

Developing a post-incident analysis program for the City of St. Pete Beach Fire Department

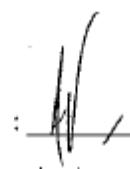
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Certification Statement

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.

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Date: _1/17/2017_____

Abstract

A post-incident analysis is an important tool in the fire service especially as incidents such as structure fires became less common. The problem was that the St. Pete Beach Fire Department (SBFD) did not have a post-incident analysis program. The purpose of this research was to develop a post-incident analysis program that could be utilized within the St. Pete Beach Fire Department. Action research was utilized to answer the following research questions: (a) what are the necessary components of a post-incident analysis program? (b) how are post-incident analysis programs administered and utilized within fire departments with similar resources? (c) what recommendations can be made in regards to a post-incident analysis program within SBFD? Procedures included: (a) analysis of discovered local and national policies and standards in regards to post-incident analysis, (b) electronic survey distributed to departments with similar resources, (c) electronic survey distributed to SBFD command officers, company officers, and line personnel. The research resulted in: (a) the identification and understanding of several policies and standards identifying necessary components of post-incident analysis programs, (b) the identification and understanding of how departments with similar size and resources of SBFD administer and manage post-incident analysis programs, (c) an understanding of the experience level of SBFD personnel with post-incident analysis programs and their acceptance level of a post-incident analysis program implementation. Recommendations included: (a) the immediate implementation of the developed standard department policy (SDP) addressing post-incident analysis, (b) establishment of department-wide training on the developed SDP with routine evaluations and updates as needed, (c) development of a method to ensure critical information gathered and determined through the post-incident analysis process is shared with automatic aid departments.

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Developing a post-incident analysis program for the St. Pete Beach Fire Department

According to the United States Fire Administration (USFA), 1,240,000 fires were reported in 2013 which was down 21.6% since 2004. (United States Fire Administration, 2016) With the amount of reported fires declining mixed with the continual retirements of some of the most experienced firefighters, many departments are looking for ways to improve their operations while dealing with these factors. The St. Pete Beach Fire Department (SBFD) is no different with a diminished fire call volume and the average years of service within the department of just 7.75 years. In fact, 19 of the 33 line personnel within the department have 7 years or less of fire service experience. (City of St. Pete Beach, 2016)

Many fire departments nationwide have developed and implemented post-incident analysis programs to bridge the experience gap by conducting after incident reviews and corresponding training exercises. The problem is the St. Pete Beach Fire Department does not have a post-incident analysis program. By not having a program, SBFD is missing out on learning opportunities and neglecting a key duty to its members and community. As stated by the USFA, the fire service has an obligation to its members and the community to evaluate problematic incidents and communicate the findings to all relevant responders. (United States Fire Administration, 2008) A post-incident analysis is an effective way to accomplish this duty. The purpose of this research is to develop a post-incident analysis program that can be utilized within the St. Pete Beach Fire Department.

Action research was utilized to answer the following research questions: (a) what are the necessary components of a post-incident analysis program? (b) how are post-incident analysis programs administered and utilized within fire departments with similar resources? (c) what

recommendations can be made in regards to a post-incident analysis program within the St. Pete Beach Fire Department?

Background and Significance

The City of St. Pete Beach is a barrier island community located in Pinellas County, Florida, just off of the mainland of the City of St. Petersburg and located south of the City of Treasure Island. The city is bordered by Boca Ciega Bay on the north and east, and by the Gulf of Mexico on the south and west. The city was incorporated in 1957 when the Towns of Pass-a-Grille, Don Cesar, Belle Vista, St. Petersburg Beach and an unincorporated area of Pinellas County consolidated into the City of St. Petersburg Beach. The name was shortened in 1994 to the City of St. Pete Beach to eliminate confusion with the City of St. Petersburg. The City of St. Pete Beach currently comprises of 2.2 square miles and has a permanent population of 10,032 people. With over 3,000 vacation accommodations, the city is a favorite winter residence for people living in other parts of the United States, Canada, and Europe. The City of St. Pete Beach is a full-service city and provides traditional services including contracted police services, fire protection as well as EMS; maintenance of parks, streets, and other infrastructure; water, sewer, stormwater and sanitation services; an aquatics center as well as a recreation center; library and cultural facility centers. (City of St. Pete Beach, 2016)

The City of St. Pete Beach Fire Department (SBFD) is a fully paid fire department consisting of 2 stations and a total of 35 personnel (Fire Chief, Fire Marshal, 3 District Chiefs, 6 Fire Lieutenants, 24 Firefighter / EMT- Paramedics). The 3 District Chiefs, 6 Fire Lieutenants and 24 Firefighter / EMT- Paramedics are assigned to 3 shifts of 11 personnel on each. All Lieutenants and Firefighter / EMT-Paramedic personnel are bargaining unit members represented by the IAFF Local 4966 (Pinellas County Professional Firefighters). The fire chief,

fire marshal, and district chiefs are considered management employees (administrators) and not included in the bargaining unit. Of the 33 line personnel, 19 have 7 years' experience or less within the fire service, and of the 14 remaining, 6 will be eligible for full retirement within the next 2 years. (see Table 1)

Table 1: SBFD Line Personnel Years of Service

Employee	Hire Date (YOS)	Employee	Hire Date (YOS)
District Chief (A)	12/28/2015 (1)	FF / Medic (B)	2/2/2015 (1)
District Chief (B)	5/28/1997 (19)	FF / Medic (B)	3/7/2016 (0)
District Chief (C)	12/8/1997 (19)	FF / Medic (C)	11/9/2009 (7)
Lieutenant (A)	1/14/2002 (14)	FF / Medic (C)	7/18/2011 (5)
Lieutenant (A)	1/14/2002 (14)	FF / Medic (C)	3/9/2015 (1)
Lieutenant (B)	4/25/1994 (22)	FF / Medic (C)	11/30/2015 (1)
Lieutenant (B)	7/6/1998 (18)	FF / Medic (C)	3/25/2016 (0)
Lieutenant (C)	11/3/2003 (13)	FF / EMT (A)	6/20/1994 (22)
Lieutenant (C)	7/18/2011 (5)	FF / EMT (A)	12/8/1997 (19)
FF / Medic (A)	5/10/2010 (6)	FF / EMT (A)	10/27/2003 (13)
FF / Medic (A)	11/30/2015 (1)	FF / EMT (A)	2/2/2015 (1)
FF / Medic (A)	2/29/2016 (0)	FF / EMT (B)	6/7/2004 (12)
FF / Medic (A)	12/27/2016 (0)	FF / EMT (B)	5/9/2005 (11)
FF / Medic (B)	3/29/2010 (6)	FF / EMT (B)	4/27/2015 (1)
FF / Medic (B)	7/20/2015 (1)	FF / EMT (C)	1/14/2002 (14)
FF / Medic (B)	2/18/2014 (2)	FF / EMT (C)	10/8/2012 (4)
		FF / EMT (C)	2/4/2013 (3)

The department provides fire suppression, non-transport emergency medical response, fire inspections based on the NFPA Life Safety Code, public education for fire prevention, hurricane preparedness, pool safety, CPR training, free home fire safety surveys, and free smoke detectors and installation. SBFD currently operates 2 ALS rescue companies, an ALS squad company, a BLS truck company and a district chief incident commander responding out of 2 stations with a minimum staffing of 9 personnel.

SBFD is one of 19 municipal and independent special district fire departments serving the citizens and visitors of Pinellas County. All 19 agencies participate in an automatic aid agreement which ensures that the closest available unit responds to all emergency fire or EMS calls, regardless of location or jurisdiction. In fiscal year 2014/2015, these agencies responded to 163,143 emergency incidents countywide. (Pinellas County Florida, 2015) During this period, SBFD responded to 2297 emergency calls in their first due area, of which 22 were structure fires incidents. (City of St. Pete Beach, 2016)

SBFD is no different from the nation's fire service in regards to a lack of experience firefighters and a decrease in structure fire incidents. In fact, the USFA noted that even as the population increases the number of fires in the U.S that are responded to continue to decline. This trend, along with a changing workforce, has led to less actual firefighting experience for firefighters. (United States Fire Administration, 2008) An effective way to not only combat this lack of experience but to also continue to improve the overall operations of a fire department is through post-incident analysis. In reality, due to the "new challenges and risks involved in all of today's incidents, emergency responders should perform some kind of debriefing following every event." (Firefighter Nation, 2011, p. 1) As a fire service, post incident analysis "provides us with an opportunity to review the effectiveness of our actions and procedures during an actual incident, including the overall quality of our services to the community." (Firefighter Nation, 2011, p. 4)

Fire departments around the nation are tasked with mitigating hazards of all types and sizes, hazards that seemingly grow in amounts and complexity on a regular basis. While structure fires continue to be one of the most common responses associated with the fire service, other hazards also magnify the need for post-incident analysis programs nationwide. This

diversification on fire department responses has led to the creation of the National Response Framework (NRF) which addresses the need for analysis of not only actual incidents, but also day-to-day operations, exercises, and alerts. This need is clearly identified within Unit 1, National Incident Management, National Response Framework, and Stafford Act, of the EFOP course Executive Analysis of Fire Service Operations in Emergency Management offered by the National Fire Academy. In this unit, the NRF is defined as a guide to how the nation responds to all types of disasters and emergencies. The NRF addresses specific authorities and best practices for managing incidents that range from severe local events to large-scale terrorist attacks or natural disasters. (Federal Emergency Management Agency, 2016) Like most plans, the NRF is a “continuous, evolving instrument of anticipated actions that maximizes opportunities and guides response operations.” (Department of Homeland Security, 2013) A component of this evolving process is the post-incident analysis which also plays a major role in smaller scale local fire department plans.

In addition to the benefits identified in relations to the NRF, the development of a post-incident analysis plan on local and national levels strikes at the core of nearly all 5 of the operational goals of the United States Fire Administration (USFA). Specifically, the systematic review of actual incidents and training exercises used to identify efficient and ineffective practices can lead to accomplishing goal 2, promote response, local planning and preparedness for all hazards, and goal 3, enhance the fire and emergency services capabilities for response to and recovery from all hazards. (Federal Emergency Management Agency, 2016)

Literature Review

The literature review focused on the background and intent behind post-incident analysis (PIA) in both the fire service and other applications to further understand the importance of such

a process. Because of the wide range of titles and terminology, topics such as after action report (AAR), post-incident critique, and debriefings were also utilized in the development of the literature review. Also, standard policies and procedures mentalities and components for fire departments were reviewed along with national standards relating to the fire service. Implementation techniques and available post-incident analysis (PIA) software completed the literature review research.

Background

Similar to the fire service, many other types of organizations continuously look for ways to improve operations by identifying strengths and weaknesses. One of the most common and efficient ways to accomplish this objective is by reviewing actual incidents, training activities, or other operations. While some may call actions such as these critiques, many have moved away from this term as it may carry a negative connotation. Due to this fact, less threatening terms such as debriefing, after action review, or post-incident analysis has become more common. (United States Fire Administration, 2008) With a goal of mitigating negativity, reviews should be carried out with the sole purpose of reinforcing what works and learning what can be done better. At the conclusion, lessons learned should serve as educational and training tools. (Knitter, 2009)

Beginning in the mid-1970's, the US Army designed a review process to capture lessons learned from simulated battles. (Gavin, 2000) While changed and redeveloped several times, this process was the starting point for what is today, the After Action Review (AAR) which is also the basis for many other similar programs spread across different industries and organizations. While widely accepted today, the internal buy-in and culture change was not entirely found until the Gulf War of the 1990's. It was during this event that groups of soldiers

began to gather with one another in foxholes or around vehicles to review recent missions and to identify possible areas for improvement. This process grew even further in later years when AAR's were incorporated into all phases of operations with a goal of capturing and disseminating critical organizational knowledge. (Gavin, 2000) The Army's official definition of AAR's further clarifies the process as a professional discussion of an event, focused on the performance standards, that enables soldiers to discover what happened, why it happened, and how to build on strengths and improve on weaknesses. (Department of the Army, 1993) As identified by Mark Finucane (2009) in his research on the subject, the actual benefits of AARs come from taking outcomes and lessons learned and applying them to future operations and trainings as well as providing an opportunity to reflect on an event or incident and to improve the next experience.

Based on the paramilitary structure of most fire departments, the U.S. Army's AAR process is easily adaptable. The need for this adoption becomes higher each year as major events such as fires continue to decline. In fact, the occurrence of fires has decreased 21.6% since 2004. (United States Fire Administration, 2016) While this trend is a positive, experience for firefighters is reduced, and in some cases, actual firefighter positions are decreased. Due to cost, many times it is senior firefighters that leave the profession taking years of experience with them. Replacing them with cheaper, inexperienced personnel causes fire departments to seek out ways to bridge the experience gap. (United States Fire Administration, 2008) One identified way is the utilization of AAR's, more commonly referred to as post-incident critiques, or post-incident analysis (PIA's) in the fire service. Regardless of the term utilized, one of the most important areas of personal development for any firefighter is participation in an after action

critique. The critique is a “fundamental factor” for promoting progress in a fire department. (Spell, 2015, p.4)

In line with the goals of the military, fire departments look to PIA’s to improve operations. In the fire service, the overall goal is to capture the incident facts and facilitate organizational learning. Defined slightly different than the military version, the fire department PIA is looked at as a fact-finding exercise and a chance to relate and record pieces of information that collectively form an overall view of the event and how personnel responded from both a tactical and operational standpoint. This information is used to evaluate the effectiveness of the overall operation and produce lessons learned that could constructively be used to correct deficiencies and influence training and education. (United States Fire Administration, 2008)

Accomplished by the PIA process, instructional theorists believe that if firefighters engage in discussions about incidents or events they have experienced, and turn those conversations into teaching opportunities, the amount of information that they will learn and retain can approach 95%. In comparisons, most retain only 10% of what they read, 20% of what they hear and 30% of what they see. (Fire Rescue, 2010) A critical element as to how firefighters make themselves, their teammates and their department better is by learning from their experiences. (Spell, 2015)

While the comparison from the military to the fire department is readily understood, the comparison from the military to the business world is more challenging as many business organizations also utilize after action reviews in hopes of improving operations. Similar to the military and fire service, companies employ after action reviews as disciplined analysis and interpretation to identify and solve problems and education and training to develop both new and established employees. Companies such as BP-Amico, Steelchase, Motorola, and GE have

adopted the approach of the U.S. Army's AAR within their company. In the business world, the process is built on four simple questions: what did we set out to do, what happened, why did it happen, and what do we do next time. After answering these fundamental questions, businesses can evaluate which activities they should sustain and which they should improve. (Garvin, 2008)

Standards and Policies

In regards to the fire service, much of what is spelled out within department policies and procedures derive from recommendations provided by the National Fire Protection Association (NFPA). The NFPA is a nonprofit organization that is devoted to eliminating death, injury, property and economic loss due to fire, electrical and related hazards. Based on codes and standards, their mission is to provide the fire service and related organizations with the knowledge and information they need to do their jobs. The NFPA is considered the "premier resource" for fire data analysis, research, and analysis. (National Fire Protection Association, 2016)

With the NFPA serving as the nationally accepted informational source for many fire service topics, a post-incident analysis is no exception. In fact, while researching the topic, John Kinsley (2010) found that no less than ten NFPA standards mention a written PIA and that the requirements dictated in the NFPA standards, were adequate for assessing the safety issues on the fire ground. Included in the ten Kinsley mentioned, are NFPA 1006 *Standard for Technical Rescuer Professional Qualifications*, NFPA 1021 *Standard for Fire Officer Professional Qualifications*, NFPA 1250 *Recommended Practice in Fire and Emergency Service Organization Risk Management*, NFPA 1500 *Standard on Fire Department Occupational Safety and Health Programs*, and NFPA 1521 *Standard for Fire Department Safety Officer*

Professional Qualifications. While PIA's, or some described post-incident review, is mentioned in many NFPA standards, none specify a certain format to be utilized.

NFPA 1006 Standard for Technical Rescuer Professional Qualifications – The standard regarding technical rescuer qualifications mentions post-briefings by definition only. Post-briefings are described as occurring at the termination of an incident once breakdown and cleanup have already been completed. These post-briefings are meant to review the effectiveness of strategies, tactics, equipment, and personnel at an incident. As an added benefit, it is noted that post-briefings can provide an opportunity to detect the presence of critical incident stress syndrome among the responders. (National Fire Protection Association, 2013)

NFPA 1021 Standard for Fire Officer Professional Qualifications – In regards to the qualifications in which NFPA recommends for fire officers, the ability to conduct PIA's plays an important role. In fact, from fire officer one recommendations through fire officer four, PIA's are addressed in detail. It is recommended that fire officers have the ability to not only conduct, but also develop a PIA based on policies, procedures, and forms provided. The intent is that all required critical elements are identified and communicated, and any required forms are completed and processed. As fire officer's progress through the four stages, their abilities should grow from being able to conduct a PIA for single unit incidents, to multi-unit incidents, and on to multi-agency incidents per NFPA. (National Fire Protection Association, 2014)

NFPA 1250 Recommended Practice in Fire and Emergency Service Organization Risk Management – While PIA's are not specifically mentioned by name in this standard, fire and emergency organizations are encouraged to have observation procedures built into their risk management programs, which have similar characteristics as PIA's. As a way to accomplish this goal, it is suggested organizations utilize observations of operational performance to ensure

compliance with organizational expectations. These organizational expectations should be documented through policies and procedures. (National Fire Protection Association, 2015)

NFPA 1500 Standard on Fire Department Occupational Safety and Health Programs – The most extensive amount of information regarding PIA's is contained within this standard. Stated within NFPA 1500, fire departments shall establish requirements and standard operating procedures for a standard post-incident analysis of any significant incidents or incidents which involve serious injury or death to a firefighter. While the format is not specified, components and goals of the analysis are laid out. The standard identifies the need to conduct a fundamental review of the conditions present, the actions taken, and the effect of those conditions and actions on the safety and health of the firefighters. If actions are determined to be needed in regards to updating any safety and health programs to improve the welfare of the firefighters, a standardized plan must be made. Within that plan, elements needing change must be identified along with the responsibilities, dates, and details of actions required. In addition, the involvement of the fire department incident safety officer within the PIA process is identified.

(National Fire Protection Association, 2013)

NFPA 1521 Standard for Fire Department Safety Officer Professional Qualifications – While the involvement of the incident safety officer (ISO) within the PIA process is identified in NFPA 1500, their actual actions are described in NFPA 1521. It is within this standard that the ISO is instructed to prepare a written post-incident analysis form from their perspective based on observations. The intent of this written form is to ensure safety and health issues, best safety practices, deviations from organizational policies and procedures, and recommendations for future events are documented. It is also the responsibility of the ISO to ensure that reported observations are communicated up the chain of command. Included in this standard is a sample

template for the ISO post-incident analysis report provided by the Ottawa Fire Services Division.
(National Fire Protection Association, 2015)

While the NFPA provides adequate guidelines for PIA's ensuring proper assessments of safety issues in fire ground and similar operations, in order to provide organizational learning, the PIA process must be consistently applied. (Kinsley, 2010) To ensure that consistency, fire departments utilize standardized policies and procedures, and in some cases, PIA worksheets and forms. The use of consistent policies and procedures, in addition to following the best practice guidelines provided by NFPA, "helps to keep the focus largely on the safety of the firefighters and their actions". (Jones, 2014, p.31) Finucane (2009) found that consistent PIA policies convey integrity in the overall process. He went on to note that PIA's performed without guidelines in place are "often vague and provide little educational advantage." An orderly process is essential to keeping PIA's focused, emotions under control, and finger-pointing to a minimum. (Finucane, 2009, p. 64)

As explained by Joseph Ockershausen in the USFA after action special report, successful critiques rely on "enforcing a written policy that establishes a systematic and standardized approach for conducting them and clearly explains the purpose and objectives of evaluating the department's response to incidents." In addition to laying out the process, department policies should dictate which incidents and what type of critiques are performed. (United States Fire Administration, 2008, p. 2)

Once it is determined that a PIA should be conducted, the next step is determining what kind of PIA process should be utilized. While the most common forms of PIA's are formal and informal, other terminology exists. Some fire departments nationwide employ "hot washes", which typically take place prior to the responders departing from the incident scene, while "call

critiques” generally are held back at the station where additional information is obtainable along with the ability to further evaluate incident actions. (Fire Rescue, 2010) Although slightly different, hot washes resemble an informal PIA, while a call critique commonly resembles a formal PIA. Although variances do exist in these various techniques, the fundamental approach is essentially the same. Variations typically revolve around how and when the methods are conducted. (Finucane, 2009)

Usually carried out at the company officer level, informal critiques basically involves a review of how well specific tactics worked and what changes could possibly induce better results. Depending on department policies and procedures, informal critiques can be utilized for incidents or training evolutions providing optimal conditions for retracing crew actions and analyzing operational concerns due to the timing of the process. (United States Fire Administration, 2008) Informal PIA’s allow for instant applied learning opportunities by providing direct feedback while operations are still fresh in the minds of personnel. (Garvin, 2000)

Although immediate learning opportunities are a strong aspect of the informal PIA, the lack of documentation that is typical of this process has drawbacks. In fact, Finucane (2009) noted that his research “made clear the importance of communicating the results and recommendations” of a PIA. (Finucane, 2009, p. 61) He went on to stress the significance of forwarding documentation up to the next level along the fire department chain of command to be further evaluated. This is an essential aspect of a formal critique which details a review and analysis of large-scale and other complex or tactically challenging operations. The formal critique is designed to reconstruct an incident to determine if a proper tactical plan and techniques were utilized, as well as determining how effective they were at mitigating the

situation. (United States Fire Administration, 2008) Documentation provides a pathway for analysis to result in recommended changes to department's plans, policies, and procedures. In addition, this process could identify positive actions that should be praised during the process. An imperative component of the process is to ensure that positive aspects of the crew's behaviors and fire departments actions are reinforced. (Firefighter Nation, 2011)

Implementation

Like most things in the fire service, change is challenging for leaders. New policies, procedures, or techniques are often met with resistance by department members or administrators. Employee "buy-in" is critical to successful implementation of any of these items. Introducing a PIA process would seemly meet the same level of potential resistance. While researching the topic of PIA's, David Jones (2014) found, through an internal questionnaire, that members within his department had a desire for a standardized format for this process. He goes on to say that standardization is provided by policies and guidelines that provide an idea as to when to perform a PIA and who should be responsible for facilitating. Involving the members and getting their feedback, such as Jones accomplished with an internal questionnaire, assist with employee buy-in. In fact, the USFA suggest that the development of a critique policy should be a collaborative effort by possibly appointing a committee comprised of both line and staff personnel. The thought is that this will dispel much of the cynicism associated with critiques. (United States Fire Administration, 2008)

In addition to involving members during the development phases of policy creations, employees must believe and have trust in the policies. This is magnified in regards to PIA policies due to the natural distrust in critiques of any form. If members don't trust, the thought is they won't participate. This can compromise the PIA process as Finucane (2009) suggested that

overwhelmingly, “an important aspect impacting the quality of an AAR is the willingness of participants to be open and candid during discussions.” (Finucane, 2009, p.63) In Jim Spell’s (2015) article on PIA’s, he placed this responsibility on the members to some degree. He felt that if a member has something to say, they have an obligation to share it during a critique. However, he also noted that it is the administration’s responsibility to promote an open atmosphere of acceptance and discussion during critiques. The environment created by fire department administrators must develop trust and encourage open and honest conversations with members without the fear of personal attacks or official retribution. The risk of loss information based on these concerns could result in the lack of beneficial information that could possibly lead to improved future operations, and enhanced safety of fire department members. (United States Fire Administration, 2008)

PIA Software

As technology advances, fire departments abilities to produce high quality PIA’s that capture all critical incident facts and facilitate organizational learning increase. One way to capitalize on this advancing technology is through the utilization of programs offered by the company Incident Smart. Incident Smart is a technology company that provides tools to increase the safety for members of fire departments. They offer programs for effective pre-plans, training scenarios, and post-incident analysis.

The post-incident analysis program offered by Incident Smart allows for a consistent PIA delivery and makes disseminating information resulting from the PIA through an entire department, seamless. The software provides an interface that walks administrators through each section of the PIA report. It also incorporates a mapping tool that assists with creating a diagram of any incident scene allowing for greater analysis. Other forms of technology can be uploaded

to the program as well including videos and photos relevant to the incident. (Incident Smart, 2016)

Even without the advantages of utilizing software such as Incident Smart, multimedia such as pictures and videos can still be incorporated into a departments PIA process. The benefits of such were illustrated in a 2010 article featured in Fire Rescue Magazine. Noted in the article was the use of visual aids to document incident scenes providing essential tools in ensuring members understand what occurred. These tools can lead to mental pictures that will assist with on-scene decision making enhancing overall operations. (Fire Rescue, 2010)

While the analyzation of past incidents, event, or training exercises can be titled many things, the basic components and goals remain consistent. Examples of this are found in the military, the business world, and the fire service. Specifically, in the fire service, these components are guided by the many NFPA standards that address PIAs. With consistent and comprehensive PIA policies, departments can reach the goals of improving overall operations and provide for a healthy and safer environment for their members. By reviewing the many forms of PIA's within many professions, basic components, goals, standards, implementation strategies, and advancements in technologies, departments such as SBFD can develop their policies to ensure no learning opportunities are missed.

Procedures

The research for this applied research project was conducted utilizing an active research method with a focus on the identified research questions: (a) what are the necessary components of a post-incident analysis program? (b) how are post-incident analysis programs administered

and utilized within fire departments with similar resources? (c) what recommendations can be made in regards to a post-incident analysis program within the St. Pete Beach Fire Department?

The procedures portion was designed to give readers a detailed description of how this writer determined the common components that are necessary to provide a comprehensive post-incident analysis program to improve emergency operations, and what type of post-incident analysis programs other fire departments of similar size and resources utilizing which could indicate successful implementation within SBFD.

Question 1: What are the necessary components of a post-incident analysis program?

The research began with an internet search of fire department related PIA policies. The search was broadened to include the terms post-incident critiques, debriefings, and after action reviews based on information gathered during the literature review section of this research. Analysis of all discovered local and national policies and standards was conducted focusing on the aspects dealing with PIA components. Also, information was obtained from a U.S Fire Administration's special report on the subject of after-action critiques.

In addition to the listed procedure, information that was obtained during the research for question two was utilized to answer question one further. Detailed procedures for this action are described in research question two.

Limitations of this research were directly related to the availability of searched information on the internet. While all searches conducted utilized several commonly accepted names for PIA type processes, some departments or organizations may title their programs with an unsearched name. In addition, all discovered and analyzed information is assumed to be current and factual.

Question 2: How are post-incident analysis programs administered and utilized within fire departments with similar resources?

A list of all fire departments throughout the state of Florida was obtained from the Division of State Fire Marshal. The list contained the departments' name, department type, website if applicable, the number of fire stations, and the number of active firefighters/personnel. To compile a representative sample list of fire departments with similar resources as SBFD, the list was reviewed to find two stations or less career or mostly career departments with a comparable amount of firefighters/personnel. Once departments were identified with similar resources, email addresses for department contacts were obtained utilizing internet searches or contact phone numbers.

A detailed survey was developed utilizing SurveyMonkey.com with a link to the survey sent to all obtainable department contacts compiled previously via email. (see Appendix A) The survey contained six questions addressing the existence of a PIA program, components, administration, and processes (see Appendix B). These questions were asked to analyze and better understand current practices and thoughts from department leaders of comparably sized organizations. Survey questions were developed based on information obtained during the literature review including existing policies, procedures, and national standards. The survey was sent out to all applicable departments on September 22, 2016, with a follow-up email sent on October 22, 2016, to obtain additional survey completions. The survey was left open until the results were analyzed on November 4, 2016. Results were then placed into several tables for illustrational purposes and any comments received were placed as notes.

In addition to the survey that was linked on the email, departments were also asked to provide a copy of their current PIA policy if one was available. While not part of the detailed procedures of this project, information obtained during internet searches relating to the literature review section was utilized due to limited examples of PIA policies available from the surveyed departments.

Limitations of this research were directly related to the surveyed departments and their willingness to respond. Due to the use of email, it is possible that not all intended recipients received the survey information. In addition, assumptions are made that all received information is factual and complete in nature.

Question 3: What recommendations can be made in regards to a post-incident analysis program within the St. Pete Beach Fire Department?

After the completion of all research and analysis of data for research questions one and two, a draft PIA standard department policy (SDP) was developed along with a PIA review sheet (see Appendix C). In addition to the SDP and review sheet, a detailed survey was developed utilizing SurveyMonkey.com in order to be employed as an internal feedback instrument within the SBFD. The survey consisted of five questions addressing employees experience with PIA's, their willingness to participate in PIA's, personal feelings of such processes, and questions related to the draft PIA policy itself (See Appendix D). Survey questions were developed after reviewing the implementation of similar policies during the literature review. The survey was sent out to all SBFD employees on November 15, 2016, with a follow-up email sent on November 30, 2016, to obtain additional survey completions. The survey was left open until the results were analyzed on December 9, 2016. The email consisted of background information on

the research project along with a survey link and attached draft PIA SDP with a PIA review sheet (see Appendix E). Results were placed into a table for illustrational purposes and any comments received were placed as notes highlighting specific points submitted by employees.

The intent of the internal survey was to determine the experience level each employee had with PIA's and to allow them to analyze the draft SDP and review sheet. After analyzation, questions were developed to determine support level within the SBFD to provide recommendations to address the problem statement, which had a high degree of potential success. In addition, employees were provided an opportunity to make recommended improvements, additions, or changes to the draft policy.

Limitations of this research were directly related to the surveyed employees and their willingness to respond. Due to the use of email, it is possible that not all intended recipients received the survey information. In addition, assumptions are made that all received information is factual and complete in nature.

Results

During this research project, question one, *what are the necessary components of a post-incident analysis program?*, was researched in a two-step process. Initially, an internet search was conducted to locate fire department post-incident analysis policies as well as local and national policies and standards relating to PIAs. The internet searches resulted in numerous fire department PIA policies from around the country as well as several standards provided by the National Fire Protection Association. The located PIA policies were limited to five for analyzation purposes, and a brief description of each policy and its components are listed below:

Phoenix Regional – The procedure for this policy provided general guidelines for conducting a post-incident review. Within those guidelines, several areas were identified as discussion items including response times, RIC response, safety, firefighting, rescue, property conservation, loss control, and other customer service issues. In addition, the importance of conducting the PIA on a positive note as well as focusing on safety issues was detailed. The policy concluded with two post-incident review sheets for both emergency medical services (EMS) events and fires.

City of Gastonia – The main focus of this policy was to define the types of “significant events” that triggered the completion of a post-incident analysis including two or more attack lines on a structure fire, multiple casualty EMS incidents, extrication incidents involving two or more victims, confined space rescues, hazardous material incidents, incidents with unusual circumstances, or a fire involving a civilian death or any serious injuries to fire personnel. The policy also defines the on-scene incident commander of the response in question to lead the PIA process and submit reports up the chain of command. Additionally, a PIA form is included that provides for documentation of incident information including a diagram of the scene.

Germantown Fire Department – The policy allows for any officer involved in any incident to initiate a PIA. In addition, the policy requires PIA’s to be performed after structure fires when a pre-connected hose line was utilized, hazardous materials incidents, or EMS calls involving cardiac arrest or extrication. Prior to a PIA being conducted by the battalion chiefs, information must be obtained including the date, times, scene layout, units responding, a general overview of operations, actions that were taken, and hose lines used. During the PIA, actions that worked well as well as areas that need improvement are identified. All persons involved with the PIA are given a chance to discuss their thoughts of the overall operation.

Galena Fire Department – While the post-incident review policy in Galena shares many of the components of other researched policies, it also defines the benefits of such a program, the responsibility levels of departments supervisors, and processes for the two different types of defined reviews, informal and formal. The informal review is typically handled by line officers and involves a discussion of events that transpired during a specific emergency incident with all the crew members applicable. The formal review is a more comprehensive process designed to impact all members of the Galena Fire Department. This process is typically managed by the incident commander and involves a detailed analysis of major incidents with a focus on identifying deficiencies and determining necessary actions to correct them. In addition, an included post-incident review form is followed and completed within the formal process.

South Milwaukee Fire Department – This PIA policy is the most extensive of the five reviewed and includes all previously mentioned components in greater detail. The most notable aspects of this process is the policy statements defining the PIA as a training function with the following three goals: (a) contribute to the moral of the department by reinforcing positive aspects of the operation, (b) serve as a learning experience for the entire department, (c) identify areas were change is needed.

In regards to national standards that apply to PIA process, many of the standards from the National Fire Protection Association address PIAs in general. After a detailed review, it was determined that *NFPA 1500 Standard on Fire Department Occupational Safety and Health Programs*, provided the only extensive information pertaining to research question one. NFPA 1500 specifically addressed some of the necessary components associated with the PIA process. Within this standard, the need to conduct a basic review of the conditions present, the actions that were taken, and the effect of those conditions and actions on the safety and health of

firefighters is identified. In addition, the standard recommends a standardized plan on updating safety and health programs if needs are determined to be present based on the PIA result.

Question two, *how are post-incident analysis programs administered and utilized within fire departments with similar resources?*, was answered by seeking out background information from other fire departments in regards to their current programs if relevant. Research for this question began with obtaining a list of every fire department located in the State of Florida from the Division of State Fire Marshal. The list, containing 477 fire departments, was analyzed to determine departments with similar resources as the SBFD such as two or fewer stations and a comparable amount of firefighters/personnel within a career or mostly career department. This resulted in a total of 67 like departments in which were researched further to obtain e-mail contact information. (see Appendix F) An email was sent to each of the 67 identified departments containing background information on the project and a link to a SurveyMonkey.com survey. In addition, departments were asked to provide a copy of their PIA policy if one existed. Of the 67 identified departments, only 25 responded and completed the survey which was open from September 22, 2016, through November 4, 2016. (see Appendix G)

While results were limited due to the minimal participation level, it was determined that less than 50% of the departments that responded utilize a formal PIA process and of those departments, only 50% have written policies defining the necessary components and required steps in the process. Of the 5 departments that stated they currently have a written policy on PIA's, only one provided a copy for review. Longboat Key Fire Department provided a copy of their policy and PIA report sheet which is summarized below:

Longboat Key Fire Department – This single page policy outlines the minimum procedures required of a PIA. The policy defines the incident types requiring either a formal or informal

PIA. Regardless of the PIA type, all follow a basic process which is accomplished in 5 stages. The five stages involve observations and actions of the initial crews and incident commander, discussions by all incident command positions if applicable, documentation of the PIA process, and submission of all PIA related materials to the fire chief. If follow-up actions are required, they are reviewed at a later time. In addition to the written policy, a PIA report is included for the necessary documentation with a focus on policy compliance and safety issues.

While many departments lacked written policies, several provided input on what they felt were the necessary basic components of a post-incident analysis. The majority found the four most important components to be an incident overview, incident review, discussion points and learning objectives, and final review. (see Table 2) In addition, several departments felt the need to ensure lessons learned and future training opportunities were included in the necessary components of a PIA process.

Table 2: Necessary basic components of a PIA process (surveyed fire departments)

Department Responses	
Introduction	6 (54.55%)
Ground rules	7 (63.64%)
Overview of incident	10 (90.91%)
Incident review	11 (100.00%)
Discussion points / Learning objectives	10 (90.91%)
Performance recognition	9 (81.82%)

Final review	10 (90.91%)
--------------	-------------

In regards to what incidents or actions would trigger a PIA, all responded departments agreed that a PIA should be initiated upon company officer or incident commander discretion. In addition, a majority felt a PIA should be conducted following an incident with unusual circumstances or unexpected developments, and when a fire causes injuries or a fatality. (see Table 3)

Table 3: Incidents or actions triggering a PIA (surveyed fire departments)

Department Responses	
Multiple alarm fires	5 (45.45%)
Hazardous material incidents	4 (36.36%)
Fires with injuries or fatality	8 (72.73%)
Fires that exceed a predetermined dollar loss	3 (27.27%)
Technical rescues	4 (36.36%)
Incidents with unusual circumstances or unexpected development	7 (63.63%)
Fires in high-risk buildings	6 (54.55%)
Incidents in structures where fire protection features influenced event	5 (45.45%)

outcomes	
Upon Company Officer or Incident	11 (100.00%)
Commander discretion	

Based on comments returned in regards to who oversees the PIA process in surveyed departments, it appears it is somewhat dependent on the size of the administrative staff. 50% of the departments listed the incident commander as the head of the PIA process while the others identified the fire chief or chief officer. Some noted that the fire chief was the only 40-hour employee which dictated the need to have them oversee the process.

While many answered varied from department to department, all stated that the information obtained through the post-incident analysis process is shared with other employees outside of the actual on-scene responders. While comments were not solicited in regards to this question, one department stated that if something significant is learned, it is shared on an as-needed basis and typically used for training or reinforcing purposes.

After the completion of all research and analysis of data for questions one and two, question three, *what recommendations can be made in regards to a post-incident analysis program within SBFD?*, was answered with a combination of questions one and two's results and an internal feedback instrument provided to all SBFD employees. In addition, a PIA SDP was developed for possible implementation within SBFD. (see Appendix C) Due to the limited response from the emailed surveys described in the results of question 2 and the lack of formal policies available in identified like departments, information gathered in the literature review that was applicable for the SBFD was utilized while developing the SDP to solve the problem statement of this research project.

The internal feedback instrument was provided via city email addresses to all SBFD employees including administrators. The email provided all 34 SBFD employees with background information on the project, a copy of the developed PIA SDP with review sheet, and a link to a SurveyMonkey.com survey. The 35th member of SBFD is the author of the research project and did not participate in the internal survey. Of the 34 SBFD employees emailed, only 11 responded and completed the survey which was opened from November 11, 2016, through December 9, 2016. (see Appendix H)

While results were limited due to the minimal participation level, it was determined that a majority of current SBFD employees have participated in a PIA during their career. In addition, the results showed unanimous support for a PIA policy within SBFD including employees acknowledging the benefits of such a program, agreeing to participate in a PIA, and feeling that a PIA program could be successfully implemented within SBFD. (see Table 4) Employees were also asked if changes were needed to the draft PIA SDP before implementation to analyze overall acceptance and to allow employee input and feedback. The results showed that employees again unanimously agreed that no changes were needed and all were happy with the PIA components. One employee did make a recommendation to ensure dispatch notes were available during the PIA process as well as dispatch tapes if possible.

Table 4: SBFD internal questionnaire results

Employee Responses	Yes	No
Question 1 – Participation in PIA while at SBFD	8	3
Question 2 – Would PIA program be beneficial at SBFD	11	0

Question 3 – Willing to participate in PIA	11	0
Question 4 – PIA policy successfully implemented at SBFD	11	0

Based on the combination of results for all three researched questions, the following recommendations were made as a conclusion to research question three:

- (a) The immediate implementation of the developed standard department policy (SDP) addressing Post Incident Analysis (PIA's).
- (b) Establishment of department-wide training on the developed SDP with routine evaluations and updates as needed.
- (c) Development of a method to ensure critical information gathered and determined through the PIA process is shared with automatic aid departments.

Discussion

The literature review and the results section have shown not only the need for PIA programs in the fire service, but also the necessary components that make such programs successful. In addition, the analyzation of both the literature and results of the defined research questions has shown a desire and need for a standardized process that can be utilized for PIA's and allow for successful implementation.

Need for PIA programs

One of the major factors affecting the operations of the fire service today is experience levels. As more and more firefighters reach retirement age, newer and inexperienced firefighters

are filling their roles. This issue is evident within the SBFD where the average years of service is just 7.75 years. In fact, 19 of the 33 line personnel have 7 years or less of firefighting experience. (City of St. Pete Beach, 2016) This issue is further complicated by a reduction in actual fire ground experience for these newer employees. The USFA has noted that even as population increases, the number of fires in the U.S. that are responded to continues to decline. (United States Fire Administration, 2008) In fact, the occurrence of fires has decreased 21.6% since 2004. (United States Fire Administration, 2016) As shown in the literature review, a way for departments to bridge this experience gap is through the use of PIAs.

With an introduction of After Action Reviews (AAR's) by the US Army in the 1970's, post event critiques have become standard practice in not only the military but in the business world and the fire service as well. Gavin (2000) found that the US Army designed the AAR process to capture lessons learned from simulated battlefields which have been adopted in the business world and fire service. In regards to the fire service, PIA's have been designed to improve operations through the review of incidents, training events, or other significant operations. Specifically, Finucane (2009) describes PIA's as providing the ability to "effectively identify and communicate areas of sustainment, improvement and lessons learned that result on a positive impact on future operations." The term "lessons learned" or learning objectives are a common association with fire service PIA's as shown by the results of the sample department survey where 90% of the respondents indicated these terms as critical components of the PIA process. Spell (2015) found that learning from experiences is an essential component to ensuring firefighters have the tools to make themselves, their teammates and their fire department better. This is also in line with Jones (2014) external questionnaire analysis which again indicated that lessons learned were a priority to include within the PIA process.

Components

While learning objectives are critical components of the PIA process, other have been identified as just as essential. In addition to serving as a learning experience for the entire department, the South Milwaukee Fire Department has identified other PIA process goals including contributing to the moral of the department by reinforcing positive aspects of operations reviewed, and identifying areas where change is needed. Identifying areas where change is needed is also addressed in NFPA 1500 specifically dealing with the health and safety of firefighters. Within this standard, it is recommended that a standardized plan is presented anytime an update to policies and procedures may be necessary to protect firefighters. In addition, the standard identifies other critical components such as the need to conduct a basic review of conditions present and the actions taken during the incident. (National Fire Protection Association, 2013) Similar critical components were identified by the results of the sample department survey where 90% of the respondents indicated that an overview of the incident was necessary along with 100% identifying that an incident review is conducted.

Another critical component of the PIA process is when to utilize it. NFPA 1500 indicates that PIA policies should indicate the need for the process after any significant incident or any incident in which a firefighter has been severely hurt or killed. (National Fire Protection Association, 2013) As incidents grow in severity, the more important it becomes for fire departments to gather all available documentation. (Fire Rescue, 2010) This recommendation falls in line with many researched policies including the City of Gastonia which specifically identifies “significant event” and defines them as two or more attack lines on a structure fire, multiple casualty EMS incidents, extrication incidents involving two or more victims, confined space rescues, hazardous material incidents, incidents with unusual circumstances, or a fire

involving a civilian death or serious injuries to fire personnel. These are similar to the suggested list provided by the United States Fire Administration with the addition of fires that exceed a predetermined dollar loss, fires in high-risk buildings, and incidents in structures where fire protection features influenced event outcomes. (United States Fire Administration, 2008)

While many of the mentioned incidents that commonly trigger PIA's were identified by respondents from the sample fire department survey, such as fires with injuries or fatalities (73%), incidents with unusual circumstances or unexpected developments (64%), and fires in high-risk buildings (55%), all respondents indicated that PIA's should be conducted upon company officer or incident commander (IC) discretion. The United States Fire Administration identifies the incident commander's discretion to initiate a PIA as a conservative approach due to the IC being in a better position to gauge what type of incidents warrant such a process. This opinion is based on the assumption that the IC will be more aware of the strengths and weaknesses of the personnel under their command. (United States Fire Administration, 2008)

Giving the incident commanders or company officers discretion to initiate a PIA can also transition into the leadership role of PIA facilitation. NFPA has indicated that facilitating PIA's plays a major role in fire officer development. NFPA 1021 details the need for a fire officer to be able to conduct and develop PIA's based on policies, procedures, and forms provided by departments. (National Fire Protection Association, 2014) This is especially important when analyzed with the fact that a majority of fire service personnel feel it is the incident commanders responsibility to facilitate this process. Knitter (2009) found that 60% of the respondents of his internal questionnaire believed that the incident commanders should assume this role while Finucane (2009) percentage was even higher at 79%. Similar results proved true during the external questionnaire for this research project where 50% of the respondents agreed with the

incident commanders as the leads. While this appears to be the majority, individuals such as Finucane (2009) have identified a potential weakness in this approach due to the possibility of the incident commander having difficulty being objective or being defensive due to their involvement in the incident. Problems such as this could cause members to have concerns and result in resistance to successful implementation of PIA policies.

Successful implementation

Ineffective facilitators are just one of the roadblocks to successfully implementing PIA policies. While many different types of analyzations are completed in the fire service such as informal and formal reviews, “hot washes,” or “call critiques,” the desire for a more standardized system was identified. Standardization through policies and procedures leads to consistency in the PIA process. As Finucane (2009) determined, consistent PIA policies convey integrity in the overall process. Also, consistent policies aid in assuring organizational learning is accomplished as Kinsley (2010) explained. He added that proper assessments of safety issues in fire ground and similar operations relied on these consistent policies. Jones (2014) echoed these statements and added that consistency ensures that the focus of the PIA process is largely about the safety of the firefighters.

All of these facts provide for employee buy-in leading to a goal of successful implementation. SBFD employees also agreed with the need for defined PIA policy with several employees stating that more policies in other topics were needed as well. While 73% of the respondents of the internal questionnaire had participated in a PIA process while at SBFD, no consistency was possible as no policy was ever in place. Employees unanimously agreed with the draft PIA policy and felt it was a benefit for SBFD to implement with one adding that it was a more organized and professional way to learn from incidents. Also of importance is the

unanimous agreement to participate in the PIA process by SBFD employees as Finucane (2009) found that the employee's willingness to participate is an important aspect impacting the quality of this process.

After reviewing the material and information obtained from the literature review and the results of this research project, PIA's appear to be a valuable tool for many organizations looking to improving operations. To accomplish this goal, however, consistent policies and procedures based on national standards and recommendations should be developed and implemented. Learning from others successes and failures will allow for a successful PIA policy implementation within SBFD and an assurance that no additional learning opportunities are missed.

Recommendations

To address the absence of a post-incident analysis program within the St. Pete Beach Fire Department and as determined by results of this research project, the following recommendations are made:

- (a) The immediate implementation of the developed standard department policy (SDP) addressing Post Incident Analysis (PIA's).

As a result of this research and based on the presented need of the St. Pete Beach Fire Department, an SDP was developed titled Post Incident Analysis. (see Appendix C) The research and literature review have identified the critical necessity of having a PIA policy in place due to many factors including decreasing incident responses and a less experienced workforce. The quicker the PIA policy is implemented, the higher number of incidents subject to analysis, can be captured. The risk of missing even one critical incident could result in a

missed opportunity to improve safety, enhance operations or provided a learning opportunity. Since the draft policy was sent out to all employees including administrators utilizing an internal feedback platform allowing detailed responses, the chances of acceptance and buy-in are high. Employees and administrators were able to provide recommendations in regards to improvements, additions, and changes to provide ownership and participation in the SDP development which should provide the previously mentioned advantages and lead to a successful implementation.

- (b) Establishment of department-wide training on the developed SDP with routine evaluations and updates as needed.

While the draft PIA policy has already been shared with all employees allowing for input and recommendations, additional training will be necessary to ensure successful implementation. As identified throughout the literature review, PIA policies are often met with uncertainty by employees due to the association with critique like processes. In addition, keys to successful PIA processes revolve around consistency and employee involvement. Department-wide training will allow positive elements of the PIA process to be identified along with critical components to be addressed and discussed. This will allow an opportunity for employees to seek answers to elements that cause them concerns before their involvement in an actual PIA process.

As with any policy or procedure, routine evaluations and updates of the PIA process should be accomplished by department administrators. Each PIA is intended to ultimately improve the overall operations of the fire department. This could be achieved in any number of ways including tactical changes, policy and procedure updates, or additional equipment purchases. Similar to this improvement process, when new information is available or weaknesses are identified, the PIA process should be updated as well.

(c) Development of a method to ensure critical information gathered and determined through the PIA process is shared with automatic aid departments.

St. Pete Beach Fire Department is one of 19 fire departments serving the residents of Pinellas County, Florida. While not a county fire department, all 19 agencies operate under a joint automatic aid agreement ensuring the closest available unit responds to all fire or EMS incidents, regardless of location or jurisdiction. A standardized response protocol is currently utilized, but no reference to PIA's is included. The development of a method to ensure critical information from SBFD's PIA processes will not only benefit SBFD but every agency within Pinellas County.

While additional research should be conducted to determine the best process to share information between departments, ideas such as the Incident Smart software presented in the literature review section should be considered. Incident Smart would provide consistent and shareable documentation allowing other departments to benefit from lessons learned from SBFD incidents.

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Appendix A

E-mail to Representative Sample Fire Departments

My name is Adam Poirrier and I'm a District Fire Chief with the City of St. Pete Beach, FL Fire Department. I'm currently completing my third year of the Executive Fire Officers Program at the National Fire Academy and was hoping you could possibly assist me with a short six question survey. Through research, I have determined that your Fire Department is of similar size and resources as the City of St. Pete Beach.

Like most Fire/EMS providers, we are continuously seeking out ways to improve our operations. My third year paper is focused around the development of a Post Incident Analysis (PIA) program in order to review experiences and lessons learned from problematic incidents and to communicate those findings. The information you provide via the survey link below will be of great importance in the development of such a program. Once complete, I would be more than happy to share any information including the completed report and program should you be interested.

Also, if you have a written SOP, SOG, or some other form of policy covering post incident reviews/analysis, I would greatly appreciate it if you could share a copy for my review. If possible, please e-mail it to me at apoirrier@stpetebeach.org.

The survey instrument can be accessed at:

<https://www.surveymonkey.com/r/S7WX5CN>

If you are unable to "click" on the link above for access, please cut and paste the link into your Web browser.

Thank you very much for your time and I look forward to being of assistance to your department should the need ever arise. Thanks again!!

Adam Poirrier

District Fire Chief
St. Pete Beach Fire Rescue
7301 Gulf Blvd
St. Pete Beach, FL 33706
(727)363-9206
(727)804-5934 (cell)

Appendix B

Sample Fire Department Feedback Instrument

1. Does your department conduct a formal review of significant events or responses such as Post Incident Analysis (PIA)?

- Yes
- No

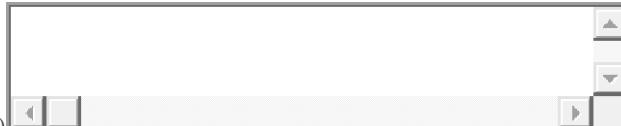
2. If you answered yes to question 1, please continue with the survey. Does your formal review process have a written policy defining the necessary components and steps of the process?

- Yes
- No

3. What do you feel are the necessary basic components of a Post Incident Analysis process? (Select all that apply)

- Introduction
- Ground Rules
- Overview of incident
- Incident review
- Discussion points / Learning objectives
- Performance recognition
- Final review

Other (please specify)



4. What kind of incidents or actions trigger the recommendation or requirement of a Post Incident Analysis? (Select all that apply)

- Multiple alarm fires
- Hazardous material incidents
- Fires with injuries or a fatality
- Fires that exceed a predetermined dollar loss

- Technical rescues
- Incidents with unusual circumstances or unexpected development
- Fires in high-risk buildings
- Incidents in structures where fire protection features influenced event outcomes
- Upon Company Officer or Incident Commander discretion

Other (please specify)

A rectangular text input field with scroll bars on the right side, indicating it is a multi-line text area.

5. Who is responsible for overseeing the Post Incident Analysis process?

- Fire Chief
- Training Officer
- Safety Officer
- Chief Officer
- Incident Commander
- Company Officer
- Line Personnel

Other (please specify)

A rectangular text input field with scroll bars on the right side, indicating it is a multi-line text area.

6. Is the information obtained through the Post Incident Analysis process shared with other employees outside of the actual on scene responders?

- Yes
- No

Done

Appendix C

ST PETE BEACH FIRE RESCUE STANDARD DEPARTMENT POLICY	
SUBJECT: <i>Post Incident Analysis (PIA)</i>	
S.D.P. 302P PAGE 1 of 2	
 CATEGORY: <i>Safety and Training</i>	SUBCATEGORY: <i>Training</i>
APPROVED BY:	EFFECTIVE DATE: REVISION DATE:
FORMS REQUIRED: <i>PIA Review Sheet</i>	

PURPOSE:

St. Pete Beach Fire Rescue is continuously seeking ways to improve services and operations. The purpose of this policy is to establish a guideline for conducting Post Incident Analysis (PIA) following significant incidents. The intent of the PIA is to reinforce positive performances, identify strengths and weaknesses, and utilize lessons learned to develop future training opportunities. Focuses shall be on the overall operations, firefighter safety and survival, and customer service.

302P.1 Policy

While informal post incident analysis (as defined below) can be conducted at the conclusion of any incident upon company officer or incident commander (IC) discretion, the intent of this policy is to establish a detailed guideline as to when a formal post incident analysis (as defined below) will be conducted and procedures to be followed.

Informal Post Incident Analysis: Typically moderated by a company officer, an informal PIA shall review operations and actions on a specific incident or training exercise with a focus on strengths and weaknesses. They will be conducted on a case-by-case basis with a goal of improved overall fire department operations typically accomplished by future training evolutions. No official documentation is needed other than tracking of personnel involved within training software (Target Solutions). Procedures described for formal post incident analysis may also be utilized to assist company officers with informal analysis.

Formal Post Incident Analysis: A detailed review and analysis of large scale, multi-jurisdictional level, and other complex or tactically challenging operations. The formal process is used to determine if the department utilized an appropriate plan and procedures to mitigate the specific incident. Every aspect of the incident shall be carefully analyzed to determine strengths and weaknesses and determine if corrective actions are needed within department operations.

302P.2 Incidents Types Requiring PIA's

- A) Working structure fires
- B) Hazardous material, technical rescue incidents, motor vehicle crashes, or water rescues requiring the response of the Pinellas County Special Operations teams
- C) Fires with injuries or fatalities (civilian and fire personnel)
- D) Incidents with unusual circumstances or unexpected developments
- E) Fires in high-risk buildings
- F) Incidents in structures where fire protection features influenced event outcomes
- G) Mass casualty medical incidents
- H) Upon company officer or incident commander discretion

302P.3 General Process

- A) The incident commander, or fire chief when IC is not available, will initiate and conduct (facilitate) the PIA process. All relevant dispatch information, reports, on-scene photos, or fire pre-plans shall be obtained prior to meeting with members.
- B) PIA's shall be conducted as soon after the incident as practical with early notification (date, time, and location) being provided to all involved parties (Including specialty teams, automatic aid units, etc.).
- C) While a PIA review sheet is provided in this policy for documentation purposes, all basic components are not included. The PIA facilitator shall ensure the following components are included in each PIA:
 1. Introduction with overview of the incident
 2. Incident review (receiving of alarm to returning to service)
 3. Discussion points / Learning objectives
 4. Performance recognition
 5. Final review (what went right, what went wrong, and what recommendations and actions can be done in the future to improve operations)
- D) Future training objectives based on PIA results shall be identified and discussed when applicable.
- E) The facilitator or their designee shall take detailed notes to be forwarded to the fire chief and shared with other department members for training purposes. If corrective actions are needed, they shall be clearly defined after the conclusion of PIA and forwarded to appropriate officer (training, EMS, etc.).
- F) Company officer shall document participation of all personnel within the Target Solutions training system.

303P.4 Critical Points

- A) PIA's shall be conducted on a positive note. PIA's are considered training exercises and designed to improve overall operations of the fire department. "Finger pointing", accusatory remarks, and attempts to find fault will not be tolerated. PIA's are designed to reinforce positive performances and focus on lessons learned.
- B) Discussions shall be fact based and not the opinions of the facilitator or participants.
- C) All involved parties shall be encouraged to speak and be heard.

- D) Any identified safety issues must be addressed through the chain of command or through the safety officer immediately by the facilitator. Reinforcement of firefighter safety by measurement of current levels of safety and identification of areas where safety improvements are needed must be accomplished with each PIA.
- E) Any known policy violations (SDP's, 600 series) or controversial behaviors shall be addressed prior to PIA.

Appendix C (continued)



Post Incident Analysis Review Sheet

Incident Location:	Shift:	Incident Date:
Incident Type:	Incident Commander:	
PIA Facilitator:	Date of PIA:	

Describe building/occupancy conditions on arrival and action taken:

Describe the effectiveness of the operation:

Describe any identified operational issues:

Describe any operations that exceeded expectations:

Discussion Points / Learning Objectives:

ITEMS REQUIRING ATTENTION: (Check all that apply)

Procedures Dispatch Response Procedures Training

Equipment General Operations Protective Clothing Command

Apparatus Other _____

Describe any health and safety related issues:

If health and safety related issues were identified above, please identify who issues were forwarded to for immediate corrective actions: _____

Future training objectives identified:

Appendix D

SBFD Internal Feedback Instrument

1. Have you ever participated in a Post Incident Analysis, Post Incident Critique, Debriefing, or an After Action Review following a significant event while employed with the City of St. Pete Beach Fire Department?

- Yes
- No

2. After reviewing the draft policy regarding post incident analysis, do you feel the program would be beneficial for our department?

- Yes
- No

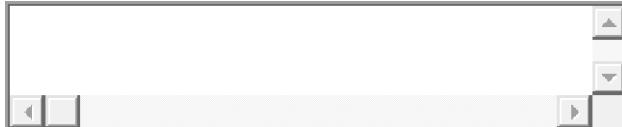
3. Would you be willing to participate in a post incident analysis with a focus on improved services and operations?

- Yes
- No

4. Do you feel the draft policy on post incident analysis could be successfully implemented within our department?

- Yes
- No

5. What components, if any, would you like to see changed on the draft post incident analysis policy prior to implementation?



Done

Appendix E

E-mail to SBFD Employees

Hello All,

As you may know, I'm currently completing the Executive Fire Officer Program at the National Fire Academy. As a requirement of this program, I'm working on my 3rd Applied Research Project related to my most recent course titled, Executive Analysis of Fire Service Operations in Emergency Management. The topic of my research must relate to the program in which I just completed and be an issue or subject that could benefit our fire department. I have decided on the topic of Post Incident Analysis (PIA) due to the fact that we do not currently have a policy in place and the high potential benefit to our department if one were implemented. Post incident analysis are used worldwide to review critical events by identifying strengths and weaknesses, reinforce positive performances, and utilize information gathered to develop future training opportunities.

As with many policies or procedures, I see great benefits from allowing employees to review drafts and provide feedback prior to implementation. This holds especially true with new concepts such as PIA's. Having said that, I would greatly appreciate all of your input and assistance with this research project.

I have developed and attached a draft form of a post incident analysis program for our department along with a PIA review sheet. I would greatly appreciate it if you would review the documents and then provide me with feedback utilizing the SurveyMonkey link located below. The survey is only 5 questions long and will not take you very long at all to complete. Your feedback will provide me with extremely valuable information in order to complete this project and hopefully submit this policy for future implementation.

If you have any questions or would like additional information on this subject, please feel free to ask me. Thanks you in advance for your time and feedback!!!

<https://www.surveymonkey.com/r/K5KKVKN>

Adam

Appendix F

Representative Sample Fire Departments Contact List

DEPARTMENT NAME	CONTACT NAME	CONTACT EMAIL
Auburndale Fire Department	Ronnie Hall	rhall@auburndalefl.com
Avon Park Fire Department		jlister@avonpark.cc
Boca Grande Fire Department	C.W. Blosser	bocafire302@comcast.net
Brooksville Fire Department	Stan Mettinger	smettinger@cityofbrooksville.us
Callaway Fire Department	David Joyner Jr.	djoyner@cityofcallaway.com
Captiva Island Fire Control	Rich Dickerson	rdickerson@captivafire.com
Cocoa Beach Fire Department	Ryan Duckworth	fire@cityofcocoabeach.com
Coconut Creek Fire Rescue	Christine Laurie	claurie@coconutcreek.net
Daytona Beach Shores	Website Contact	Website Contact
Defuniak Springs Fire Department	Charles Burney	charlesb@defuniaksprings.net
Destin Fire Control District	Kevin Sasser	contact@destinfire.com
East Niceville Fire District	Michael Wright	chief13@enfd.net
Edgewater Department of Fire	Stephen Cousins	Website Contact
Eustis Fire Department	Michael Swanson	Website Contact
Fernandina Beach Fire Rescue	Ty Silcox	tsilcox@fbfl.org
Glendale Volunteer Fire Dept	Chris Postell	Website Contact
Greenacres Fire Rescue	Willie Morgan	groupps@ci.greenacres.fl.us
Groveland Fire Department	James Marenkovic	willie.morgan@groveland-fl.gov
Gulfport Fire Department	Jim Bland	jmarenkovic@mygulfport.us
Holly Hill Fire Department	David Whitmill	firechief@hollyhillfl.org
Indian River Shores Fire	Bob Garlo	chall@irspsd.org
Jacksonville Beach Fire Dept	Eric Lane	Website Contact
Jupiter Island Fire Rescue	Frank Cornier	publicsafety@tji.martin.fl.us
Key Biscayne Fire Rescue	Joe Jenkins	elang@keybiscayne.fl.us
Lake Mary Fire Department	David Donzella	Website Contact
Lake Wales Fire Department	Chad Croft	ddonzella@lighthousepoint.com
Lighthouse Point Fire Department	Paul Dezzi	ccroft@cityofliveoak.org
Live Oak Fire Department	Paul Ross	pdezzi@longboatkey.org
Longboat Key Fire Rescue	John Delonjay	pross@longwoodfl.org
Longwood Fire Rescue	Derrl O'Neal	firedept@cityoflynnhaven.com
Lynn Haven Fire & Emergency	Kimberly Neisler	doneal@maderiabeachfl.gov
Maderia Beach Fire Department		kneisler@itsmymaitland.com
Maitland Fire Department		

Marathon Fire Rescue	John Johnson	johnsonj@ci.marathon.fl.us
Marco Island Fire Rescue	Chris Byrne	byrnec@cityofmarcoisland.com
Marianna Fire Rescue	Nakeya Lovett	lovettn@cityofmarianna.com
Midway Fire District	Johnathan Kanzigg	jonathan.kanzigg@midwayfire.com
Milton Fire Department	Chief Reble	fire@mymiltonflorida.com
Mount Dora Fire Department	Stephen Kerkhof	kerkhofs@ci.mount-dora.fl.us
New Port Richey Fire Department	Christopher Fitch	fitchc@cityofnewportrichey.org
Niceville Fire Department	Walter Mayville	tmayville@niceville.org
North Bay Fire Control District	Byron Bennett	babennett@northbayfd.org
North Lauderdale Fire Rescue	Rodney Turpel	rтурpel@northlauderdale.org
North Palm Beach Fire Rescue	J.D. Armstrong	firechief@village-npb.org
Okaloosa Island Fire District	Robert Tilley	rtilley@oifd.org
Okeechobee Fire Department	Herb Smith	hsmith@cityofokeechobee.com
Oldsmar Fire Rescue	Dean O'Nale	donale@myoldsmar.com
Orange Park Fire Department	Alvin Barker	firechief@orangeparkfire.com
Palatka Fire Department	Mike Lambert	Website Contact jdaly@pcbfir.com
Panama City Beach Fire Dept	John Daly	dazzariti@plantcitygov.com
Plant City Fire Rescue	Daniel Azzariti	dscales@ponce-onlet.org
Ponce Inlet Fire Rescue	Dan Scales	cbridges@myquincy.net
Quincy Fire Department	Curtis Bridges	jaccetta@cityofsafetyharbor.com
Safety Harbor Fire Department	Joe Accetta	sfrd@sanibelfire.com
Sanibel Fire & Rescue District	Matt Scott	bradbatz@mysebring.com
Sebring Fire Department	Brad Batz	dgiles@southdaytona.org
South Daytona Fire Department	David Giles	deputychief@mysouthpasadena.com
South Pasadena Fire Department	Emery Culverhouse	bwalls@springfield.fl.gov
Springfield Fire Department	Brandon Walls	cityfire@citystaug.com
St. Augustine Fire Department	Carlos Aviles	
St. Pete/Clearwater Airport Fire	Tom Rowe	firerescue@cityofstarke.org
Starke Fire Department	Richard Keith	rkeith@tavares.org
Tavares Fire Department	Ian Kemp	ikemp@templeterrace.com
Temple Terrace Fire Department	Joel Medina	Website Contact Website Contact
Tequesta Fire Rescue	Joe Manning	jmanning@mytreasureisland.org
Tice Fire District	Daniel Spillman	firechief@fire.zephyrhills.fl.us
Treasure Island Fire Department		
Zephyrhills Fire Rescue		

Appendix G

Representative Sample Fire Departments Detailed Feedback Results

1) Does your department conduct a formal review of significant events or responses such as post incident analysis (PIA)?

Department Responses	
Yes	10
No	15
Survey not returned or not answered	

2) If you answered yes to question 1, please continue with the survey. Does your formal review process have a written policy defining the necessary components and steps of the process?

Department Responses	
Yes	5
No	5
Survey not returned or not answered	

3) What do you feel are the necessary basic components of a post incident analysis process? (Select all that apply)

Department Responses	

Introduction	6 (54.55%)
Ground rules	7 (63.64%)
Overview of incident	10 (90.91%)
Incident review	11 (100.00%)
Discussion points / Learning objectives	10 (90.91%)
Performance recognition	9 (81.82%)
Final review	10 (90.91%)

Additional comments provided by departments:

- Lessons learned and what we would do differently
- This is a new SOP and is still being developed for the organization
- What went right, what went wrong, lessons learned
- Input from officers and other personnel
- Identify training needs or opportunities
- Fortunately we have not had any major events requiring such a review. We do hold

PIA's on scene immediately after an event. hope it helps

4) What kind of incidents or actions trigger the recommendation or requirement of post incident analysis? (Select all that apply)

Department Responses	
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Multiple alarm fires	5 (45.45%)
Hazardous material incidents	4 (36.36%)
Fires with injuries or fatality	8 (72.73%)
Fires that exceed a predetermined dollar loss	3 (27.27%)
Technical rescues	4 (36.36%)
Incidents with unusual circumstances or unexpected development	7 (63.63%)
Fires in high-risk buildings	6 (54.55%)
Incidents in structures where fire protection features influenced event outcomes	5 (45.45%)
Upon Company Officer or Incident Commander discretion	11 (100.00%)

Additional comments provided by departments:

- Any incident involving the death of a child Incident requiring CISM
- Some analysis is conducted on every scene that a commander shows up and takes command

5) Who is responsible for overseeing the post incident analysis process?

Department Responses	
Fire Chief	4 (40.00%)
Training Officer	0
Safety Officer	0
Chief Officer	1 (10.00%)
Incident Commander	5 (50.00%)
Company Officer	0
Line Personnel	0

Additional comments provided by departments:

- Commander
- We are a small department which has the Fire Chief as the only 40 hour officer. The Fire Chief and or IC conduct the PIA'S. I find it better to have someone who was not at the scene facilitate the PIA
- With regard to question 6 - if something significant is learned, that is shared on an as needed basis. used for training or reinforcing purposes usually

6) Is the information obtained through the post incident analysis process shared with other employees outside of the actual on scene responders?

Department Responses	
Yes	11

No	0
Survey not returned or not answered	

Appendix H

SBFD Internal Feedback Detailed Results

Employee Responses	Yes	No
Question 1 – Participation in PIA while at SBFD	8	3
Question 2 – Would PIA program be beneficial at SBFD	11	0
Question 3 – Willing to participate in PIA	11	0
Question 4 – PIA policy successfully implemented at SBFD	11	0
Question 5 – Changes needed to PIA policy prior to implementation	See details	See details

Complete question verbiage and detailed responses from employees where applicable:

- 1) Have you ever participated in a Post Incident Analysis, Post Incident Critique, Debriefing, or an After Action Review following a significant event while employed with the City of St. Pete Beach Fire Department?**
- 2) After reviewing the draft policy regarding post incident analysis, do you feel the program would be beneficial for our department?**
- 3) Would you be willing to participate in a post incident analysis with a focus on improved services and operations?**
- 4) Do you feel the draft policy on post incident analysis could be successfully implemented within our department?**
- 5) What components, if any, would you like to see changed on the draft post incident analysis policy prior to implementation?**

- “Not that I saw any improvements to the draft but the fact that more policies should be put into place at this department.”
- “None, I liked all of the components. It is a more organized professional way of learning from incidents while encouraging positive reinforcement”
- “Maybe make note that dispatch notes and possibly radio tapes can be used. The dispatch notes would make a good road map to follow.”
- “I do not feel that any changes need to be made to the policy.”
- “I don’t see any components that need changed prior to implementation.”
- “I do not have any recommended changes for the draft policy.”