Fire and Rescue has no written policies or

procedures on the deployment of an incident safety officer, the responses provided by the personnel assigned to the Office of Health and Safety were influential to this ARP because they showed a clear sense of agreement on the roles and responsibilities of this position within the organization.

### **Procedures**

The procedures utilized for this ARP included a questionnaire, a review of applicable Standard Operating Procedures and Standard Operating Guidelines, and interviews with each of the six uniformed safety officers assigned to the Prince William County Department of Fire and Rescue's Office of Health and Safety. The desired outcome was to develop a better understanding of how regional departments deploy and utilize the incident safety officer on the scene of emergency incidents.

### **Questionnaire**

A questionnaire was developed and circulated among the fire departments that are represented on the Metropolitan Washington Council of Governments (COG) Fire Health & Safety Committee. COG is a regional organization of Washington area local governments and is comprised of 21 local governments surrounding the nation's capital. COG provides a focus for action and develops sound regional responses to a multitude of issues to include public safety. The COG Fire Health & Safety Committee is currently comprised of the Health and Safety Officers from 8 fire and rescue departments. Not all of the COG jurisdictions have a representative on the committee. Questionnaires were distributed to each of these 8 organizations with 7 of the questionnaires returned. A copy of the questionnaire is included in Appendix A. Data gathered from the questionnaire is included in the Results section of this ARP and in Appendix B.

### **Review of Standard Operating Procedures and Standard Operating Guidelines**

Surveyed departments who responded that they had a written Standard Operating Procedure (SOP) or Standard Operating Guideline (SOG) regarding the automatic dispatch of an incident safety officer were contacted and asked if they would submit a copy of their respective SOP or SOG for review as part of this ARP. Four departments identified that they had an existing SOP or SOG and each provided that information for review. Information regarding the specifics of these policies and guidelines is included in the Results section of this ARP.

### **Interviews**

Personal interviews were conducted with each of the six uniformed DFR personnel assigned to the Prince William County Department of Fire and Rescue's Office of Health and Safety. This included one battalion chief, one captain, and four lieutenants within the department. The purpose of these interviews was to obtain additional information and insight with respect to the incident safety officer position within Prince William County. The following questions were asked during the interviews and the results are referenced in the Literature Review and Results sections of this ARP.

- What is the purpose of a safety officer on the scene of an emergency incident?
- What types of incidents should a safety officer be dispatched?
- How is the incident safety officer a resource to the incident command support team?

### **Assumptions and Limitations**

The questionnaire utilized in this ARP made several assumptions and also had several limitations. The first assumption was that the respondents answered the questions in a factual manner. An additional assumption was that the respondents had a detailed knowledge of their respective Department's guidelines and operating procedures with respect to the incident safety

officer position. A limitation of the questionnaire was the limited manner in which the participants were selected. While the information received from a regional basis was informative, the author believes that a broader sample of participants would have yielded additional results beneficial to the ARP.

### **Results**

Research question number one: What national standards exist for safety officer? Only one standard was found regarding the incident safety officer position. NFPA 1521 Standard for Fire Department Safety Officer contains the minimum requirements for the assignment, duties, and responsibilities of the health and safety officer and an incident safety officer for a fire department or other fire service organization. The results of the questionnaire indicated that all 7 responding departments have a member of their respective organizations assigned as the fire department health and safety officer. Each of the departments, with the exception of one, had members of the department assigned as assistant safety officers. The number of assigned assistant safety officers varied by department. See Appendix B for questionnaire results.

All 7 responding departments to the questionnaire indicated that they follow NFPA 1521 Standard for Fire Department Safety Officer. However, only 4 of the 7 responding departments indicated that their respective departments have any written standard operating procedures or guidelines regarding the automatic dispatch of an incident safety officer. This revealed an unexpected finding that is relevant to this ARP. Section 6.1.2 of NFPA 1521 indicates that standard operating procedures shall define criteria for the response or appointment of an incident safety officer.

Research question number two: What is the purpose of a safety officer on the scene of an emergency incident? Information obtained during the literature review on this topic revealed

that the expectations of the incident safety officer once on the scene of an emergency incident are largely consistent. The interviews conducted with the six uniformed DFR personnel assigned to the Prince William County Department of Fire and Rescue's Office of Health and Safety provided similar results when asked the question about the purpose of a safety officer on the scene on an emergency incident. These responses include:

- Assess safety hazards and unsafe conditions.
- Ensure accountability systems are in place.
- Ensure a Rapid Intervention Team (RIT) has been established.
- Ensure Rehab has been established.
- Establish incident safety plans.
- Assist with incident timelines.
- Survey for unsafe practices.
- Establish hazard zones.
- Ensure proper use of tools.
- Ensure department SOP's are being followed.
- Ensure appropriate Personal Protective Equipment (PPE) is being worn.
- Investigate injuries to personnel if they occur.
- Provide guidance to incident commander as appropriate

There was limited research information available regarding whether or not an incident safety officer should be a component of an automatic dispatch compliment. Questionnaire results provided information regarding the dispatch of the health and safety officer or assistant safety officers. This included determining whether or not the safety officer was part of an automatic dispatch compliment or authorized to self-dispatch. Information was also gathered in



these questions to determine if there was a delay or failure to respond to an emergency incident because the safety officer was not part of an automatic dispatch compliment. Results of the questionnaire indicated that 4 of the 7 departments have the safety officer as part of an automatic dispatch compliment. All 7 of the departments surveyed indicated that the safety officer or assistant safety officers have the authority to self-dispatch to incidents when they are on duty. Responses regarding failure or delayed responses are listed in Appendix B.

Research question number three: What types of incidents should a safety officer be dispatched? Information obtained during the literature review revealed that there is considerable agreement on the types of emergency incidents that a incident safety officer should be dispatched. Each of the 7 departments that responded to the questionnaire was in agreement as to the types of incidents that the health and safety officer or assistant safety officers are authorized to self-dispatch. This included all of the available selections that were on the questionnaire. See Appendix B.

Departments who responded to the questionnaire that they had a written SOP or SOG regarding the automatic dispatch of an incident safety officer were contacted and asked if they would submit a copy of their respective SOP or SOG for review as part of this ARP. Four of the 7 departments identified that they had an existing SOP or SOG and each provided that information for review. There was a similarity regarding the types of incidents that were part of the automatic dispatch for these departments. This included the following types of incidents:

- Hazardous materials incidents
- Technical rescue/special operations incidents
- Train or Metro incidents
- All multiple alarm incidents

The interviews conducted with the six uniformed DFR personnel assigned to the Prince William County Department of Fire and Rescue's Office of Health and Safety provided a variety of results when asked the question about what types of incidents should a safety officer be dispatched.

### **Discussion**

The relationship between the study results and the specific findings of others in the literature review provide some support of the importance of the safety officer being part of an automatic dispatch. The research questions asked as part of the ARP were: What national standards exist for safety officers? What is the purpose of a safety officer on the scene of an emergency incident? What types of incidents should a safety officer be dispatched.

NFPA 1521 Standard for Fire Department Safety Officer (2002) contains the minimum requirements for the assignment, duties, and responsibilities of the health and safety officer and an incident safety officer for a fire department or other fire service organization. The standard identifies that the incident safety officer shall be integrated with the incident management system as a command staff member. Shouldis (2005) supports this claim and asserts that "following an incident management system and activating key positions are essential to emergency scene organization and personnel safety" (p. 4). Study results support that each of the surveyed departments follows NFPA 1521 and that at a minimum each has a designated health and safety officer within their organization.

However, NFPA 1521 also identifies that standard operating procedures shall define criteria for the response or appointment of an incident safety officer. More specifically, fire departments should develop response procedures for an incident safety officer that is on call or designated to respond. The International Fire Service Training Association (2007) indicates

that “the organization’s designated health and safety officer is responsible for the safety and health plan that is based on policy” (p. 429). Study results indicated that only 4 of the 7 departments who responded to the survey have any written standard operating procedures or guidelines regarding the automatic dispatch of an incident safety officer. This is in contrast to Dodson (2007) who suggests that “individual fire and rescue departments should develop guidelines for an automatic incident safety officer response as well as guidelines, or circumstances that mandate an automatic incident delegation during the incident” (p. 61). From an organizational perspective, having specific written guidelines or standard operating procedures regarding the automatic dispatch could alleviate other potential issues such as lack of accountability and freelancing on the scene of an emergency incident.

Study results and the findings in the literature review revealed a dedicated incident safety officer provides numerous critical functions on the fire ground and other emergency incidents. Interview responses, while varied, were inline with what others have said on this topic. Tippet (2009) indicates that an incident safety officer should:

- Stay alert for events that may cause injury that occur during the action periods of an emergency;
- Provide the incident commander with real-time reports from multiple locations on the scene;
- Serve as a sounding board when it’s not immediately clear how to approach a situation; and
- Serve as an objective evaluator to the department’s performance at emergency scenes.

Shouldis (2005) indicates that “the incident safety officer’s responsibility is to constantly evaluate risks, hazards, and benchmarks” (p. 3). Organizationally, it is imperative that the

incident safety officer becomes a dedicated resource on emergency incidents and provides the support to the incident commander. Fischler (2010) indicates that “support functions exist to assist the incident commander in accomplishing the firefighting/EMS/rescue operations” (p. 54).

### **Recommendations**

Based on the current situation regarding the lack of automatically dispatching a safety officer in Prince William County and the associated hazards identified in the Line of Duty Death Investigative Report, the overall goal should be to assign the four uniform lieutenants in the Office of Health and Safety on shift work to ensure dedicated coverage 24 hours a day 365 days a year. In either case, the dispatch compliments should be updated to include the automatic dispatch of an on-duty safety officer as a component of the incident command support team.

The process of assigning the safety officers to shift work and changing the dispatch compliments would be a dynamic process involving multiple stakeholders both within and outside the organization. It is critical that all required approvals regarding this program and its associated components are in place prior to implementation. The major stakeholders in the implementation step include the DFR, the FRA, and the Office of Public Safety Communications (OPSC). Each of these groups would need to work collectively during the design phase to ensure the overall goals and objectives of the program are met.

The DFR would be the key leader during the design phase of the program. In particular, the Chief and the Office of Health and Safety should be responsible for selecting the personnel assigned as the shift safety officers, determining the appropriate work schedules, and communicating the overall goals and objectives of the program system wide. This would be a formal process and the DFR should be tasked with ensuring the other major stakeholders are

involved at each step of the design process. This may require multiple groups to be working simultaneously up until the program is implemented.

The involvement of the FRA is necessary as the shift safety officer and associated changes to the dispatch compliments are system changes requiring approval of the governing body. Prior to implementation, the DFR would need to present this program proposal to the FRA Executive Committee for approval. Once approved by the Executive Committee the program would be presented to the FRA Board of Directors for final review and approval.

Changes and the addition of the safety officer to certain dispatch compliments would also need to be approved by the FRA, but the logistics of this work and the necessary design changes would need to occur in the OPSC. Communications staff would need to ensure that the dispatched compliments were updated to reflect the automatic dispatch of the safety officer on those incidents where a command officer is dispatched. Additional call types may need to be updated as appropriate.

An additional component that would also need to be considered during the design phase is developing an effective communications plan to ensure all fire and rescue personnel, both career and volunteer, are aware to the new program and its overall goals and objectives. This new risk management program is a change from the way business has been conducted in the past and it is important that personnel at all levels in the organization understand the concept of the program to ensure it is successful.

As with any new initiative, it is imperative to monitor and evaluate the effectiveness of the program. When safety and health are viewed as issues of strategic value and importance, they become central to the entire performance management process. Performance measures monitor how well the program is doing against established goals (Jackson & Schuler, 2006).

Thus, the best way to monitor the overall effectiveness of the 24 hour safety officers is to establish quarterly performance measures and monitor and compare performance over a period of time. Currently, the Prince William County Department of Fire and Rescue's Office of Health and Safety tracks the following performance measures:

- Work Hours Lost to Injury
- Number of Injuries (Workers' Compensation Claims)
- Workers' Compensation Cost (total)
- Workers' Compensation Cost Per 100 Employees
- Workers' Compensation Cost Per Claim
- Injuries Per 100 Employees

The most significant areas in evaluating progress would be the reduction of accidents and injuries on the scene of events that can be directly attributed to the role of the safety officer as part of the incident command support team. This may be difficult to measure, but one way this could be accomplished is to track and compare accident, injury, and near miss reports on a quarterly basis. This practice already occurs by the Office of Health and Safety, but this comparison could now be broken down into detailed hours of the day or specific events in which a health and safety officer was on the scene. From a risk management perspective, the overall goal would be to not only have a reduction of accidents and injuries for any incident in which a dedicated safety officer is on the scene, but to reduce the costs associated with these events system wide.

There are also a variety of other ancillary measurements that would be important to evaluate the effectiveness of this risk management program. The utilization of a records management system would be beneficial to capture information such as call volume, response

times, and core functions of the safety officer while on the scene of the incident. The overall effectiveness of the safety officer and their on scene activities could also be assessed during a post incident analysis of certain events. Finally, the incident commander could routinely conduct an evaluation of the safety officer's performance and contributions to the incident command support team in order to evaluate performance and improve future contributions to scene management.

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**APPENDIX A****Incident Safety Officer Questionnaire**

Department Name:

Contact Name:

Email Address:

Phone Number:

1. Which of the following most accurately describes your department?

Career     Volunteer     Combination     Other:

2. Does your department follow NFPA 1521 – Standard for Fire Department Safety Officer?

Yes     No     Unknown

3. Do you have a member of your department assigned as the fire department health and safety officer?

Yes     No     Unknown

4. Do you have members of your department assigned as assistant safety officers?

Yes     No     Unknown

(If yes, answer question #4)

5. How many members of your department are assigned as assistant safety officers?

1 – 3      
4 – 6      
7 +   

6. Do you have a dedicated fire department health and safety officer or assistant safety officer on-duty and available to respond to emergency incidents 24 hours/day?

Yes     No     Unknown

7. Is the health and safety officer or assistant safety officers in your department part of any automatic dispatch complement?

Yes       No       Unknown

8. Does your department have any written standard operating procedures or guidelines regarding the automatic dispatch of an incident safety officer?

Yes       No       Unknown

9. Does your department currently authorize the health and safety officer or assistant safety officers to self-dispatch to incidents when they are on-duty?

Yes       No       Unknown

(If yes, answer questions #9 through #12)

10. Please identify the types of emergency incidents that the health and safety officer or assistant safety officers are authorized to self-dispatch.

(Check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Auto Accident w/ Entrapment | <input type="checkbox"/> Hazmat Incidents           |
| <input type="checkbox"/> Boat or Ship Fire           | <input type="checkbox"/> Inside Gas Leak            |
| <input type="checkbox"/> CO Alarm w/ Symptoms        | <input type="checkbox"/> Plane Crash                |
| <input type="checkbox"/> Detonated Explosive         | <input type="checkbox"/> Structure Fire (all types) |
| <input type="checkbox"/> FD Vehicle Accident         | <input type="checkbox"/> Technical Rescue           |
| <input type="checkbox"/> FD Personnel Injuries       | <input type="checkbox"/> Train Derailment           |
| <input type="checkbox"/> Flammable Liquid Storage    | <input type="checkbox"/> Water Rescue               |
| <input type="checkbox"/> Flammable Liquid Transport  |   |
| <input type="checkbox"/> Other (please specify):     |   |

11. Are the health and safety officer and the assistant safety officers in your department aware of the types of emergency incidents they are authorized to self-dispatch?

Yes       No       Unknown

12. Have the health and safety officer or the assistant safety officers in your department ever had a delayed response to an emergency incident because they were not part of an automatic dispatch complement?

Yes       No       Unknown

13. Have the health and safety officer or the assistant safety officers in your department ever failed to respond to an emergency incident because they were not part of an automatic dispatch compliment?

Yes       No       Unknown

14. Does your department have data available to support the effectiveness of the incident safety officer in reducing firefighter injuries on the scene of emergency incidents?

Yes       No       Unknown

15. Has the number of firefighter injuries been reduced in your department because of the deployment of an incident safety officer on the scene of emergency incidents?

Yes       No       Unknown

**APPENDIX B****Incident Safety Officer Questionnaire Results**

1. Which of the following most accurately describes your department?

Career	43%
Volunteer	
Combination	57%
Other	

2. Does your department follow NFPA 1521 – Standard for Fire Department Safety Officer?

Yes	100%
No	
Unknown	

3. Do you have a member of your department assigned as the fire department health and safety officer?

Yes	100%
No	
Unknown	

4. Do you have members of your department assigned as assistant safety officers?

Yes	86%
No	14%
Unknown	

(If yes, answer question #4)

5. How many members of your department are assigned as assistant safety officers?

1 – 3	
4 – 6	33%
7 +	67%

6. Do you have a dedicated fire department health and safety officer or assistant safety officer on-duty and available to respond to emergency incidents 24 hours/day?

Yes 71%  
 No 29%  
 Unknown

7. Is the health and safety officer or assistant safety officers in your department part of any automatic dispatch complement?

Yes 71%  
 No 29%  
 Unknown

8. Does your department have any written standard operating procedures or guidelines regarding the automatic dispatch of an incident safety officer?

Yes 57%  
 No 43%  
 Unknown

9. Does your department currently authorize the health and safety officer or assistant safety officers to self-dispatch to incidents when they are on-duty?

Yes 100%  
 No  
 Unknown

(If yes, answer questions #9 through #12)

10. Please identify the types of emergency incidents that the health and safety officer or assistant safety officers are authorized to self-dispatch.

(Check all that apply)

Auto Accident w/ Entrapment	100%	Hazmat Incidents	100%
Boat or Ship Fire	100%	Inside Gas Leak	100%
CO Alarm w/ Symptoms	100%	Plane Crash	100%
Detonated Explosive	100%	Structure Fire	100%
FD Vehicle Accident	100%	Technical Rescue	100%
FD Personnel Injuries	100%	Train Derailment	100%

Flammable Liquid Storage	100%	Water Rescue	100%
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Flammable Liquid Transport	100%
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Other (please specify):

11. Are the health and safety officer and the assistant safety officers in your department aware of the types of emergency incidents they are authorized to self-dispatch?

Yes	100%
No	
Unknown	

12. Have the health and safety officer or the assistant safety officers in your department ever had a delayed response to an emergency incident because they were not part of an automatic dispatch complement?

Yes	57%
No	29%
Unknown	14%

13. Have the health and safety officer or the assistant safety officers in your department ever failed to respond to an emergency incident because they were not part of an automatic dispatch compliment?

Yes	57%
No	14%
Unknown	29%

14. Does your department have data available to support the effectiveness of the incident safety officer in reducing firefighter injuries on the scene of emergency incidents?

Yes	43%
No	43%
Unknown	14%

15. Has the number of firefighter injuries been reduced in your department because of the deployment of an incident safety officer on the scene of emergency incidents?

Yes	29%
No	71%