Post Incident Review Program for the Victoria Fire Department

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Appendices Not Included. Please visit the Learning Resource Center on the Web at http://www.lrc.dhs.gov/ to learn how to obtain this report in its entirety through Interlibrary Loan.
Abstract

The problem is the Victoria Fire Department’s post-incident review program is inconsistent and ineffective at sharing the lessons learned beyond the members present at the review. This ineffective practice has allowed valuable lessons and experiences to be lost to time and put other members at risk to injury. Within the past year the Victoria Fire Department has experienced several unique incidents that were firsts for the department, or at least for the current members of the department, some which have over thirty (30) years of experience. The incidents include a large commercial warehouse fire, a fire in a medical lab, tank battery fires, several large wild land fires with urban interface problems, and two separate confined space rescues within IDLH environments. The failure to share the lessons learned from these incidents has motivated the author to conduct this research.

The purpose of the action research is to identify a post-incident review process that is consistent, effective, and allows the lessons learned to be shared with all members of the Victoria Fire Department. With a consistent and effective review process all fire fighters can gain valuable knowledge from each others’ experiences. This sharing of information will improve fire fighter safety through improved situational awareness on all operational levels.

The following questions shall be answered during the research: 1) what type of incidents require what type of post-incident review, 2) what information should be included in the informal and formal post-incident review, 3) what type of post-incident review processes are being used by other departments, 4) what is the best method for
producing and distributing the information and lessons learned identified in the post-incident review?

The research shall be conducted with the assistance of a comprehensive literature review and survey. The survey was distributed to every officer of the Victoria Fire Department Operations Division. The survey focused on the content and administration of a Post-Incident Review Program. The results from the survey and literature review were assessed and compiled to form a Post-Incident Review Manual Page for the Victoria Fire Department.

Following the implementation of the Post-Incident Review Manual Page, the program was evaluated and the following recommendations were made. One recommendation is to conduct post-incident review training for all officers, to include communication skills for effective critiques. The next recommendation included creating and adding an On-Scene Review Q-Card to each unit. This Q-Card will ensure that the On-Scene Review is conducted in a consistent manner and important topics are not overlooked. The final recommendation was to ensure a Lessons Learned Report be submitted for each On-Scene and Formal Post-Incident Review. This recommendation would ensure valuable experience and lessons learned would be passed on to all.
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Introduction

Post-Incident Review is a key component in improving fire fighter situational awareness and reducing fire fighter death and injury. Unfortunately, many fire departments fail to establish a consistent post-incident review program for various reasons. One reason that is frequently cited is an established culture of protecting or not sharing information. As Ockershausen states, a decrease in experience for fire fighters has occurred over the past decade due to a decline in fire responses and the retiring of the fire service work force that has the majority of the fire experience. The post-incident review is an effective way to combat this trend in the fire service. Post-incident reviews give fire fighters a clear idea of how their actions directly impacted the outcome of the incident, thus allowing improvements to be made or successful tactics to be standardized (2008).

The problem is the Victoria Fire Department’s post-incident review program is inconsistent and ineffective at sharing the lessons learned beyond the members present at the review. This ineffective practice has allowed valuable lessons and experiences to be lost to time and put other members at risk to injury.

The purpose of the action research is to identify a post-incident review process that is consistent, effective, and allows the lessons learned to be shared with all members of the Victoria Fire Department. With a consistent and effective review process all fire fighters can gain valuable knowledge from each others’ experiences. This sharing of information will improve fire fighter safety through improved situational awareness on all operational levels. The action research shall be conducted with the assistance of a comprehensive literature review and survey.
The following questions shall be answered during the research: 1) what type of incidents require what type of post-incident review, 2) what information should be included in the informal and formal post-incident review, 3) what type of post-incident review processes are being used by other departments, 4) what is the best method for producing and distributing the information and lessons learned identified in the post-incident review?

The ultimate goal of this research is that experience and lessons learned are shared with all members. Through an efficient and effective post-incident review program the Victoria Fire Department hopes to improve each fire fighter’s ability to assess the situation and make accurate decisions to ensure fire fighter safety and correct incident mitigation. Improving fire fighter situational awareness is essential to improving fire fighter safety.

Background and Significance

The Victoria Fire Department is a full career department that employees one hundred (110) uniformed members. The department provides a vast array of emergency services including fire protection, emergency medical services, technical rescue, and emergencies involving hazardous materials. The Victoria Fire Department responds to approximately 7500 emergency incidents per year in a jurisdiction that has approximately 65,000 residents within the city limits and another 25,000 in the surrounding rural countryside. The department is divided into three divisions, Operations, Administrative Services, and Life Safety. The department works on a 24/48 hour shift rotation divided between three shifts.
The leadership of the department is consists of the Fire Chief, three (3) battalion chiefs responsible for the Operations Division, and Administrative Chief in charge of the Administrative Division, and a Fire Marshal that maintains the Life Safety Division. The previously mentioned leadership positions make-up the Victoria Fire Department Chief Officer Team. One Battalion Chief is assigned per shift and responsible for ensuring the shift is meeting the goals of the department and following the department policies and procedures, as well as, supervising all emergency incidents. Each shift is then lead by two (2) Captains, and five (5) Lieutenants. The Captains are responsible for ensuring the day-to-day functions of the shift are being met. The Lieutenants are responsible for managing and leading their assigned companies, usually consisting of an engine company and medic unit. Each officer has a chain of command ratio of approximately 6:1.

The problem the Victoria Fire Department Leadership is facing is a problem affecting all fire departments across the Nation. A reduction in high risk – low frequency incidents has reduced the “hands-on” experience needed to effectively mitigate these types of situations. On the job training is not necessarily the best method of preparation for a high risk – low frequency event, especially for new officers, but many times this is the first time the officer is faced with this life threatening situation.

Within the past year the Victoria Fire Department has experienced several unique incidents that were firsts for the department, or at least for the current members of the department, some which have over thirty (30) years of experience. The incidents include a large commercial warehouse fire, a fire in a medical lab, tank battery fires, several large wild land fires with urban interface problems, and two separate confined space rescues within IDLH environments. Although a great amount of knowledge and experience was
gained during these events by the members on scene; the Victoria Fire Department failed to ensure this valuable information and experience was passed on to all its members.

The Victoria Fire Department does conduct thorough and effective Post-Incident Reviews for all major incidents but the format and scope is left up to the responding Battalion Chief and/or Incident Commander(s). This practice provides for inconsistent reviews and could potentially leave out valuable information. Also the reviews are limited to the members on scene and not published for review by peers and associates.

As emergency services providers we cannot predict when the next major incident will occur; all we can do is prepare our members for high risk – low frequency incidents by ensuring Post-Incident Reviews are conducted frequently, consistently, open to any and all members of the department, and published for other departments and peers to review. The author’s goal for the research is to identify a Post Incident Review process that will ultimately help improve fire ground safety and reduce fire fighter injury and death through improved situational awareness.

The research follows the Executive Leadership Course theory and practices of obtaining feedback for better results, the importance of situational awareness, and the importance for fire executives to be able to change the established culture. Like the leadership survey instruments completed for the course, feedback gained in an effective Post Incident Review would be invaluable. As we learned while studying the Battle of Gettysburg, situational awareness is critical to winning the battle and sometimes established cultures need to change so improvement can be made.

The United States Fire Administration (USFA) Operational Objectives that are addressed by this applied research project are Objective 3.1, improve the Nation’s
incident decision-making skills and Objective 3.2, Advocate a culture of health, fitness, and behavior that enhances emergency responder safety and survival. Analyzing and sharing learned information from critical incidents is an emerging issue in the fire service due to its impact on improving situational awareness thus improving fire fighter safety. As the research shall show an effective Post Incident Review program will enhance the ability of fire fighters to quickly obtain situational awareness and make decisions to ensure fire fighter and civilian safety. As we look across the Nation’s Fire Service, someone’s fire today will be someone’s fire tomorrow and we can not only learn from our own experiences but the experiences from our peers across the Nation. We must create a culture in our organizations where experience is passed down openly and freely and without cost instead of tightly guarded secrets that cannot be shared.

Literature Review

It is evident that post-incident reviews, critiques, are more necessary now for the fire service than they have ever been. Due to the steady reduction in total fire responses and the retiring generations of fire fighters; the sharing of knowledge and experience is crucial to the success of newly promoted officers and the fire service. Many fire departments conduct post-incident reviews only when a major incident occurs, such as a loss of life. Others conduct reviews consistently, but do not have a policy or procedure in place to ensure the critique is valuable and can be shared with others. Finally, where most departments miss the biggest opportunity to make improvements through the use of critiques is a lack of an informal post-incident review process directly following an incident. The literature review shall discuss the benefits of the formal and informal post-
incident review, how reviews should be conducted, and what should be included in a formal report.

To begin, a post-incident review or “critique” is defined as a fact finding process that allows for the chance to record pieces of information that identify how personnel responded from a strategic, tactical, and task level. The review allows for the assessment of all emergency operations, as well as training effectiveness, and accuracy of the policy and procedures. The lessons learned from post-incident reviews are used to correct policy deficiencies, as well tactical and task level problems (Ockershausen, 2008).

Not all post-incident reviews are equal in scope and complexity. There are two types of post-incident reviews that are used in the fire service: formal and informal. Ockershausen defines informal reviews as critiques conducted mainly at the company level, but not limited to one company, and usually focuses on task and tactical issues of the incident. Informal reviews are conducted on a case-by-case basis at the discretion of the Incident Commander (IC) or company officer. When possible, the informal review should be conducted on scene directly after the incident. Each member of the company is allowed to provide insight into what they saw, discuss actions, and identify problems they may have encountered (2008). Special considerations for effective informal post-incident reviews are discussed further in the literature review.

The formal post-incident review is defined as a detailed review and analysis of large-scale or complex incidents. Some examples include technical rescues, incidents that caused death or injury to fire fighters, multiple alarm incidents, and natural disasters. The goal of the formal post-incident review is not only improving task and tactical operations, but strategic issues such as policy and procedures, mutual aide agreements,
and staffing issues to name a few. The formal review is conducted a few days after the incident with all members involved attending. The review should be conducted in a comfortable environment with all the necessary audio/visual support. A critique officer is assigned to assure all the information is gathered and formatted for the review. The formal review should follow a predetermined agenda and procedure. Finally, a formal review also has a documented report that summarizes the incident, identifies the issues discovered in the review, as well as recommendations based on the lessons learned (Ockershausen, 2008). Techniques for conducting an effective formal post-incident review will be discussed further in this research.

Research has indicated that one problem with post-incident reviews is the lack of openness and honesty. Gayk documents in his article that fire fighters don’t want to be embarrassed, or embarrass any other fire fighters as one of the reasons post-incident reviews lack honesty or full disclosure. He also states that post-incident reviews are worthless unless there is complete openness and honest discussion. Problems cannot be improved if they are not discussed. Gayk states that reviews are best conducted directly after an incident to prevent members from justifying mistakes to themselves or recreating the event to hide the mistakes (Gayk, 2007).

Gayk stated the goal of any post-incident review is to learn from our mistakes. To produce a culture of open and honest review one must begin by critiquing oneself. Always remember to discuss the good things that happened during the incident. Allow members to fully explain their actions and reasons for doing what they did. Always use tact when correcting problems and have an alternative to the way things were done.
These actions will help improve post-incident reviews through improving the culture and making them an opportunity to learn (Gayk, 2007).

The informal post-incident review has become more popular and recommended according to the literature review. In his article, Curbside Critiques, DeStefano stated that these lower level reviews can be used to evaluate the effectiveness of SOPs and improve our daily response and actions to our more common incidents. He also stated that the reviews should be brief and concise and weather conditions taken into consideration. Extreme heat or cold could impact the review in a negative manner. The review allows everyone to give input with the incident commander (IC) as the moderator. These types of reviews ensure all parties involved in the incident are present. The actions are fresh on everyone’s mind. Alternatives can be developed and tested. SOPs can be clarified and improved upon (DeStefano, 2007).

Brennan (1996) explains that a critique should begin after being released from control operations and before putting the apparatus back together. This allows for the participants to truly get a picture of the incident and how each component played in the outcome. Hoses, apparatus, and the structure itself are great visual references and most people learn through visual reference. Brennan also suggested that these informal reviews be consistent to encourage members to remember their actions and how to communicate with other team members on how to improve on the fire ground. A key benefit to the informal critique on the fire ground is that each member understands their role in the outcome of the incident, why it is important (Brennan, 1996).

When curb-side reviews are conducted a standard template should be followed. The company officers should identify what were the critical factors as they observed, what
was the risk management profile and strategy, what was the incident action plan and how did it address the tactical objectives, and what actions did your company take. These questions give some order to an informal and spontaneous process (Hinton, 2005).

Avillo expressed that one concern with tailboard critiques is that it is great for all members present but the information is not passed on to other firefighters. Avillo recommends the following items be reviewed when the strategic, tactical, and task level issues are reported: communications, apparatus positioning, company integrity, safety, and finally lessons learned. Once these topics have been discussed, anyone may be allowed to speak regarding the incident. He recommends an after action report is then filed with the training office and chief of the department so other members not present can learn from the incident (Avillo, 2008).

One negative aspect of the informal post-incident review is that the lessons learned are rarely shared with members outside the incident. Information gained through any post-incident review should be collected and displayed for other firefighters to review and gain important lessons (Hultman & Tippett, 2006). One way this can be accomplished is through a system that collects data and displays on the World Wide Web similar to what is used by the National Near-Miss Reporting System.

The incident scope and size may require that a formal post-incident review be conducted. The formal post-incident review not only allows for learning and development of emergency responders, but is also used as a political tool and shared with multiple agencies and elected officials to justify expenditures or strengthen agreements and contracts. The following literature review shall focus on the components needed to develop an effective formal post-incident review.
After establishing a critique officer, one of the first things that should occur is the collection of important information from as many sources as possible. This can be accomplished by an established post-incident questionnaire. A typical post-incident questionnaire should have the following components: incident data, initial strategy, tactics, problems encountered, and ICS organization. The post-incident questionnaire is used more frequently for the formal review but can be used for any level of critique. The goal of the questionnaire is to identify discussion points, understand what took place during the incident, and identify the positive and negative actions of the incident. The questionnaire also allows for the members to feel they are involved in the critique process, thus creating an environment of learning and not blaming. Questionnaires should be sent out within a couple days of the incident to all ranks that participated in the incident with a specific deadline for return (Ockershausen, 2008).

The formal post-incident review meeting should have a formal agenda to ensure the meeting remains on track and important issues are discussed. The critique officer must ensure that all the appropriate audio-visual aids and equipment are available and ready for use. Audio recordings of the incident as well as any photos or videos of the incident shall be very beneficial to the review and learning process. A member should be appointed to take notes and document the discussion presented during the review. A videotaped review is also a very effective way to share the information gained during the review with others that could not attend and future members (Ockershausen, 2008).

Ockershausen (2008) identified the basic topics or format for the formal post-incident review. They include the introduction, ground rules, overview, incident review, discussion points, and performance recognition.
The introduction should explain the purpose and objective of the review. It should also be noted that the review is not a blame session and encourage participation by all and communication should be in a respectful to all participants.

The ground rules outline the time constraints of the review and remind participants that dialog should not be directed at individuals and conducted in a professional manner. The critique officer should remind everyone to hold questions and comments until the discussion part of the review.

An overview of the incident is communicated following the ground rules. The overview should be brief and describe the type of incident, date, time, type of structure, location, and weather conditions at the time of the incident. If available the tactical pre-plan should be reviewed during this point of the review. The overview should also include the dispatch information and all units that responded to the incident.

The incident review discusses the strategic, tactical, and task level operations of the incident. The incident review should begin with input from the first arriving unit and progress in sequence with all the units that arrived on scene. Each unit should describe what they saw, their actions, and any problems they encountered and how they were resolved. The incident organizational chart should also be displayed at this point of the review.

The critique should begin to wrap up with open discussion about the incident. The discussion should focus on what went well and what needed to be improved upon. SOPs and other policies can be reviewed at this point to see any adjustment needs to be made to improve operational effectiveness.
Finally, every post-incident review should end with the recognition of exceptional performances. This will help build morale and develop confidence in the critique process.

The last component of the formal post-incident review is the formal report. The final report summarizes the incident, identifies recommendations for improving operational effectiveness based on lessons learned identified in the post-incident review process. The final report should closely follow the meeting format with an introduction, overview, incident review, discussion points, and lessons learned. If major issues are identified in the lessons learned section the administration should also include an action plan describing how the problems identified will be addressed (Ockershausen, 2008).

In Wong’s (2004) applied research regarding post-incident reviews he recommended that all formal reviews be documented and filed and in the department’s training division for review by all members and for training material for fire academies. His research also recommended that the reports be distributed and posted at each station for training.

The incident safety officer’s participation has not been discussed in the literature to this point. The safety officer, as recommended by NFPA 1561: Standard on Emergency Services Incident Management System is to participate in the post-incident review. The safety officer should report any issues relating to the safety and health of the emergency responders. The safety officer should also include in the report details regarding personal protective equipment, accountability system and function, rapid intervention activities, medical and rehab status, and any other issues that affected the safety and welfare of the emergency responders (National Fire Protection Association, 2007ed).
Many critiques focus on reviewing the tactical and task level operations of the incident and fail to assess the strategic components. Incident reviews should begin with an analysis of the strategy initiated during the incident. The analysis of strategy is important because it drives the tactical and task level operations of the incident (Brunacini, 2002).

Brunacini (2002) recommended that post incident reviews address the strategic component of an incident by asking the following questions: 1) What was the initial strategy, 2) why was this strategy selected, 3) Was an adequate size-up performed and critical incident factors identified, 4) Was an incident action plan developed and did it match the strategy, was the risk management plan followed?

When discussing post-incident reviews, formal or informal, rarely are the common pitfalls noted or addressed. One of these common pitfalls is second guessing first due companies. The leader of the review must understand that not all information is available at the time of arrival and if something critical is missed it should be addressed as a lesson learned. Another pitfall is allowing individuals or groups to interrupt the review with argumentative behavior. The review is for discussion not arguments. If the Incident Commander had a serious issue with a member or company, the Incident Commander should address them individually (Hinton, 2005).

Another form of review or critique that has not been discussed is the self-critique. The self-critique is conducted on an individual basis and doesn’t involve any other member and is focused on the specific actions of the individual. This is an important task for all members of the team and will assist with self-improvement and professional development (Smith, 2006). After each incident, the member should take a minute and answer the following questions: 1) what were my areas of responsibility? 2) How well
did I accomplish these responsibilities? 3) were my actions safe for me and my team? 4) did my actions assist in accomplishing the overall strategy and action plan? 5) what action or skill could be improved upon?

A self-critique should be conducted after every incident. The self-critique focuses on the member’s individual performance and its impact on the overall operation. It also provides the member with an opportunity to assess their required skill sets and decision making ability on their individual level of responsibility. Some questions that a self-critique should include: did I size-up the incident correctly, was the layout what I thought, was the fire or problem where and what I thought, were the correct tools and equipment deployed to resolve the problem, what would I do different, were there any safety issues, and did I experience any problems that need to be addressed on a department level (Ward, 2003).

In summary, the literature review has not only identified the different types of post-incident reviews and their benefits, but how, when, and where they should be conducted. As expected, the literature review captured the importance of the formal post-incident review and how it can improve performance and facilitate change. What was unexpected was the discovery of how important a role the informal post-incident review can play in improving the day-to-day operations of the department. Another interesting aspect of post-incident review discovered in the literature review was the self-critique. Although informal, consistency and structure shall make this practice more beneficial. The self-critique is an effective tool that many fire fighters use without a thought to improve their skill and ability. Once again, adding structure to the process along with teaching the process will help fire fighters self-improve their skills and ability. Lastly, technology has
improved the fire services’ ability to share knowledge and lessons learned with others. For example the Near-Miss Reports are available on-line. The challenge for the fire service is extracting those lessons learned and putting them out there for the world to learn from.

Procedures

The action research method was chosen in an effort to ensure a post-incident review process that allows for the critical information and lessons learned during all types of emergency incidents to be shared with all Victoria Fire Department Members and peer organizations. The sharing and distribution of this information will improve situational awareness by all members and potentially reduce fire fighter death and injury. The applied research was divided into two parts. The first part of the research consisted of a literature review and analysis of the various forms of post-incident reviews, and the second involved issuing a survey to the VFD Operations Division Officer Corp.

The literature review and analysis consisted of review of the various fire service professional journals, text books, and internet searches regarding the subject of post-incident reviews. The author also reviewed fellow EFO students’ applied research projects regarding the post-incident review process. The review of the identified literature and the applied research projects allowed the author to answer the research questions: 2) what information should be included in an informal and formal post-incident review process? and 3) what type of post-incident review processes are being used by other departments?

The Post-Incident Review Survey (Appendix A) was issued to all VFD Operations Officers during the month of September 2009. The VFD Operations Officer Corp is
comprised of twenty-seven (27) officers of various rank including Battalion Chief, Captain, Lieutenant, and Inspector/Investigator. The sample size of the survey was a hundred percent of the Operations Officer. The sample size was selected because the author determined it was logistically possible to distribute and receive close to a hundred percent of the surveys. The survey was completed with at least one question answered by twenty-five (25) officers, which was a 92.5% return rate for the survey. The survey was accompanied by a letter (Appendix B) with instructions on how to complete and return the survey to the author.

The Post-Incident Review Survey was designed to answer the following research questions: 1) what type of incidents should require what type of post-incident review?, 2) what information should be included in an informal and formal post-incident review process?, 4) what is the best method for producing and distributing the information and lessons learned gained by a post-incident review?

The limitations of the research were based on the survey participant’s knowledge of the post-incident review process. Many of the survey participant’s only experience with post-incident review programs is with the Victoria Fire Department and other local jurisdictions. The Victoria Fire Department does not have a formal post-incident review policy or procedure and reviews are inconsistent from shift to shift and officer to officer. The lack of policy and consistent practice may have restricted the survey participants’ ability to understand the concept and questions regarding the post-incident review process included on the survey.

Another limitation to the research was that the members of the Victoria Fire Department or not familiar with the informal post-incident review process. Most post-
incident reviews are conducted in the formal setting. The informal post-incident review process was a key component of the survey and the research. Limited knowledge of the informal process could have influenced the answers on the survey.

As the research and results shall show, although the formal post-incident review process is important and necessary, the informal post-incident review should receive more focus by fire departments to improve their day-to-day operations.

Results

Through the action research model the author discovered sufficient information to support the problem statement and answer the research questions, allowing for the development of an effective post-incident review program. The information for this research was obtained through a survey issued to the Operations Officer Corp of the Victoria Fire Department and a literature review of post-incident review and analysis programs.

The Post-Incident Review Survey answered the research questions: 1) what type of incidents should require what type of post-incident review?, 2) what information should be included in an informal and formal post-incident review process?, 4) what is the best method for producing and distributing the information and lessons learned gained by a post-incident review?.

The survey helped identify the key components needed to manage and administer the post-incident review program specific to the Victoria Fire Department. The survey was issued to all VFD Operations Officers and focused on the issues such as, what type of incidents require a formal or informal review, who should conduct the review, when
should the meeting be conducted, what information should be included in the review, and how should the lessons learned be shared with others.

The Survey Results (Appendix C), revealed the following information. In regard to what type of incidents should require a formal post-incident review fifty percent (50%) of respondents felt the following incidents should require a formal review: working structure fire, haz-mat incident, technical rescue, or at the discretion of the Incident Commander or Battalion Chief.

A majority of the survey respondents indicated that the following incidents should be addressed with an informal post-incident review: still alarms, medical emergencies, o at the request of any member on scene.

The survey results also indicated the best time to conduct the formal post-incident review was the following shift of the on duty crew that worked the incident. The survey also offered within forty-eight (48) hours, within seven (7) days, and with fourteen (14) days as possible answers.

The survey results also indicated that the Incident Commander or the Battalion Chief should conduct the formal post-incident review meeting. The training office as well as the Fire Chief were also selections on the survey, but received minimal support.

The results also indicated that a majority of survey participants feel that the formal post-incident review meeting should only be attended by members that were present at the incident. Slightly less than the majority felt that any member of the department should be able to attend the formal post-incident review meeting.

A majority was not established for the survey question regarding how the post-incident review report should be distributed. A published and distributed document
received the most support from the survey participants. Other options included on a private network used by the Department, the internet via Department Website, all of the above, or none of the above. The question also allowed for comments from the participants. Some of the responses included that other departments should be made to purchase a copy and the report should only be issued to members on the scene.

Lastly, the survey asked what information should be included in the post-incident review. The survey participants indicated the following:

- Weather
- Situational Awareness Factors
- Ventilation Tactics
- Fire Attack Tactics
- Initial Size-up
- Lessons Learned
- Identified Problems
- Initial Actions
- Dispatch Information
- What Went Well
- Safety Concerns
- Alternative Techniques
- Benchmark Status/Time
- Casualty Report
- Initial Action Plan
- Assess Need for Additional Resources
In summary, the internal survey provided beneficial information to answer the research questions and achieve the purpose of the applied research. The survey indicated in questions one (1) that the informal post-incident review should be reserved for the smaller scale incidents and handled by the Company Officer or Incident Commander. The larger incidents, such as, technical rescues, haz-mats, and multiple alarm fires require the formal post-incident review conducted by the Incident Commander or Battalion Chief.

Research question two (2) identified what information should be included in a post-incident review process. The answers are included in the above list.

Research question four (4) identified the best method for producing and distributing the information and lessons learned gained by a post-incident review. The survey participants were split on this question and a majority established for a specific method. The participants were equally divided between the options that provided full disclosure of the post-incident review report and limited if any disclosure of the report.

The second part of the applied research included a literature review and assessment of how other departments were conducting post-incident reviews. The questionnaire was designed to answer the following research questions: 2) what information should be included in an informal and formal post-incident review process?, and 3) what type of post-incident review processes are being used by other departments?

In regard to research question two (2), the literature review produced significant input not gained from the survey on what type of information should be included in the informal and formal post-incident review.
The informal post-incident review should be conducted in standard manner and include specific questions or discussion points. The critical incident factors should be identified as they were observed, identify and discuss the risk management profile and strategy, review the incident action plan and how it addressed the tactical objectives, and discuss the specific actions of each company. This template allows the informal post-incident review to be consistent from incident to incident and ensures certain questions are discussed (Hinton, 2005).

Avillo recommends the informal post-incident review discuss; along with strategy, tactics, and tasks; incident communications, apparatus positioning, company integrity, safety, and finally lessons learned. Once these topics have been discussed, anyone may be allowed to speak regarding the incident (Avillo, 2008).

The formal post-incident review is significantly more complex and requires more time and information to produce an effective post-incident review meeting and report.

Ockershausen (2008) identified the basic topics or format for the formal post-incident review include the introduction, ground rules, overview, incident review, discussion points, and performance recognition.

The introduction should explain the purpose and objective of the review. The ground rules outline the time constraints of the review and remind participants that dialog should not be directed at individuals and conducted in a professional manner. An overview of the incident is communicated following the ground rules and describes the type of incident, date, time, type of structure, location, and weather conditions at the time of the incident. The overview should also include the dispatch information and all units that responded to the incident along with any pre-plan information if available.
The incident review discusses the strategic, tactical, and task level operations of the incident. The incident review should begin with input from the first arriving unit and progress in sequence with all the units that arrived on scene. Each unit should describe what they saw, their actions, and any problems they encountered and how they were resolved. The incident organizational chart should also be displayed at this point of the review.

The critique should also include open discussion about the incident on what went well and what needed to be improved. Policies and Procedures can be reviewed during this discussion to make any adjustment for improved operational effectiveness.

The post-incident review meeting is concluded with the recognition of exceptional performances. This will help build morale and develop confidence in the post-incident review process (Ockershausen, 2008).

The last component of the formal post-incident review is the formal report. The final report summarizes the incident, identifies recommendations for improving operational effectiveness based on lessons learned identified in the post-incident review process. The final report follows the meeting format with an introduction, overview, incident review, discussion points, and adding lessons learned. If major issues are identified in the lessons learned section the administration should also include an action plan describing how the problems identified will be addressed (Ockershausen, 2008).

The safety officer, as recommended by NFPA 1561: Standard on Emergency Services Incident Management System is to participate in the post-incident review. The safety officer should discuss issues relating personal protective equipment, accountability system and function, rapid intervention activities, medical and rehab status, and any other
issues that affected the safety and welfare of the emergency responders (National Fire Protection Association, 2007ed).

Brunacini (2002) recommended that post incident reviews need to address the strategic aspect of an incident by asking the following questions: 1) What was the initial strategy, 2) why was this strategy selected, 3) Was an adequate size-up performed and critical incident factors identified, 4) Was an incident action plan developed and did it match the strategy, was the risk management plan followed?

The answer to research question 3) what type of post-incident review processes are being used by other departments produced a surprising answer along with the predicted. The literature review identified three (3) types of post-incident reviews being used or recommended. The first type of review identified is the formal post-incident review process, the second being the informal, and third a self-assessment.

Ockershausen defined informal review as a critique conducted at the company level, but not limited to one company, and usually focuses on task and tactical issues of the incident. Informal reviews are conducted on a case-by-case basis at the discretion of the Incident Commander (IC) or company officer. The informal review is conducted at the scene whenever possible, allowing companies to use the scene as a reference. The companies asked to describe their actions and resolutions to any problems (2008).

The formal post-incident review is defined as a detailed review and analysis of large-scale or complex incidents, such as, technical rescues, haz-mats, and multiple alarm fires. The goal of the formal post-incident review is more strategic than the informal review and focuses on issues such as policy and procedure, mutual aide agreements, and staffing to name a few. The formal review is conducted away from the incident scene a few days
after the incident with the members that participated in attendance. The formal review should follow a predetermined agenda and procedure. The formal review is also characterized by a documented report that summarizes the incident, identifies the issues discovered in the review, and provides recommendations based on the lessons learned (Ockershausen, 2008).

The self-critique or assessment was a new discovery. The self-critique is conducted by the individual and doesn’t involve any other member and is focused on the specific actions of that individual. The goal of the self-critique is self-improvement and professional development. After each incident, the member should take time to answer the following questions: 1) what were my areas of responsibility? 2) how well did I accomplish these responsibilities? 3) were my actions safe for me and my team? 4) did my actions assist in accomplishing the overall strategy and action plan? 5) what action or skill could be improved upon? (Smith, 2006).

Ward advised that the self-critique should be conducted after every incident and focus on the member’s individual performance and its impact on the overall operation. It also provides the member with an opportunity to assess their required skill sets and decision making ability on their individual level of responsibility. Some questions that a self-critique should include: did I size-up the incident correctly?, was the layout what I thought?, was the fire or problem where and what I thought?, were the correct tools and equipment deployed to resolve the problem?, what would I do different?, were there any safety issues?, and did I experience any problems that need to be addressed on a department level? (Ward, 2003).
The action research methods along with the literature review lead to the development of the Victoria Fire Department Manual Page 1601.00, Post-Incident Review Program (Appendix D). The theories, practices, and recommendations from the survey and literature review were merged together in the final process to develop an effective post-incident review program.

The purpose of the VFD Post-Incident Review (PIR) Program is to ensure that incident reviews are organized and conducted in a consistent manner for different types of emergency incidents at various levels. The PIR will allow members to develop their skills and abilities as a professional fire fighter by having the lessons learned by others shared with all. The PIR program ultimate goal is to improve fire fighter safety and reduce injury and death by improving each fire fighter’s situational awareness through shared experiences.

The PIR program identifies three (3) types of post-incident reviews that may be used for an emergency incident. The procedure recommends that Self-Critique be conducted after every incident. An On-Scene Review is to be conducted after a still alarm, regular alarm, medical emergency, motor vehicle collision, or at the request of the Company Officer, Incident Commander, or any member on scene. The Formal Post-Incident Review is conducted after a haz-mat incident, multiple alarm fire, technical rescue, or at the request of the Incident Commander or Battalion Chief.

When conducting a Self-Critique, it is recommended that the member answer the follow questions: 1) Did I size-up/assess the incident/patient correctly? 2) Was the building/scene layout what I thought? 3) Was the fire or problem where and what I thought? 4) Did I have accurate situational awareness? 5) Were the correct tools, equipment, and technique used to complete the assigned task? 6) Were the policy and
procedures followed correctly? 7) Were my actions safe for me and my team? 8) Did I experience any problems that need to be addressed on a department level? 9) What would did I do well, what would I do different? 10) What skill or ability could I improve?

The On-Scene Review is conducted after the fire is determined to be under control and before equipment, hoses, etc. are taken up whenever possible. Leaving the equipment in place will allow for a visual reference of the tactics and tasks initiated on the fire ground. The review should be brief, concise, and weather conditions taken into consideration. The On-Scene Review is moderated by the Incident Commander and allows for all members to provide feedback and communicate experiences.

The On-Scene Review should answer and/or discuss the following questions: 1) What was the initial Size-Up? 2) What were the Critical Incident Factors (situational awareness) identified in the size-up? 3) Identify and discuss the risk management profile. 4) What was the initial strategy? 5) Discuss the Incident Action Plan and company actions. 6) Were the Tactical Priorities Completed? 7) Open discussion. 8) Incident summary and lessons learned.

Both the Self-Critique and the On-Scene Review allow for the questions to be altered to so they may address the specific type of incident more accurately. Also, these reviews allow for any member to submit a Lessons Learned Report (Appendix E) to the Training Office to be shared with other VFD member through the internal network.

The Formal Post-Incident Review is to be conducted within ninety-six (96) hours of the completion of the incident. The review begins with the assignment of a Critique Officer. This position, in most situations, will be assigned to the Incident Commander or Shift Commander.
The Critique Officer is responsible for completing the following tasks: Schedule the PIR Meeting, secure a suitable location for the meeting, secure all audio/visual equipment, notify all parties and individuals needed to participate in the review, distribute and collect the Formal Post-Incident Review Data Collection Report (Appendix F), conduct the PIR Meeting, and complete and submit the PIR Report.

The Critique Officer shall assign a member to take notes during the PIR Meeting. The meeting should also be recorded to video for later review by others that could not attend. All audio recordings and pictures from the incident should be made available during the review process. The PIR Meeting shall follow a set agenda, which includes the introduction, ground rules, incident overview, incident action review, discussion points, performance recognition, and conclusion.

The step in the Formal Post-Incident Review process is the Report. The FPIR Report is submitted to the Fire Chief for final review and approval. Once approved by the Fire Chief the Report is made available to all participating agencies. The Report shall also be filed with the VFD Training Office and made available for review on the VFD internal computer network along with any pictures and the video recording of the PIR Meeting. The PIR Report shall consist of the following format: introduction, overview, incident action review, discussion points, and lessons learned. If corrective action is identified during the review process the PIR Report should also include an action plan to correct the identified issues.

Discussion

The action research and literature review revealed the impact a Post-Incident Review Program can have on the reduction of injury and death to fire fighters as well as
improving fire ground situational awareness. The research indicated that most fire service personnel agree on the importance and need for a standardized post-incident review process. The research also indicated that where differences exist is in the format of the post-incident review process. The author believes that as long as a jurisdiction has a documented and consistent review process, regardless of the format, the jurisdiction can see the benefits of the program.

To begin, the action research and the information identified in the literature review both agree on what type of incidents require what type of post-incident review. The survey and Ockershausen agree informal reviews should be conducted at the company level, but not limited to one company, and focus on task and tactical issues of the incident. They also agree informal reviews should be conducted on a case-by-case basis for smaller scale incidents such as medical emergencies, still alarms, and motor vehicle collisions. They also agreed that formal post-incident reviews should be reserved for large-scale or complex incidents. Some examples include technical rescues, incidents that caused death or injury to fire fighters, multiple alarm incidents, and natural disasters (2008).

An area of post-incident reviews that was inconsistent between departments was who should conduct the post-incident review. The author believes this is due to the wide variety of types and sizes of fire departments across the United States. The author also believes that this inconsistency would not affect the post-incident review process as long as the principles and key concepts were executed. The action research indicated that the Incident Commander or Battalion Chief should conduct the formal post-incident review, with little or no participation from the training office. Ockershausen (2008)
recommended the review be conducted by a Critique Officer and the Critique Officer is a high ranking Chief Officer that can affect change. Ockershausen and the action research both agree that the Incident Commander or Battalion Chief should conduct or moderate the informal post-incident review (2008).

Another area of inconsistency between the research and literature review is what should be included in the post-incident review. The author believes this inconsistency is not detrimental to the post-incident review process as long as the key components of the informal and formal post-incident review are addressed. The action research indicated that the following items be addressed in the post-incident review: weather, situational awareness factors, ventilation tactics, fire attack tactics, initial size-up, lessons learned, identified problems, initial actions, dispatch information, what went well/not well, safety concerns, alternative techniques, benchmark status/time, casualty report, initial action plan, and need for additional resources.

The literature states the company officers should identify what were the critical factors as they observed, what was the risk management profile and strategy, what was the incident action plan and how did it address the tactical objectives, and what actions did your company take (Hinton, 2005).

Avillo recommends the following items be reviewed when the strategic, tactical, and task level issues are reported: communications, apparatus positioning, company integrity, safety, and finally lessons learned (2008).

Ockershausen’s report focused on what should be included in the formal post-incident review and stated it should include the introduction, ground rules, overview, incident review, discussion points, and performance recognition (2008).
Brunacini (2002) recommended that post incident reviews address the strategic component of an incident by asking the following questions: 1) What was the initial strategy, 2) why was this strategy selected, 3) Was an adequate size-up performed and critical incident factors identified, 4) Was an incident action plan developed and did it match the strategy, was the risk management plan followed?

Although there are several theories on what should be included in a post-incident review, the author feels all theories are correct and deserve some consideration. It was clear that the action research results obtained by a survey were focused on task and tactical assessment and improvement. The literature review revealed that formal post-incident review focus on the strategic elements of an incident. This finding resulted in the author using a mix of concepts discovered in the research with On-Scene Reviews concentrating on the tactical and task level elements and the formal post-incident review concentrated on strategic concepts.

A new concept identified in the literature review was the concept of the Self-Critique. The author was unable to find any specific policy on “Self-Critique” being used by any fire department. Smith indicated the self-critique is conducted on an individual basis and doesn’t involve any other member and is focused on the specific actions of the individual. After each incident the member should ask themselves the following questions: 1) what were my areas of responsibility? 2) how well did I accomplish these responsibilities? 3) were my actions safe for me and my team? 4) did my actions assist in accomplishing the overall strategy and action plan? 5) what action or skill could be improved upon? (2006). Another author recommended the following questions be asked: 1) did I size-up the incident correctly?, 2) was the layout what I thought, was the fire or problem where and
what I thought?, 3) were the correct tools and equipment deployed to resolve the problem?, 4) what would I do different?, 5) were there any safety issues?, and 6) did I experience any problems that need to be addressed on a department level? (Ward, 2003).

Much like the formal and informal post-incident review, both theories discussed have merit and deserve consideration for a Self-Critique. The author used points from both authors along with ideas and concepts identified in the formal and informal review to create a standardized Self-Critique.

Other issues discussed in the literature review recommended techniques that focused on the soft skills of the post-incident review. The soft skills are the skills needed to conduct a post-incident review in a manner that builds confidence in the process, promotes open communication, and ultimately improves performance. One of these skills is not second guessing first due companies. The leader of the review must understand that not all information is available at the time of arrival and if something critical is missed it should be addressed as a lesson learned. Another skill is not allowing individuals or groups to interrupt the review with argumentative behavior. The Incident Commander should address serious issues or problems with a member or company individually and privately (Hinton, 2005). The author feels both these concepts are critical to the success of the post-incident review, but are difficult to address properly in a policy or procedure. The author believes the proper way to address the issue is through proper training for officers and modeling these skills be Chief Officers or the Officers that conduct most of the reviews.

Another issue addressed in the literature review important to the post-incident review process was information distribution. In Wong’s (2004) applied research regarding post-
incident reviews he recommended that all formal reviews be documented and filed and in the department’s training division for review by all members and for training material for fire academies. His research also recommended that the reports be distributed and posted at each station for training. Hultman and Tippett recommend that information gained through any post-incident review should be collected and displayed for other firefighters to review and gain important lessons. This can be accomplished through a system that collects data and displays on the World Wide Web similar to what is used by the National Near-Miss Reporting System (2006).

The author agrees with the information found in the literature review and believes as much information possible from the post-incident review should be shared. This conflicts with the information obtained in the action research. The survey results did not indicate a desire to be as open with the information as the literature review indicated. The author believes this is based on a fear of criticism and second-guessing by peers not present at the incident. The author believes the fear can be reduced by conducting training for officers on the proper techniques for conducting a post-incident reviews and ensuring every member understands that reviews are for learning and sharing lessons learned not pointing out failures.

In conclusion, the post-incident review program is an important part of any departments’ success. Each department should ensure that a post-incident review process is in place and fits their overall operational plan. The plan should also ensure that a standardized process is in place for the everyday incident and they can be conducted quickly after the incident is completed. The author believes the key to a successful post-incident review program is the ability to be able to share information with members that
were not at the scene. Being able to share information with all will ensure that members are gaining knowledge through the experience of others, thus improving situational awareness on the fire ground and reducing fire fighter death and injury.

Recommendations

The author feels the action research for the development of a post-incident review program for the Victoria Fire Department was an overall success. The information obtained during the literature review and survey, and provided valuable insight into the development of Victoria Fire Department M.P. 1601.00, Post-Incident Review Program. The research made it abundantly clear that a post-incident review program is needed to ensure valuable lessons learned are passed on to ensure fire fighter safety on the fire ground. The research also indentified new concepts in post-incident review practices, such as the Self-Critique and On-Scene Review that will benefit the fire service.

The first recommendation from the author involves the On-Scene Review. The author, as the Incident Commander, conducted an On-Scene Review following a structure fire in a multi-family dwelling. The review was conducted as described in the developed policy with great success. The author felt conducting the review on scene was of great benefit and members learned a significant amount. The author found it difficult to moderate the review in an organized manner without guideline or prompt sheet. The author recommends an On-Scene Review Q-Card (Appendix G) be placed on each apparatus. The second recommendation is that each On-Scene Review be required to be followed up with a Lessons Learned Report. These minor changes would make the On-Scene Review more efficient and effective for sharing the lessons learned with members that were not present.
Another recommendation is that extensive training should be conducted over the various post-incident review processes. The research indicated that the members of the Victoria Fire Department are not familiar with the Self-Critique and On-Scene Review process. The training should also discuss the soft skills needed to ensure an effective post-incident review identified in the discussion section of the research.

The previously mentioned recommendations should be implemented to the Post-Incident Review Program and all appropriate policies be adjusted to reflect the respective changes. The Post-Incident Review Program shall be implemented during the 2009-2010 fiscal year and added to the VFD Strategic Plan. After each type of review an assessment will be conducted and the program will be evaluated. Any identified changes will be made at this time and policy re-issued.

The author recommends that additional research needs to be conducted on developing a program or system that allows the lessons learned from post-incident reviews to be shared with departments across the country. The fire service is dependent on the trade journals to locate and publish lessons learned from incidents across the Country. This process is beneficial, but takes time and usually focuses on major incidents. Fire Departments can learn a lot from each other if they were able to share their lessons learned from the everyday incident. With fewer fires occurring to gain valuable experience and experienced fire fighters retiring from the fire service it is imperative that the fire service put their egos aside and share their lessons learned with each other.
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