

Determining the areas of improvement where the Gastonia Fire Department
can better prepare firefighters to become Company Officers.

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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 writings of another.

Signed:

igned

A handwritten signature in black ink, appearing to be "J. C. Allen", written over a horizontal line.

Abstract

In the spring of 2014, the Gastonia Fire Department (GFD) changed its promotional process for Fire Captain. The requirements to have an Associate Degree in Fire Protection and North Carolina Fire Officer One certification were added for candidates taking the promotional exam. Even with these changes, several deficiencies have been noticed in newly promoted Company Officers. The descriptive research methodology was used to answer the following research problem. How can the GFD better prepare fire firefighters to become Company Officers? To accomplish this goal, I have identified three questions as foundational inquiries in descriptive research of this training and development program.

1. What national standards should be included in the development of a Company Officer?
2. What components do other fire departments in relation to size and or mission in North Carolina use to develop their organization's Company Officers?
3. What are the components that members of the Gastonia Fire Department believe should be included in the development of Company Officers?

To address the problem of Company Officer development, the GFD chose to assess the way the Department prepares firefighters to transition to an officer's role and to establish competencies, procedures, and skill levels that meet best industry practices and standards nationally. A thorough literature review was conducted. Also, questionnaires were sent out to other fire departments across the state of NC and to the officers of the GFD referencing training and development related to the position of Company Officer. Recommendations from this research include developing a Company Officer development program and annual refresher training for current Company Officers.

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Determining the areas of improvement where the Gastonia Fire Department can better prepare firefighters to become company officers.

The position of Company Officer is the most significant position of a fire company. The duties of this position require a high level of training and skill. In today's fire service, Company Officers are in the "people business" (IFSTA, 1998). In most organizations, the majority of a Company Officer's time is spent on managing and interacting with people, not making decisions on an emergency scene. The Gastonia Fire Department (GFD) identifies one position related to a Company Officer. This is the rank of Fire Captain (Appendix C). The member of this company in this position has the primary responsibility of managing the daily operations of a fire company at the station and on emergency scenes. The Fire Captain oversees a Fire Engineer and two Firefighters.

In the spring of 2014, the GFD revised its testing requirements for the position of Fire Captain. In previous years, the requirements for this position were that a candidate only had to complete a Fire Officers Candidate Program, which consisted of eight Fire Protection Associate Degree level classes. There was no requirement for formal education or any state Fire Officer Certification. The internal working duties of a Fire Captain were acquired either by on the job training or mentoring from other company officers. The organization determined that these requirements were no longer efficient in preparing firefighter candidates to transition into the role of a Company Officer. In 2014, the testing requirements were altered to include the requirement of a two year Associate Degree in Fire Protection and possession of the North Carolina Fire Officer One certification. Even with these changes in the Fire Captain promotional process, the department still recognized several operational deficiencies in newly promoted officers. The research problem is that, with these changes in the test requirements of Fire

Captain, the GFD does not have an efficient and effective program to prepare firefighters to become company officers and meet nationally accepted industry best practices and standards. With these company officers not reaching their full potential, this could compromise firefighters' safety, employee morale, and their effectiveness as supervisors (Broman, 2017). The purpose of this applied research paper is to examine the training, and nationally recommended Knowledge Skills and Abilities (KSA) the Gastonia Fire Department can utilize to better prepare firefighters to transition to company officers.

To accomplish this goal, the GFD chose to assess the Department's ability to establish competencies, procedures, and skill levels that meet nationally accepted industry best practices and standards. This researcher used descriptive research to answer the following questions:

1. What national standards should be included in the development of a Company Officer?
2. What components do other fire departments in relation to size and or mission in North Carolina use to develop their organization's Company Officers?
3. What are the components that members of the Gastonia Fire Department believe should be included in the development of Company Officers?

Background and Significance

The City of Gastonia was founded in 1877 and is the 13th largest city in the state, located in western North Carolina. The city's demographics include a total area of approximately 54 square miles and a population of 76,000 people. There are nearly 33,500 buildings in the city, of which 29,000 are single-family dwellings and apartment units.

The Gastonia Fire Department was started in 1901 and is a nationally accredited organization with an Insurance Service Organization (ISO) rating of two. The department was organized in 1901 and currently has 143 authorized positions to carry out its mission of

protecting the lives and property of its citizens. The department is organized into four divisions: Administration, Operations, Training, and Life Safety.

The Operations Division consists of three shifts. Each shift has assigned staffing of 44 members per shift with minimum staffing of 36 personnel on duty at all times. Each shift has two Battalions. The Battalions are divided geographically- East and West. Each Battalion consists of four stations and five companies under the supervision of a Battalion Chief. Stations are strategically located throughout the city. GFD companies responded to 11,183 calls for service in 2017, with 82 of these being structure fires.

All of the city's fire companies are assigned four personnel each. The crew consists of one Fire Captain, one Fire Engineer, and two Firefighters. The Fire Captain oversees the day to day operations of the fire company. These include administrative duties and emergency scene operations. "Contrary to popular belief, all the necessary knowledge and skills don't come in the white hat when the individual is promoted" (Murgallis, 2018, p.xii). The issue that has been noticed with newly promoted company officers in the GFD is the lack of knowledge in the administrative duties, risk assessment, and situational awareness. To further compound the urgency of this issue, within the next two to four years, the GFD will see a significant change in its company officers, due to upcoming retirements 12 of the departments 30 company officers will be new to the position. So, in four years, 40% of the department's company officers will have less than three years of experience in that position. This upcoming change in company leadership will have a direct impact on the organization, both on the interworking of the department and its ability to provide the best service possible to the citizens of Gastonia.

Between January 1998 and December 2008, National Institute for Occupational Safety and Health (NIOSH) in a report titled *Preventing Deaths and Injuries of Fire Fighters using Risk*

Management Principles at Structure Fires investigated 84 trauma injuries at structure fires where 118 firefighters were killed, and 126 were injured. Sixty Two of the incidents occurred at structures that were known or suspected to be unoccupied (National Institute for Occupational Safety and Health [NIOSH], 2010). Nine firefighters perished in 2008 while engaging in firefighting operations in a large commercial building. Three of these firefighters were company officers. Some of the mistakes that contributed to their deaths were the lack of knowledge and understanding of risk management and situational awareness (NIOSH, 2009). Two of the recommendations from the NIOSH report relates directly to the position of the company officer.

- The Fire Departments should ensure that the Incident Commander continuously evaluates the risk versus gain when determining whether the fire suppression operations will be offensive or defensive.
- Fire Departments should train firefighters to communicate interior conditions to the Incident Commander as soon as possible and to provide regular updates.

In November 2018, NIOSH released a report where three firefighters were killed, and four more were injured in a floor collapse in a row house (NIOSH, 2018). The NIOSH report stated that three of the contributing factors were:

- Lack of scene size-up and risk assessment
- Inappropriate fire ground tactics for a below grade fire
- Lack of professional development for fire officers and firefighters

These examples alone show the importance of why the GFD should ensure that all its company officers receive the best training possible and that this training meets suggested best industry practices and nationally accepted standards. In order for a company officer to meet and

overcome the challenges presented, it is imperative he fully understands the position (Page, 1973). It is part of the command staff's obligation and responsibility to guarantee that all members of the organization have the highest skills possible to mitigate the possibility for accident or emergency. The goal of this applied research project is to meet the course curriculum goal of Executive Analysis of Fire Service Operations in Emergency Management (EAFSOEM) by identifying what lessons were learned from previous incidents and LODD and apply this information to future fire service officers, so they are able to efficiently and effectively mitigate such incidents in their jurisdictions. This research is in line and meets Goal Three of the United States Fire Administration (USFA) (Administration, Strategic Plan 2014-2018, 2014) strategic plan of "Enhance the Fire and Emergency Services' Capability for Response to and Recovery from All Hazards" (p.9).

Literature Review

The literature review process started at the National Fire Academy Learning Resource Center (LRC) in July 2018. The purpose of this inquiry was to gather information in two distinct capacities: What is the nationally accepted standard that relates to the development of a Company Officer? What are the nationally accepted best industry practices for the basic knowledge required to be a Company Officer? The information collected for literature review included National Fire Protection Standards (NFPA), National Fire Academy (NFA) Executive Fire Officer (EFO) Applied Research Papers, professional based textbooks, and professional based journals.

The NFPA has a standard that directly relates to the position of Company Officer. This standard addresses the minimum job knowledge and skills expected of Company Officers. The information available in this standard can set the initial point for an organization in developing

the position of Company Officer. NFPA 1021 *Fire Officer Professional Qualifications* identifies what the minimum job performance requirements (JPR's) are for serving as a Fire Officer (NFPA, 2014, pp. 1021-6). This standard covers the requirements for the four levels of fire officer progression, which are: Fire Officer One, Fire Officer Two, Fire Officer Three, and Fire Officer Four (NFPA, 2014). NFPA 1021 also address the firefighter level two skills requirements stated in NFPA 1001 *Fire Fighter Professional Standard* and fire instructor requirement stated in NFPA 1041 *Standard for Fire Service Instructor Professional Qualifications* to become a fire officer. The JPR's in Fire Officer One and Two address the recommended knowledge of a Company Officer.

NFPA 1021 (2014) Chapter Four covers the general requirements of a Fire Officer One. The candidate at this level should meet the requirements of Firefighter 2 as stated in NFPA 1001 *Professional Standard for Firefighter* and NFPA1041 *Professional Standards for Fire Service Instructors*.

NFPA 1021 outlines the Fire Officers ability in six specific areas of JPRs. These skills ensure that Company Officers have an understanding and are proficient in these abilities. These six areas are defined in Table 1.

Table 1

NFPA 1021 Chapter 4

Human Resources	Community and Government Relations
Administration	Inspection and Investigation.
Emergency Service Delivery	Health and Safety

NFPA 1021 4.2 addresses the area of Human Resource Management. The recommended essential skill components are the ability to accomplish goals in relation to safety plans, crew members' performance evaluations, and supervising crew members in an emergency and non-emergency environments. This area addresses the importance of verbal communications being complete, clear, concise, and that safety considerations and desired outcomes are conveyed, while under stressful conditions (NFPA, 2014, p.1021-7).

NFPA 1021 4.3 addresses the areas of Community and Government Relations. NFPA states, "This duty involves dealing with inquiries of the community and communicating the role, image, and mission of the department to the public" (NFPA, 2014, p.1021-8). This community relations area is becoming increasingly more imperative, with many departments shifting their traditional fire prevention programs into more of a community risk reduction approach. Section 4.4 in this chapter covers the areas of Fire Administration. This gives the JPRs requirements for a Fire Officer to conduct administrative functions required and the implementations of departmental policies and procedures at the single unit company level (NFPA, 2014).

The duties of Inspections and Investigations are covered in NFPA 1021 4.5. Issues addressed are the Fire Officers performance of duties in being able to secure, collect evidence, and

conclude the preliminary cause of a fire. Also covered is the Fire Officers JPRs when conducting inspections and being able to identify and address any found hazards in the 11 occupancy types listed below.

- Assembly
- Educational
- Health Care
- Detention and Correctional
- Residential
- Mercantile
- Business
- Industrial
- Storage
- Unusual Structures
- Mixed Occupancies

NFPA 1021 4.6 outlines the minimum requirement for Fire Officers in Emergency Services Delivery. Even though this is just a small part of a Company Officers job, it is the most important. The ability of a Fire Officer to make sound decisions and direct subordinates in a stressful emergency environment is paramount to the success of any fire service organization. NFPA 1021 4.6 breaks these JPRs into three areas- emergency operations, conducting pre-incident planning and deploying assigned resources in accordance with the local emergency plan (NFPA, 2014). A Fire Officer should have the KSA to rapidly access an emergency situation and develop an Incident Action Plan (IAP), utilizing the local Authority Having Jurisdiction (AHJ) policies and procedures to be able to mitigate the incident. Once the incident is mitigated, a post-incident analysis should

be completed using the basic elements of building construction, fire protection systems, water supply, fire loading, fire behavior, and firefighting tactics (NFPA, 2014). Using the AHJ policies and procedures, this post-incident analysis should be used by the fire service organization to look for areas of improvement on the fire services they provide. To fully develop their new skills, officers need to be acclimated to all facets of the department (Foley, 1993).

The last of the skills areas covered by NFPA 1021 is 4.7 Health and Safety. These JPRs involve integrating health and safety plans, policies and procedures into the department's daily duties, as well as the emergency scene (NFPA, 2014). Applying safety at the unit level is a proactive approach where the AHJ policies and procedures relating to health and safety are accomplished by proper safety inspections of personal protective equipment and employee's work environment, both emergency and non-emergency, and any concerns are identified both in written and oral form and corrected. The member's responsibilities are also conveyed.

The literary review process also assembled information on nationally accepted best industry practices related to the position of Company Officer. In collecting this data, nationally recognized fire service training manuals, trade journals, and National Fire Academy EFO applied research papers relating to Company Officers provided key concepts. The training manuals examined include *Company Officer's Handbook*, *Fire Officer Principles, and Practice*, *Effective Company Command*, *Fire Department Company Officer* and *International Fire Chiefs Officer Development Handbook*. These training manuals identify the basic job knowledge and requirements of the position of Company Officer based on nationally accepted best industry practices. It would be a mistake for Fire Chiefs to underestimate or undervalue the role that a company officer plays within the mission of the fire department (Compton, 2006)

The foundations of a fire department Company Officer practices came from combat experience in World War Two (Ward, 2015). Murgallis (2018) many departments train and give Company Officers the skills to be managers and supervisors, but most do not train their Company Officers to be leaders. This basic knowledge should be the starting point of any Company Officer development and training program. Additional areas covered by these manuals are Firefighting Strategy and Tactics, Building Construction, Pre-Incident Planning, Fire Behavior, and Leadership and Management Principles. By using these manuals as the basis for a Company Officer development and training helps to ensure Fire Officers have all the right tools to do the job.

The literature review process also included reviewing the research done by fire service leaders through Applied Research Papers (ARP) at the National Fire Academy. This allowed the researcher to compile and gather information on the components of other Fire Officers development programs from across the country. Broman (2017) showed in his research of 106 fire departments that the top seven topics that should be included in a company officer development program are: leadership (94%), conflict resolution (88%), incident command (83%), communication skills (83%), team building (69%), safety training (60%), and policy and procedures (57%). Broman (2017) said that the results were nearly identical to the internal survey that was given to members of his fire department. This information confirms what is seen as a growing need in the fire service. According to Sanders in his article, *Training is the Key to Future Success*, the need for officer development in the fire service is conveyed when he says, “Because an organization’s success depends on the knowledge, skills, and abilities of its future leaders, officer training is of paramount importance” (as cited in Kirin 1998). With the increasing public oversight on emergency services budgets and services provided, it is

imperative that fire service administrations take a proactive approach and guarantee that its' members have the KSA to perform their job duties. "Although on-the-job training may be enough to squeak by with, it does not provide the knowledge, skills, and abilities to be an effective leader" (Kirin, 1998, p. 5). There is no identified substitute for good mentoring, training and education.

In the state of North Carolina, the Office of State Fire Marshal (OSFM) is the organization directly charged with development and delivery of all fire service training in the state. OSFM has four certifications that involve the position of Fire Officer. They are: Fire Officer One, Fire Officer Two, Fire Officer Three, and Fire Officer Four. The Fire Officer One certification covers the KSA at the Company Officer level. These certifications were created "in a continued effort to reduce fire loss in the State of North Carolina, the state Legislature established General Statue 58-78-5.14b, which requires the State Fire and Rescue Commission to establish voluntary minimum professional qualifications for all levels of fire and rescue personnel" (OSFM, 2002).

The outlines for these classes are based on the NFPA 1021 *Fire Officer Professional Qualifications*. The practical course skills for Fire Officer One certification are represented in Table 2 below.

Table 2

N. C. Fire Officer 1 Practical Skills
Community Needs
Human Resources
Task Assignment
Budget Proposal

Organization Chart/Job Description
Concerned Citizen
Fire Inspection/Life Safety Education
Incident Action Plan
Safety Practices
Total Class Hours 36

The total number of hours required to achieve this certification is extensive, and the candidate must pass a proctored exam at the end of the class. The GFD requires that all firefighters must obtain this certification, have an associate degree in Fire Protection or Emergency Management, and five years of service to be eligible to take the Fire Captains' Exam. International Association of Fire Chiefs (IAFC) (2010) says that a Fire Officer's professional development takes place in three general ways: through experience, mentoring, and education. The education concept is gaining more prominence in the fire service. To become a GFD Captain, the candidate must possess an Associate Degree in Fire Protection. When dealing with experience as a development tool, one must use caution. "Experience can contribute to competency if it's designed to meet the requirements of the position" (IAFC, 2010, p. 12). "It can also produce the opposite effect when the individual gains experience by repeating ineffective practices" (IAFC, 2010, p.12). The GFD has become proactive with two of these concepts. Since there is no mentoring program, the GFD uses "on the job training" as a professional development tool, which has led to several operational deficiencies in its' Company Officers.

One overlooked, but an important, component of a Company Officer development program is to provide adequate training and understanding of situational awareness. The

research was conducted to address how people perceive this area. Situational awareness consists of the ability of a person to describe the situation, understand the situation, and make corrective decisions on the ability to accurately predict the situations future outcome (Lauder & Perry, 2014). The position of Company Officer is the most stressful position on the fire ground. Company Officers are required, at a moment's notice when they arrive on the scene and, in most cases, independently, to quickly gather and analyze the every changing emergency scene environment and make quick, sound, and correct decisions.

The literature review noted an ample amount of information about the required knowledge, skills, and abilities (KSA) that are recommended for the position of Fire Officer. Unfortunately, the NFPA standards, training manuals, and North Carolina Certifications are recommended best industry practices, yet are not enforceable by law. To correct these insufficiencies, the responsibility to assure that the Company Officer position is staffed with competent people rests solely with fire departments' administrations

Procedures

The information collected to answer research questions for this Applied Research Paper was obtained through literature review and a survey instrument. The researcher utilized descriptive research to obtain the data to answer the following questions:

1. What national standards should be included in the development of a Company Officer?
2. What components do other fire departments, in relation to size and or mission in North Carolina, use to develop their organization's Company Officers?
3. What are the components that members of the Gastonia Fire Department believe should be included in the development of Company Officers?

Extensive research I completed through NFA Learning Resource Center, NFPA standards, North Carolina OSFM, and Fire Service Training Manuals. The information obtained through the LRC was gathered from Executive Fire Officers (EFO) Research Papers written by fire service leaders pertaining to the position of Company Officer. This source allowed the researcher to view how these fire service leaders address the problems in their organizations. Also, numerous scholarly articles were studied on the topic areas of situational awareness and fire ground decision making.

The second part of the literature review process involved researching NFPA standards pertaining to the position of Fire Officer. This researcher utilized the NFPA in gathering this information. Of the NFPA standards reviewed, one had a direct correlation to the position of Fire Officer- *NFPA 1021 Standard for Fire Officer Professional Qualifications (2014)*. This standard set the recommended guidelines for the recommend KSA for a Fire Officer, which is key when developing a Company Officer development program. The major drawback of this standard is that it is only recommendations; they are not enforceable by any law unless adopted by the local AHJ.

The third part of obtaining information to answer the research questions was conducted by a review of fire service training manuals, fire service publications, and North Carolina OSFM Certification Program. This information was collected from *Company Officer's Handbook*, *Fire Officer Principles and Practice*, *Effective Company Command*, *Fire Department Company Officer and International Fire Chiefs Officer Development Handbook* *Fire Engineering* magazine and North Carolina Fire Officer One certification.

An electronic anonymous survey instrument was used to gather information relating to research. The website *Survey Monkey* was used to generate the questionnaire. Two

questionnaires were developed. The first one (Appendix A) was sent out to 30 Fire Captains, six Battalion Chiefs, and to the top five candidates on the current Fire Captain promotional list of the Gastonia Fire Department. The goal of this questionnaire was to discover what members of the organization felt were essential components of a Company Officer development program and what issues would have helped them in their transition to the role of Company Officer.

Ascertaining the feedback from a broad spectrum of the department's officers was key to ensure that all department operations are executed in the most effective and safe manner. The questionnaire contained ten questions with all multiple-choice answers. The respondents were able to choose numerous answers if they were appropriate. The questionnaire was distributed to the officers of the GFD using the City's internal e-mail system. This method of communication was chosen as the best avenue to ensure that all GFD officers had access to the questionnaire. The link to *Survey Monkey* and the purpose of the questionnaire was included in the e-mail. The survey was active for two weeks with 25 of 41 possible responses collected.

The second electronic questionnaire (Appendix B) was sent to 34 fire departments across the state of North Carolina. The GFD provides emergency services from eight fire stations, with ten fire companies manned by 132 operational based full-time employees. The fire departments that were chosen for this questionnaire were either relative in size and/or mission to the GFD. The questionnaire consisted of nine questions and the information that was collected during the literature review process aided in developing these three survey questions. The questions were all directed toward how these departments address the development of Company Officers in their organizations. The respondents were able to choose numerous answers they felt were significant. A total of 20 of these departments responded.

This questionnaire was distributed using the North Carolina Metro Chiefs contact list, Centralina Chiefs contact list, and e-mail addresses collected from internet searches. The link to *Survey Monkey* and the purpose of the questionnaire was included in the e-mail. The following 34 departments were sent this questionnaire: Wilmington, Durham, Wilson, Greenville, Charlotte, Raleigh, Chapel Hill, Burlington, Cary, Winston-Salem, High Point, Hickory, Carrboro, Kannapolis, Asheville, Concord, Lexington, Tarboro, Washington, Kinston, Fayetteville, New Hanover County, Morganton, Roanoke Rapids, Hendersonville, Lumberton, Newton, Stanford, Apex, Goldsboro, Statesville, Salisbury, Shelby, and Thomasville. A total of 20 out of the 34 departments responded — this equated to a 60% response rate.

Since Company Officers are required to perform their duties in a stressful environment, where they are required to quickly analyze and process information and make critical life and death decisions, the researcher obtained information on how people respond to these conditions. The scholarly articles titled *A Study Identifying Factors Influencing Decision Making in Dynamic Emergencies like Urban Fire and Rescue Settings* by D. Launder and C. Perry, *Moving from Situational Awareness to Decisions During Disaster Response: Transition to Decision Making* by Dr. J. Glick and Dr. J. Barbara, and *From Common Operating Picture to Situational Awareness* by E. Danielsson, A. Alvinus, and G. Larsson. The pressure on emergency personnel to make effective decisions is so strenuous that fire ground officers make 80% of their decisions in less than one minute (as cited by Launder and Perry, 2014). Glick and Barbara (2013) in their research showed five factors that are involved in making decisions in an emergency-“transition to decision making.” The five factors are listed below.

1. The Analog Factor: the decision maker’s previous knowledge and experience from similar emergency situations.

2. New Paradigm Factor: the degree to which the emergency situation is very atypical to the decision maker due to hazard type and or severity.
3. Data Capture Factor: the quality, amount, and the speed of the emergency situation information are collected by the decision maker.
4. The Data Integration Factor: the decision maker's ability to integrate situational data elements into a mental picture.
5. Time Urgency Factor: the decision maker's perception as to the amount of time available before a decision has to be made.

There has been a significant amount of information written about situational awareness on the fire ground, but when asked, many fire officers struggle to explain what it is or what it means (Gasaway, 2008). Just this statement alone addresses the importance of situational awareness and why it should be the main topic of discussion in any Company Officer development plan.

The greatest weakness of using an internet-based website such as *Survey Monkey* to create and distribute a questionnaire where the outcomes are based on the individuals contacted to take the initiative to read and complete the questionnaire. Another noted limitation to the questionnaire is the respondents' job knowledge and experience. The first questionnaire (Appendix A) was sent to the officers and the top five candidates on the Fire Captain's promotional list in the GFD. Only 25 of 41 members responded to the questionnaire. This level of response indicates that only 60% of the individuals responded. The lack of response could be that the questionnaire was sent to six Battalion Chiefs, 30 Captains, and the top five promotional candidates who feel this questionnaire is not of interest, due to them already being promoted to Fire Captain in the GFD or they feel they already had the KSA when they were promoted to Fire

Captain. The second questionnaire (Appendix B) was sent to fire departments across the state of North Carolina that are similar in size and or mission to the GFD. Twenty out of the 34 departments contacted responded. This accounts for a total of 60% response rate. The response rate can be attributed to the questionnaire being sent out to Chief Officers who understand the importance of Company Officer development.

Results

The results of this ARP were gathered from the literature review, internet searches, and by using an electronic survey instrument. This information provided the researcher insight into answering each of the following research questions.

The first research question: What national standards should be included in the development of a Company Officer? The literature review process uncovered one NFPA standard that relates to Company Officers in training, education, and job requirements as being NFPA 1021 *Fire Officer Professional Qualifications* (2014) and IAFC *Fire Officer Development Handbook* (2010). NFPA 1021 standard sets the minimum JPRs that are required to fire department officer. The NFPA 1021 divides the duties of a fire officer into four areas. They are: Fire Officer One, Fire Officer Two, Fire Officer Three, and Fire Officer Four. The JPRs for a Company Officer are located in chapter 4 of the Fire Officer One requirements. “The purpose of this standard shall be to specify the minimum job performance requirements for serving as a fire officer” (NFPA, 2014, p. 1021-6). The standard identifies the minimum JPRs for the various types of duties that a Company Officer encounters in their fire service organizations. They are broken down into the following six job duty areas:

- Human Resource Management
- Community Government Relations

- Administration
- Inspections and Investigations
- Emergency Service Delivery
- Health and Safety

These job knowledge areas are outlined and utilized in N.C. Fire Officer One Certification hands-on practical exercises. The difficulty that is encountered with using this as a development tool, unless the Fire Officer One Certification is taught at the AHJ department, is the skills listed above may not be job specific to that fire service organization's daily practices. So, future fire officers may learn skills that are not relevant to their organization. "All of the standards for any level of fire officer shall be performed in accordance with recognized practices and procedures or as defined by an accepted authority," (NFPA, 2014, p. 1021-6).

The *Fire Officer Development Handbook* is the guideline that discusses recommendations for the development of fire officers that was developed by IFAC. Because of their position, fire officers have authority, and with that authority, they are expected to provide protection and directions as well as to maintain order (IAFC, 2013). IAFC Officer Development Handbook organizes development into four elements.

- Education
- Learning
- Experience
- Self-Development

In these four elements, the IAFC classified the first two critical and merited special attention (IAFC, 2010). The IAFC illustrates that a firefighter, early in their career, is more

centered on skills training and, as their career grows, they shift to more emphasis on education. “The professional development process is lifelong, so the initial achievement is not sufficient to meet the challenges of the fire and rescue service leaders” (IAFC, 2010, p. 14).

Additional information was obtained to answer this research question through a comprehensive search of fire service training manuals, publications, NFA EFO papers, and the NC Fire Officer One certification program. Locating this material allowed the researcher to obtain nationally accepted best industry practices for the position of Company Officer. This research information provided a basic foundation to establish the specific KSA needed by an effective Company Officer. A significant number of sources recommend each agency develop an effective Company Officer development program; these recommendations should be followed. By doing so, this knowledge, training, and experience would help to ensure the Company Officer has a base competency to accomplish the job. A Company Officer development program is not only for those who aspire to become fire officers but for current fire officers who want to maintain their KSA (Broman, 2017).

The second research question: What components do other fire departments in relation to size and or mission in North Carolina use to develop their organizations' Company Officers? To assemble this information, an electronic questionnaire (Appendix B) was sent out to fire departments across the state of North Carolina. The fire departments chosen for this questionnaire were either similar in size and/or mission to the GFD. The questionnaire consisted of 10 questions. The information gathered during the literature review process assisted in developing these questions. The questions were all directed toward the position of Company Officer. Depending on the responding organizations rank structure, this could be either a Fire Captain or Fire Lieutenant position.

The questions addressed issues relating to a Company Officer development. The respondents were able to choose numerous answers they felt were applicable. There was a 60% response rate with 20 of the 34 departments responding to this questionnaire (Appendix B). This research showed that 40% had some type of Company Officer development program. The question was asked if you don't have a development program would your organization benefit from one? The response to this question was 100% yes. In the organizations that had a Company Officer development program, the two areas that were addressed the most were leadership styles at 41.67% and communications skills at 16.67%. The importance of leadership development can be stressed when Company Officers, in their strive to be liked, sometimes compromise their values and allow subordinates to take advantage of them (Priziborowski, 2016). Starting in 2018, the GFD increased the education requirement to become a Company Officer. A candidate testing for the position must have an Associate Degree in Fire Protection or Emergency Management. In the external question response, only 47% of the responding departments have this requirement, with 52% not having any educational requirements. This response shows that the GFD is proactive in requiring formal education for its Company Officers. Also, 75% require yearly continuing education for Company Officers. GFD does not require any mandatory yearly continuing education training for Company Officer. This has become an issue in the GFD since the only additional officer training you receive once you're promoted on the job training or unofficial mentoring by a senior Company Officer. The responses showed that 44.44% of the departments require their Company Officers to have the NC Fire Officer One Certification, while 50% required that their Company Officers have both NC Fire Officer One and Two Certifications. GFD currently only requires NC Fire Officer One

certification to become a Company Officer and NC Fire Officer Two to become a Battalion Chief.

The third research question: What are the components that members of the Gastonia Fire Department believe should be included in the development of Company Officers? The questionnaire (Appendix A) was sent out to all Fire Captains, Battalion Chiefs, and the top five candidates on the current Fire Captain promotional list. The results of this questionnaire were to discover what current and future fire officers of the organization felt were relative components of the Company Officer development and how such a program would have helped them in their transition to that role. Getting the feedback from officers of the organization was critical because all officers, from the newest Fire Captain to senior Battalion Chief, have the responsibility to ensure that all fire department officers are given the right tools for success in the organization.

This questionnaire contained ten questions with several multiple-choice answers. The respondents were able to choose numerous answers if they were appropriate. The questionnaire was distributed to the members of the GFD using the City's internal e-mail system. The questionnaire was active for two weeks with 25 of 41 of the department's officers responding; this shows only a 60% response rate. The questions were used to ascertain feedback from the officers of the GFD, to see how they feel the department addresses the area of Company Officer development. Ninety-two percent of the responses felt the department does not adequately prepare its members to become Company Officers, with a response of 96% of the fire officers saying that a Company Officer development program would have benefited them in transitioning into that role. In one response, 87.50% would like to see more hands-on training with administrative duty requirements for Company Officers. This corresponds with NFPA 1021 *Fire*

Officer Professional Qualifications, which in section 4.4 recommends the officer should be able to execute routine unit-level administrative functions in the organizations (NFPA, 2014).

There was a 100% response rate from the responding officers, pertaining to a Company Officer development program that parallels our current Firefighter Relief/Driver program. This is a six-eight day class that was started in 2005 to prepare our firefighters to drive and operate our fleet of fire apparatus. This class has been very successful in the development of our Firefighter Relief/Drivers and Fire Engineers. This clearly shows that officers of the GFD feel that a Company Officer development program is needed and should follow the footprint of this training program. The responses provided by this questionnaire provided excellent feedback on what the members of the GFD feel about the department's ability to prepare future fire officers. This information can be used to ascertain what components should be included in preparing members to become Company Officers.

Discussion

The findings of this research draw a parallel with the results of others that were identified in the literature review on the knowledge, skill, and abilities of Company Officers. The GFD study shows the importance of experience, job skills, job knowledge, and training that should be implemented for individuals aspiring to become Company Officers. Of the departments across the state that were sent the questionnaire, 94.44% of them require the position of Company Officer to have the NC Fire Officer One Certification, and 50% of these responding departments require both NC Fire Officer One and Two certifications. Seventy-five percent of the responding departments have yearly continuing education requirements for their Company Officers. The GFD currently does not have any yearly officers training.

In the questionnaire of departments across North Carolina, of the fire service organizations that did not have a Company Officer development program, 100% responded by saying their organization would benefit from such a program. De Leon (2014) showed in his research that out of the organizations who responded, that did not have a development program, 89.9% of them stated an officer development program would have a positive impact in their organizations. There was a 100% response rate in the internal questionnaire, where officers of the GFD felt that a Company Officer development program would benefit current and future fire officers in the GFD. “Developing competent and confident company officers will ultimately benefit the employees, the organization, the community, and the citizens while simultaneously improving the fire service” (De Leon, 2014 p. 28).

The NFPA addresses and has developed standards that cover the responsibility and duties of Fire Officers. The goal of the NFPA is to ensure that a baseline is set on the KSAs that are required for this important position. The importance of following the recommendations of the NFPA cannot be overstated. *NFPA 1021 Fire Officer Professional Qualifications* identifies the minimum JPRs for the various types of fire officer duties in the areas of Human Resources, Community & Government Relations, Administration, Inspections and Investigations, Emergency Operations and Health and Safety. In addition, NFPA 1021 1.3.5 p.1021-6 states, “The fire officer at all levels of progression shall remain current with the general knowledge and skills and job performance requirements addressed in the level of qualification.”

One of the most critical responsibilities of any Company Officer is the delivery of training and skill development for their subordinates. If the company officer stays competent and ensures that their crew receives the appropriate training, they will be exceptional in the performance of their duties (Compton, 2006). The goal of the NFPA 1021 standard is to ensure personnel meets

the KSA required to function as a Company Officer (NFPA, 2014). By following these recommendations, the organization shows due diligence in making sure firefighters are trained and prepared to become Company Officers.

In the questionnaire response from other departments across the state, 94.44% require their Company Officers to have the NC Fire Officer One Certification with 50% requiring their Company Officers to have the NC Fire Officer Two Certification. NCOSFM Fire Officer Certification is based on the JPRs of NFPA 1021- any organization that requires this certification will ensure that its' Company Officers meet the basic JPRs recommendations of NFPA 1021.

IAFC Officer Development Handbook was first developed in 2004 with the purpose to provide a clear roadmap for success for a fire/emergency service officer (IAFC, 2010). IAFC breaks down the three areas of development. They are

- Education at 10%
- Mentoring at 20%
- Experience 70%

The problem with experience being the building block in officer development is that it should be legitimate and not just years of service. “The practice of on-the-job training, rather than systematic skills building and preparation, is unlike the methodologies employed by virtually any other profession” (IAFC, 2010 p. 2). In response to the questionnaire that was sent to departments across the state, 100% of the departments that do not currently have a Company Officer development program feel their organizations would benefit from such a program. This corresponds with the response given in the internal questionnaire sent to officers of the GFD, where 92% feel the GFD does not prepare firefighters to become Company Officers and 100% feel that

a Company Officer development program is needed by the GFD. Schabbel (2001) showed in his research that many fire departments have begun to see the importance of developing their Company Officers, of the departments questioned, 87% either had a program or believed it was needed (Schabbel, 2001). This research also confirms Schabbel's findings. Of the officers responding to the questionnaire, 100% felt that there is a need for such a program in the GFD.

The information that was gathered from the literary review of fire service training manuals, fire service publications, NFA EFO research papers, and North Carolina OSFM Fire Officer Certification Program, this information should be used in the development of lesson plans for instructional purposes when creating a Company Officer development program. Where the NFPA standards address the broad JPRs that are recommended for Fire Officers, these manuals and publications address in detail the required skills to be proficient Fire Officers. Since the roles and responsibilities of a fire officer differ from a firefighter, understanding the new role is essential for the new fire officers to succeed (Ward, 2015).

The research information that was collected shows the importance of the position of Company Officer. By starting at this first level of supervision, a foundation of success will be created, and future opportunities can be built upon by starting at this lesson (Broman, 2017). From a Company Officer development standpoint, there is a considerable amount of consistent data outlining the critical job duties requirements that firefighters should be exposed to prior to being promoted to Company Officer. The data analyzed from the literature review and the questionnaires sent to the fire officers of the GFD and to fire departments across North Carolina show that the GFD meets national expectations in some areas and fall well short in others preparing firefighters to transition to Company Officers.

Recommendations

The purpose of the APR (Applied Research Project) is to examine the training and development of Company Officers using nationally recommended best industry practices so that the GFD can utilize them to prepare firefighters better to become Company Officers. After completing the research on published national standards and best industry accepted practices and reviewing the information obtained from the questionnaires sent to the fire officers of the GFD and other fire service agencies across North Carolina, it is recommended that the GFD should develop and implement a Company Officer development program for firefighters before they are promoted to Fire Captain. This Company Officer development program should mirror the GFD's current Firefighter/Relief Driver training program, which is instructed by current members selected by the GFD Training Division. With the information acquired from the internal questionnaire of current officers, the topics should include the following

1. Leadership styles and communications skills
2. Administrative duties required by a GFD Fire Captain
3. Firefighter strategy and tactics involving GFD guidelines
4. Situational awareness and risk management assessments
5. Fire Investigations
6. Expected roles and responsibilities of a GFD Fire Captain

Also, it is recommended that a yearly officers' training schedule be created for all existing Company Officers to ensure all officers are maintaining the required KSA to perform their required duties on a continual basis. As noted above, some of the most significant information gathered for this study came from national standards and questionnaires sent to the officers of the GFD and to departments across North Carolina. The feedback from department officers was

critical in getting a response on the need for a Company Officer development program and what the content of that program should include. By researching and finding the noted deficiencies, and by implementing these recommendations, the GFD will develop and prepare firefighters to become Company Officers that meet or exceed national standards and will provide the highest quality service available to the citizens of Gastonia, North Carolina.

References

- Broman, B. (2017). *Creating a foundation for success- company officer development*. Retrieved from U. S. Fire Administration: <https://nfa.usfa.fema.gov/pdf/efop/efo241392.pdf>
- Compton, D. (2006, April). *Exceptional company officers: how to set yourself apart*. *Firehouse*, p. 50.
- Danielsson, E., Alvinus, A., & Larsson, G., (2014). *From a common operating picture to situational awareness*. *International Journal of Emergency Management*, 20-47.
- De Leon, T. (2014). *Current and future officer development for the colorado springs fire department*. Retrieved from U.S. Fire Administration: <https://nfa.usfa.fema.gov/pdf/efop/efo48798.pdf>
- Foley, S. (1993, July) *Company officer development*. *Firehouse*: p.22
- Gasaway, R. (2008, November 1). *Developing and maintaining fireground command situation awareness*. Retrieved from *Firehouse*: <https://www.firehouse.com/safety-health/article/10495101/developing-and-maintaining-fireground-command-situation-awareness-part-1>
- Glick, J., & Barbara, J. (2013). *Moving from situational awareness to decisions during disaster response: Transition to decision making*. *Journal of Emergency Management*, pp423-432.
- IAFC. (2010). *Officer Development Handbook*. Fairfax, VA: International Association of Fire Chiefs.
- Kirin, D. (1998). *Professional development needs of fire service officers in the oberlin fire department*. Retrieved from U.S. Fire Administration: <https://nfa.usfa.fema.gov/pdf/efop/efo28667.pdf>

- Lauder, D., & Perry C. (2014). *A study identifying factors influencing decision making in dynamic emergencies like urban fire and rescue settings. International Journal of Emergency Services*, pp. 144-160.
- Murgallis, R. P. (2018). *Company officer's handbook*. Stillwater, OK: Oklahoma State University.
- National Fire Protection Association 1001. (2014). *NFPA 1001 Fire fighter professional qualifications*. Quincy, MA: National Fire Protection Association.
- National Fire Protection Association 1021 (2014). *NFPA 1021 Standard for fire officer qualifications*. Quincy, MA: National Fire Protection Association.
- National Fire Protection Association 1041 (2012). *NFPA 1041 Standard for fire service instructor professional qualifications*. Quincy, MA: National Fire Protection Association
- NIOSH. (2010, July). *Preventing deaths and injuries of firefighters using risk management principles at structure fires*. Retrieved from Center for Disease Control and Prevention: <https://www.cdc.gov/niosh/docs/2010-153/pdfs/2010-153.pdf>
- NIOSH. (2018, November). *Arson fire kills three firefighters and injures four firefighters following a floor collapse in row houses*. Retrieved from Center for Disease Control and Prevention: <https://www.cdc.gov/niosh/fire/pdfs/face201618.pdf>
- NIOSH. (2009, February). *Nine career firefighters die in rapid-fire progression at a commercial furniture showroom*. Retrieved from Center for Disease Control and Prevention: <https://www.cdc.gov/niosh/fire/pdfs/face200718.pdf>
- Omodei, M. (2009). How Human Factors Drive Decisions at Fire Ground Level. *Fire Note*.
- OSFM. (2002, October 1). *NCDOI Certification and Training*. Retrieved from NC Fire Officer Certification: <http://www.ncdoi.com>
- Page, J. O. (1973). *Effective company command*. Alhambra, CA: Borden Publishing Company.

Priziborowski, S. (2016, August). *10 commandments of an effective company officer*. Firehouse: pp. 42-46.

Schabbel, T. (2001). *Evaluating the need for an officer development program*. Retrieved from United States Fire Administration: <http://nfa.usfa.fema.gov/pdf/efop/efo47272.pdf>

Thomason, M. (2009, September). How Human Factors Drive Decisions at Fire Ground Level. *Fire Note*.

U.S. Fire Administration (2014). *Strategic plan 2014-2018*. Emmitsburg MD: United States Fire Administration .

U.S. Fire Administration (2016). *Executive analysis of fire service operations in emergency management*. Emmitsburg MD: United States Fire Administration

Ward, M. J. (2015). *Fire officer principles and practice (3rd ed.)*. Burlington, MA: Jones & Bartlett Learning.

Appendix A

Pre-Incident Survey (Internal)

- 1) What is your years of service in the organization?
 - a) 6-10 years
 - b) 11-15 years
 - c) 16-20 years
 - d) Over 20 years
- 2) What is your rank in the organization?
 - a) Fire Captain
 - b) Chief Officer
- 3) Do you feel that the organization properly prepares members to become company officers?
 - a) Yes
 - b) No
- 4) If no, in what areas does the organization needs to improve on? You can choose more than one answer.
 - a) Fire ground operations
 - b) Leadership styles and leadership development
 - c) Fire Officer roles and responsibilities
 - d) Building construction
 - e) Ethics
 - f) Conflict resolution
 - g) Communications skills
 - h) Risk assessment/Situational awareness

- 5) Should the GFD offer an internal company officer development program to its members, similar to its current Relief Drivers Class?
- a) Yes
 - b) No
- 6) Do you feel that an officer development program would have benefited you in your promotion to a company officer
- a) Yes
 - b) No
- 7) Should the GFD have more of a defined policy on who fills in as an "acting" company officer?
- a) Yes
 - b) No
- 8) In observing our department's company officers, rank the areas you feel the organization's company officers are the most proficient in?
- a) Emergency Operations
 - b) Supervision in non-emergency situations (at the station)
 - c) Enforcing department policies
 - d) Company training
 - e) Administrative duties (Fire reports, Department records, Evaluations)

- 9) In observing our department's company officers, rank the areas you feel the organization's company officers need improvement in?
- a) Emergency Operations
 - b) Supervision in non-emergency situations (at the station)
 - c) Enforcing department policies
 - d) Company training
 - e) Administrative duties (Fire reports, Department records, Evaluations)
- 10) Any additional comments?

Appendix B

Pre-Incident Questionnaire (External)

- 1) What is the size of your organization?
 - a) 0-50 FTE
 - b) 51-100 FTE
 - c) 101-150 FTE
 - d) 151-Greater FTE
- 2) What best describes your organization?
 - a) Fully Paid
 - b) Combination
 - c) Other
- 3) Do you have an internal company officer development program?
 - a) Yes
 - b) No
- 4) If no to question #3, do you feel your organization would benefit from having such a program?
 - a) Yes
 - b) No
- 5) If yes to question 3, what components do you include in your program?
 - a) Fire ground operations
 - b) Leadership styles and leadership development
 - c) Fire Officer roles and responsibilities
 - d) Building construction
 - e) Fire department record keeping

- f) Ethics
 - g) Conflict resolution
 - h) Communication skills
 - i) Risk assessment/Situational awareness
- 6) Do you require your company officers to have NC Fire Officer Certification?
- a) Fire Officer 1
 - b) Fire Officer 2
 - c) Both certifications
- 7) Do you have formal education requirements for the position of company officer?
- a) No education requirements
 - b) 2-year degree
 - c) 4-year degree
- 8) Is there yearly required continuing education training for your company officers?
- a) Yes
 - b) No
- 9) Any other comments

Appendix C

**FIRE CAPTAIN - 681
(SHIFT)****GENERAL DEFINITION OF WORK:**

Performs responsible protective service work in fire suppression and prevention; does related work as required.

Work often is performed under emergency conditions and frequently involves considerable personal hazard. Work involves responsibility for the supervision, discipline, and training of a fire company, the total operation of a fire station on an assigned shift; work is performed under regular supervision. Supervision is exercised over fire personnel on the assigned shift.

TYPICAL TASKS:

1. Response to fire alarms and other emergency calls assigned to the company; makes decisions as to methods and requirements for combating fires; directs firefighting activities until relieved by a superior officer;
2. Instructs subordinate fire personnel in work assignments and procedures;
3. Supervises and participates in interior firefighting under strenuous and adverse working conditions;
4. May be assigned to serve as acting Battalion Chief in latter's absence;
5. Supervises and assists in the work of extinguishing fires and performing related life and property protection;
6. Supervises the upkeep of apparatus and equipment;
7. Supervises and conducts fire preplanning within fire districts;
8. As station commander, plans and supervises the maintenance of the station and grounds;
9. Supervises and participates in fire company training in all phases of firefighting and rescue;
10. Keeps records and makes reports;
11. Instructs in training programs and drills;
12. Evaluates work of subordinates;
13. Work may require additional training and associated duties for assignment to the Hazardous Materials Response Team.
14. Performs other tasks as required.

KNOWLEDGE, SKILLS, AND ABILITIES:

General knowledge of the principles and practices of fire prevention and suppression; general knowledge of departmental rules and regulations; general knowledge of local geography, fire hazards and firefighting; general knowledge of equipment and apparatus; working knowledge of supervisory principles and practices; ability to effectively supervise others at fires and other emergencies; possession of physical endurance and agility.

EDUCATION AND EXPERIENCE:

Possess a minimum of an Associate's Degree in a fire-related field, N.C. Firefighter Certification, N.C. EMT certification, N.C. Driver/Operator Certification (1002), EVD (Emergency Vehicle Driver), Pumps, Aerial, Gastonia Fire Department qualified backup driver, Training equivalent to Fire Instructor I, Five (5) consecutive years in grade as either a Driver/Engineer and/or Firefighter with the City of Gastonia Fire Department

SPECIAL REQUIREMENTS:

- State certifications as FF/EMT/Driver Operator/FO I.
- Possession of a valid appropriate driver's license.