PRIMARY LAW ENFORCEMENT MISTAKES DURING INITIAL CRITICAL INCIDENT RESPONSE AND TIMELINE OF THESE EVENTS

ANATOMY OF THE FIRST 60

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Committee Members

Shirley Feldmann-Jensen, D.P.P.D. (Chair)
Nicholas Perez, Ph.D.
Steven Jensen, D.P.P.D.
Charles "Sid" Heal, M.A.

College Designee

Brenda Vogel, Ph.D.

By Travis Norton

B.S., 1997, California State University, Stanislaus

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ABSTRACT

PRIMARY LAW ENFORCEMENT MISTAKES DURING INITIAL CRITICAL INCIDENT RESPONSE AND TIMELINE OF THESE EVENTS

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By

Travis Norton

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Law enforcement is responding to an ever-increasing number of large-scale critical incidents involving an adversary who has killed or is attempting to kill innocent citizens. These incidents include active shooters, terrorist attacks, hostage situations, snipers, and other associated conflicts. The initial response phase of these incidents is an extreme challenge for law enforcement response organizations. Moreover, little academic research has been conducted concerning this phase and the issues occurring within it. This thesis intends to help address this gap in the research and provide important insight into the factors and dynamics at play during this time period with a focus on the major issues that are occurring. An analysis of 15 after-action reports from these large-scale events was conducted and used to formulate useful percentages on the primary errors occurring during these events. The results of the analysis were also utilized to create the framework for the timeline of the initial response phase. The ultimate goal of this research thesis is to provide useful information for these events by drawing attention to primary issues for future incident commanders and law enforcement first responder consideration.

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ABBREVIATIONS

AAR	After Action Report
APD	Aurora Police Department (Colorado)
BCAD	Broward County Aviation Department
BSO	Broward Sheriff's Office
Cal OES	California Office of Emergency Services
CHP	California Highway Patrol
CI	Confidential Informant
CA POST	California Peace Officer's Standards and Training
EMS	Emergency Medical Services
EOC	Emergency Operations Center
FBI	Federal Bureau of Investigation
FEMA	Federal Emergency Management Agency
FIRESCOPE	Firefighting Resources of southern California Organized for Potential Emergencies
FLL	Fort Lauderdale-Hollywood International Airport
HSEEP	Homeland Security Exercise and Evaluation Program
HSPD-8	Homeland Security Presidential Policy - 8
ICS	Incident Command System (Component of NIMS)
IRC	Inland Regional Center (San Bernardino, CA.)
LAPD	Los Angeles Police Department
LAFD	Los Angeles Fire Department
LAX	Los Angeles International Airport

LE	Law Enforcement
LVMPD	Las Vegas Metropolitan Police Department
MACTAC	Multi-Assault Counter-Terrorism Action Capabilities
NIMS	National Incident Management System
OFD	Orlando (FL.) Fire Department
OPD	Orlando (FL.) Police Department
PERF	Police Executive Research Forum
PPD-8	Presidential Policy Directive – 8
SEMS	Standardized Emergency Management System
SBCSD	San Bernardino County Sheriff's Department
SPD	Stockton Police Department
SWAT	Special Weapons and Tactics team (law enforcement)
US DHS	United States Department of Homeland Security
WC	Watch Commander (law enforcement)

CHAPTER 1

INTRODUCTION

Large-scale critical incidents involving an adversary are occurring at an increasing rate (Federal Bureau of Investigation [FBI], 2014 , 2016, 2018), and there is an urgent need to improve the law enforcement (LE) response system to these types of events. Crises such as floods, fires, traffic accidents, train derailments, and plane crashes challenge the LE response systems; however, conflicts that involve an adversary present unique dangers and complex challenges. The increased danger and complexity is due to the involvement of an adversary who is unpredictable and actively working against the incident commander in their effort to resolve the situation (Heal, 2012). These adversarial conflicts sometimes involve a suspect who is actively killing or attempting to kill citizens.

In the United States, citizens experience these types of active killer events at an alarming rate. In 2016 and 2017 alone, there were 50 incidents in the United States during which 221 people were killed and 722 were wounded (FBI, 2018). Law enforcement officers are the primary response force to these large-scale critical incidents involving an adversary and their main responsibility is ensuring the safety of the public including victims, bystanders, and other citizens (Molino, 2006). Due to the circumstances surrounding these events, there is no time for detailed planning and prolonged preparation and responding is a challenge for any size LE agency. Large-scale incidents usually occur without warning and emergency responders are arriving with whatever personnel and tools are on hand at the time. These responders only participate because they are on-duty and not because they have the knowledge or skills for these types of events (Heal, 2012). Based on the danger and complexity of these incidents, the

importance of an effective LE response during this time period cannot be overstated. Lives are at stake and a lackluster LE response could result in further tragedy.

Relatively little scholarly attention has been given to the initial response phase of a large-scale critical incident involving an adversary. Renaud (2012) called attention to this time period and stated, "Every first responder knows this initial phase exists" and "few discussions exist on it" (p. 50). This time period has been referred to as the "Golden Hour" by retired Los Angeles Police Department (LAPD) Deputy Chief Mike Hillman (Renaud, 2012). While there are studies that examine the primary response issues in all types of disasters (Donahue & Tuohy, 2006; Faith, Jackson, & Willis, 2011), there are none that focus solely on LE's initial response to an adversarial conflict during the Golden Hour or first 60 minutes. The focal point of this research thesis will be to review LE after-action reports (AARs) from large-scale critical incidents involving an adversary and determine the primary issues that provide opportunities for improvement. An additional bi-product of this research thesis will be creating the framework for the potential timeline of these events. The ultimate goal of this research is to improve the LE response system to large-scale critical incidents involving an adversary in the United States.

Argument Summary

The Federal Emergency Management Agency (FEMA) defines the National Preparedness Goal (NPG) as what it means for the entire community to be prepared for all types of disasters and emergencies (2015). The NPG also identifies 32 core capabilities which are the critical elements needed to achieve the goal. The 32 core capabilities are identified in five mission areas that include:

- Prevention: Prevent, avoid, or stop an imminent, threatened or actual act of terrorism.

- Protection: Protect our citizens, residents, visitors, and assets against the greatest threats and hazards in a manner that allows our interests, aspirations and way of life to thrive.
- Mitigation: Reduce the loss of life and property by lessening the impact of future disasters.
- Response: Respond quickly to save lives, protect property and the environment, and meet basic human needs in the aftermath of a catastrophic incident.
- Recovery: Recover through a focus on the timely restoration, strengthening and revitalization of infrastructure, housing and a sustainable economy, as well as the health, social, cultural, historic, and environmental fabric of communities affected by catastrophic incident.

The response phase of the five mission areas focuses on saving lives during a catastrophic incident (FEMA, 2015). One unexplored time period of response is the initial phase of a large-scale incident involving an adversary which will almost solely involve the response of on-duty LE officers. On-duty LE officers will be the first responders responsible for neutralizing or containing the threat, such as an active shooter or terrorist, before fire and emergency medical services (EMS) are cleared to enter the area. Actions taken by LE and the first arriving incident commander during the first 60 minutes of an event will set the tone, pace and direction of the response (Renaud, 2012). The focal point of this thesis is to investigate LE's response during the initial phase of large-scale critical incidents and to formulate the basic timeline of this period. To date, no systematic examination of this phase or the timeline surrounding this period has been completed.

Research Purpose

The aim of this research thesis is establishing the factors and influences at play during the initial response phase of a large-scale critical incident. Law enforcement has often failed to realize the magnitude of intervention problems occurring during the initial response phase of a large-scale critical incident (Norton, 2016). For many LE mid-level managers, hope is their only strategy for dealing with these high-risk/low-frequency events. While key literature has indicated lessons from past events are available, response issues continue to be a serious problem and the lessons learned are clearly not translated to improve practice. Long-term problems are revealed in the literature regarding lessons learned as well as no research into the timeline of these events.

Errors made by LE during this time period include incident command issues, improper self-deployment, indiscriminate parking, unified command with and without fire/EMS, communication problems, and poor planning (Norton, 2016). One example where several of these mistakes were made is the response of the Oakland Police Department to the murder of four of their officers during a traffic stop and subsequent Special Weapons and Tactics (SWAT) team operation on March 21, 2009. In a public report of findings and recommendations for the incident, responding supervisors and command officers failed to establish a command post and implement fundamental aspects of basic emergency management protocols (Stewart, 2009). There was also failure to establish overall leadership, which was pivotal as the incident "evolved in complexity" (Stewart, 2009). Research into 14 other incidents also reveals these and other response issues.

The timeline of large-scale critical incidents involving an adversary elucidates these events and provides valuable insight for potential incident commanders. One of the purposes of

this research is to provide countermeasures to the primary mistakes occurring during the initial response phase. Training, which includes an evaluation of the timeline of the initial response phase, is one such countermeasure. Understanding and awareness are powerful tools which can be used to fix the issues and take advantage of opportunities to improve.

Critical to the research is the identification of problems that occur during the initial time period of large-scale incidents. The information provides potential responding incident commanders with knowledge of when to apply countermeasures to issues such as lack of incident command and indiscriminate parking, thus helping to decrease the number of mistakes made during the first 60 minutes of the response. A visual framework of this initial time period can further inform the unfolding of critical events and reveal common errors.

Research Question

Utilizing a qualitative methodology, the study analyzed and evaluated AARs of large-scale critical incidents involving an adversary. The research question driving the inquiry was: What are the most commonly recognizable factors and influences along the timeline of the initial response to a large-scale critical incident?

Special attention was given to the incident command system and its role in large-scale adversarial events. Recommendations of the study focus on seven primary themes identified from the analysis of the AARs.

Target Population

This research thesis identified common errors by LE during large-scale incidents and began determination of when they happen on the timeline. The primary benefactors of this information include responding LE incident commanders, first-line supervisors and line level officers. One of the goals of this research thesis was to increase the level of insight into these

events. Increasing awareness and understanding can help the target population improve their response by applying early countermeasures to primary issues. For example, an officer who understands self-deployment issues and when they can occur during the initial response phase could be less apt to commit this mistake.

Emergency planners, emergency response officials and fire and EMS personnel are also targeted beneficiaries of this research. The research findings can provide emergency planners with a stronger resource for preparation efforts at pre-planned events to mitigate any response issues and prepare for adversarial crises. The findings are useful for fire and EMS personnel for understanding the response challenges of LE to these events. The insights can help avoid potential challenges faced when LE and fire and/or EMS interface in later stages of the response.

Research Scope/Parameters

Fifteen AARs from large-scale critical incidents were analyzed and examined for identification of primary issues. The AARs from large-scale incidents used in the research were from large-scale critical incidents involving an adversary and were spontaneous events that did not occur during pre-planned events, such as the Boston Bombing. Additionally, these incidents occurred in the last 10 years in the United States. All of the AARs are primarily focused on the LE response and are publicly available.

Key Literature Support

Research in the literature focuses on conflict theory, crisis leadership, learning organizations, emergency management, the Incident Command System (ICS) and law enforcement response challenges. Several central themes emerge in the literature review.

The history of conflicts and conflict theory lays the foundation for this research thesis. An understanding of crisis history provides context for how our country arrived at a point where

we are experiencing an increasing number of active-shooter events. The review of the literature continues with research on crisis leadership and its critical role during an incident. The personal traits of a good crisis leader are reviewed followed by evidence of failures at large-scale events due to poor leadership (Donahue & Tuohy, 2006). Law enforcement specific leadership issues are also examined which include the overconfidence of some law enforcement (LE) leaders who underestimate the abilities of suspects and overestimate their own abilities.

Learning organizations are then examined for their importance in organizations where self-reporting mistakes, near misses and essential safety information are emphasized. The characteristics of a learning organization are also analyzed because of their value in building a learning organization.

The history of emergency management is reviewed including literature on active-shooter events, which are challenging the response phase of emergency management. The remaining literature addresses the ICS. The intent of ICS was to bring unity and order to the many diverse resources responding to a large-scale critical incident, however it may not be useful during the initial response phase (Renaud, 2012). Establishing incident command during these situations is a significant challenge (Washington DC Metropolitan Police Department, 2014) because these events are highly intense, complex and extremely difficult situations to resolve (Hillyard, 2000).

Summary

Analyzing the factors and dynamics at play during these events can help clarify the timeline and identify common mistakes by LE. Additionally, the thesis provides information that can assist in decision-making by LE commanders at large-scale events which in turn may help steer the crisis in a positive direction during subsequent phases of the response.

The remaining components of the research will attempt to create a link between available literature gathered from AARs. A review of literature is discussed in Chapter 2 followed by research design and methodology in Chapter 3. The data analysis, and the results are presented in Chapter 4. The thesis concludes with Chapter 5 where discussion of the analytic findings and their implications can inform a timeline development and recommendations.

CHAPTER 2

LITERATURE REVIEW

Opportunities for improving the LE response to the initial phase of a large-scale critical incidents involving an adversary are the primary focus of this study. Furthermore, a potential event timeline during the initial event time period will be drafted. The time period is relatively unexplored and further research may be needed to further understand the issues surrounding the timeline. In order to examine this initial phase, several cross-sections of relevant academic disciplines related to this thesis were explored, including four academic disciplines and correlating sub-disciplines. Conflict history and conflict theory in the sociology discipline were explored to provide a basic working knowledge of conflicts and their importance in this research. Once the foundation for conflict was made clear, leadership and its importance during a crisis was closely examined. Learning organizations, which are organizations which facilitate learning, were then examined to elucidate the importance of organizations that learn from their mistakes and utilize lessons learned to improve. An exploration of the history of emergency management and its five phases follows. Key literature was also reviewed on the history of the ICS, its use by LE and the challenges during the initial response phase.

Conflict History

Crises began receiving attention as far back as the ancient Greeks who wondered how to face the difficult trials that were sent by the gods or nature (Topper & Lagadec, 2013). Social conflict, as an area of study, grew in the 1800s along with the development of science and technology, and its application to weaponry (Bartos & Wehr, 2002). The Napoleonic Wars and revolutions of 1848 brought conflict and violence on the largest scale ever seen by man (Bartos & Wehr, 2002). In the mid-19th century, the industrial revolution produced large demographic

dislocations, extreme poverty and a wide gap between workers and owners. These dislocations led to large-scale civil unrest and the early development of conflict analysis and management (Bartos & Wehr, 2002). After World War II, armed conflicts increased worldwide (Hewitt, Wilkenfeld, & Gurr, 2008). In the United States, the civil rights movement of the 1950s and 1960s brought about conflict and resistance to racial segregation and discrimination. The Cold War between the United States and Soviet Union also began during this time, stimulating civil wars in countries including Vietnam, Cambodia, Rwanda, Ethiopia, Angola, and Somalia (Bartos & Wehr, 2002). The 1970s through the 1990s saw new kinds of international disasters and conflicts, including factory explosions, prison protests, urban riots, train and plane hijackings, and financial crises (Topper & Lagadec, 2013).

At the turn of the century, globalization created fault lines between people previously separated from one another (Lagadec, 2009). Globalization is another way of defining a network society where the world is interconnected. Historically these types of networks were only seen in private lives, but moved to large vertical organizations that ran power, industry, and war (Castells, 2005). Western thought was that people, organizations, and the world were machines and organized to run like clockwork in a steady-state world (Wheatley, 2007). This thinking was overcome with the advent of digital networking technologies. Digital networking technology was global because communication networks transcend a country's physical boundaries (Castells, 2005). Global digital technology does not include all people however everyone is affected by its logic and the power relationships which interact in global networks (Castells, 2005). Crises jumped from one field to another, exposing issues and recombining them into unforeseen mega-threats (Lagadec, 2009). These crises will continue to jump from one field to another and the LE response to these events will be tested.

Another structural factor that changed the current generation was the speed of the electronic media coverage. For example, as the military operation named "Neptune Spear," meant to capture or kill the 2001 World Trade Center attack mastermind Osama Bin Laden occurred, news of the attack was on Twitter as the assault was being monitored from the White House (Bruns & Burgess, 2012). Additionally, the environment, economy and culture are very fragile, and the slightest disturbance can develop into an extreme upheaval (Topper & Lagadec, 2013). The world, which is an interconnected network society, is a highly sensitive system where small disturbances in one part can create considerable impacts far from where they originate (Wheatley, 2007). The largest crisis in the United States involving adversaries to occur during this time was the World Trade Center attacks on September 11, 2001 (9/11). Since 9/11, conflicts have proliferated in the United States. Active-shooter incidents have continued to increase annually, and lone wolf terrorist attacks and mass killings are now seen in the United States (FBI, 2014, 2016, 2018). The increase in these events involving an adversary indicates LE will continue to be the primary response organization.

Conflict Theory

Conflict theory attempts to scientifically explain how conflict starts, its variations and its effects. It also provides a foundation for how large-scale incidents have proliferated. The central focus of conflict theory is the unequal distribution of scare resources and power. Conflict theorists have argued that economic imbalance gives the wealthy an ability to maintain order through a strong police force (Jacobs, 1979). This statement by conflict theorists implies the police are mostly in large metropolitan areas where the difference in economic resources is greatest (Jacobs, 1979).

Worldwide, acts of violence account for 1 in 10 deaths for people of all ages and economic backgrounds (Centers for Disease Control and Prevention, 2011). Acts of violence and conflict can be caused by several factors including a person's biology, personality, social learning and behavior, social norm violations, moral reasoning and judgement, sexualization and honor ideologies (Liu & Opotow, 2014). Historically, conflict theory was described by Karl Marx as society in a state of perpetual conflict due to competition for limited resources, and those with wealth and power trying to suppress the poor and powerless (Ritzer, 1990). Marx argued that all of history is a conflict between classes. Charles Mills (Knapp, 1994), who is considered the father of modern conflict theory, theorized conflict between people with differing interests and resources creates social structures. These structures cause individuals to be affected by unequal distribution of power. Mills showed the interests of the elite were opposed to those of the people. He theorized the policies of the power elite would result in the escalation of conflict, production of weapons of mass destruction, and possibly the annihilation of the human race (Knapp, 1994).

Conflict theory envisions a variety of future conflicts that will continue according to their own pattern without end (Ritzer, 1990). However, no single theoretic framework can encompass all acts of violence and conflicts (Oberschall, 2009). Conflict theory indicates, specifically the theory by Mills (Knapp, 1994) that large-scale critical incidents involving an adversary are on the rise due to the escalation in conflict and provides further evidence of the need for research into these events.

Crisis Leadership

When a crisis strikes, strong leadership is required and sorely missed when lacking (Lebow, 1981). During the initial response to a large-scale crisis event, strong leadership will be

the pivot point. Crisis events always involve humans, either as victims, suspects, bystanders, or responders. Likewise, humans affect crises and are in turn affected by them. The traits and characteristics of humans that affect these crises including training, fatigue, emotions, personalities, fear, and pain are always present during these events and will affect their outcome (Heal, 2012). However, an individual who has not displayed skill as a day-to-day leader will not become an exceptional crisis leader. To be a quality crisis leader, day-to-day interaction with direct reports must garner respect, inspire confidence and bolster trust (Klann, 2003). Developing the requisite skills to be a good crisis leader requires training and experience including problem solving, decision-making, and conflict resolution.

One form of crisis leadership, *meta-leadership,* was developed out of novel crisis situations, such as 9/11 and Hurricane Katrina (Leonard, Barry, Isaac, Henderson, & McNulty, 2009). Meta-leadership says leaders of today must lead in all directions and engage everyone who is part of the integrated whole (Leonard, Barry, Isaac, Henderson, & McNulty, 2009). Meta-leaders are "leaders of leaders," and they seek subordinates who are willing to challenge them at times (Leonard et al., 2009). These leaders have the skill and motivation to bring together different groups of people with the expertise to solve complex problems they all have in common, such as those encountered in a crisis. Meta-leaders must also gain the support of their constituents which is essential to influencing the larger system (Leonard et al., 2009). The foundation of meta-leadership focuses on the individual. Two key traits of such leaders are high emotional intelligence (Burns, 1978) and the ability to filter through many possible solutions to large, complex problems (Giuliani, 2002). An emotionally balanced leader cannot only manage emotions and filter through the uncertainty inherent in a crisis but also has the willingness and capacity to collaborate and work across institutional boundaries. Leaders who direct large-scale

operations must have self-awareness, self-regulation, motivation, empathy and social skills (Tekleab, Sims, Yun, Tesluk, & Cox, 2008).

Another form of crisis leadership is the ability to be caring and communicate effectively and to possess clarity of vision and values, strong character, and competence, courage, and decisiveness (Klann, 2003). However, many other skills are needed to effectively lead others during times of crisis. For example, leaders should never be content and must follow a program of constant improvement. A program of constant improvement includes identifying personal weaknesses, strengthening them and developing a plan to overcome challenges (Willink & Babin, 2015). Effective crisis leaders see crises as tests of their abilities, not interruptions (Garcia, 2006). These successful crisis leaders inspire their subordinates by making them feel like they are part of something important. Such leaders also encourage dissent and disagreement and engage with their subordinates (Bennis, 1989). In contrast, micro management and pressure on subordinates may not get results (Klann, 2003).

The primary responsibility of LE officers is public safety. Ironically, many officers regularly cite a toxic work environment as the greatest cause of their stress and threat (S. Neal, 2014). The presumed cause of this toxic environment is poor leadership, possibly translating to poor crisis leadership. These leaders are the ones responsible for leading their officers during critical incidents (Heal, 2012). Another explanation for poor crisis leadership in LE lies in the system itself. Officers who rise in rank, especially to a command level, must demonstrate some level of proficiency with managing, budgeting, staffing, organizing, and planning (Heal, 2012), yet such leaders have been promoted under "steady state" conditions and may not be prepared to lead in a crisis (Stern, 2013). In fact, many do not understand how to manage dynamic tactical problems or lead during extreme situations (Heal, 2012). Nevertheless, the rank of these leaders

dictates that they will be called upon to handle the largest and most complex critical incidents (Heal, 2012). This is an example of someone who is promoted and allows their expertise in one area to wrongly lead them to believe they are experts in other areas. In turn this causes them to not listen to other perspectives (Hess, 2014).

The ability of responders to succeed in handling large-scale critical incidents is limited by poor leadership according to the literature. Evidence of this is seen in a study of 14 large-scale incidents, including Columbine, the Space Shuttle Columbia recovery, and Hurricane Andrew. Leadership problems were listed as one of the lessons learned issues in all of the researched events (Donahue & Tuohy, 2006). Yet there is another failure that is just as troublesome. Law enforcement missions fail when overconfidence leads to underestimating the abilities of an adversary or overestimating one's own abilities (Heal, 2009). Law enforcement leaders who say, "It can't happen here," "It won't happen here," "The odds are in our favor," or "We can handle it" are not preparing for crises likely to occur in their areas of responsibility (Heal, 2009). Leaders should foster an environment of "it can happen here" and monitor other crises to see if their agency is ready for similar incidents (Stern, 2013). Leaders who foster this environment will not be surprised when they respond to a large-scale critical incident.

Law enforcement leaders, specifically in mid-level management, are tasked with leading during critical incidents (Boin & Renaud, 2013). Their ranks vary, but for the most part these are on-duty sergeants and lieutenants who are responding to direct the initial response which includes giving orders and directing resources (Boin & Renaud, 2013). This kind of response is led by one person, the incident commander (IC; Bigley & Roberts, 2001) who, regardless of who they are, is going to report on the conditions and resources during the initial stages of the incident. As the incident matures, higher ranking officers may move them down (Bigley &

Roberts, 2001). Good ICs share several qualities including proactivity, objectiveness, calm demeanors, and quick thinking, and being safety oriented, adaptable, realistic, decisive, patient, and are good listeners (Bennett, 2011). While this list is not exhaustive, it makes the point that an IC needs many qualities. Good leadership makes the incident command system work better (Jensen & Waugh, 2014).

Learning Organizations

A learning organization refers to the direction of organizational stakeholders and their continuous pursuit of new knowledge and approaches for executing work. The concept became prominent in the 1980s when businesses were experiencing huge losses or closing down due to a bad economy. The concept caused businesses to continually create new strategic business measures to survive during the periods of economic hardship (Learning Organizations, 2011). Because the world is more interconnected, complex and dynamic, it is not feasible to have only one person learning for the organization. One person cannot solve all problems at the top of an organization. An organization will thrive if it learns how to get people committed to learning at all levels (Senge, 2006). According to Weick and Sutcliffe (2007), an organization which feels safe to report adverse events, near misses, and essential safety information builds an organizational learning culture. Comparatively, an organization that practices blaming employees for mistakes in turn discourages them from coming forward with mistakes that could help improve the organization (Weick & Sutcliffe, 2007).

Learning requires higher level thinking and will challenge and change an individual's existing viewpoints of the world. Organizations or individuals which never admit to a mistake or transfer responsibility for their mistakes to others never learn anything (Ackoff, 2006). For managers and leaders, important learning behaviors include root cause analysis, after-action

reviews, premortems, visualizations and unpacking of assumptions (Hess, 2014). Learning however, requires an organization to change, which is both cognitively and emotionally difficult. For an individual to learn, they must overcome mental models and ego defenses which means learning is a team function (Hess, 2014). Comparatively, LE individuals work together as a team towards common goals and can benefit from a learning culture.

Law enforcement is a safety culture and depends on knowledge gleaned from low-frequency events, mistakes, near misses and lessons learned to be successful at subsequent critical incidents. To gather this information requires an organization where the culture encourages people to self-report vital safety information (Weick & Sutcliffe, 2007). An organization that self-reports mistakes will produce a cultural shift towards becoming a learning culture. Changing a culture from "Who is at fault?" to one of "What happened?" can begin a process of learning from mistakes and improving LE organizational learning.

Characteristics of a Learning Organization

Becoming a learning organization is important for LE agencies because of the ability of a learning organization to learn from past mistakes. In his book, called *The Fifth Discipline*, Senge (2006) wrote about five main pillars used to build a learning organization. While the first two focus on an individual's transformation, the last three characteristics focus on the group transformation in an organization (Learning Organizations, 2011). The five pillars include personal mastery, mental models, shared vision, team learning, and systems thinking.

Personal mastery deals with the individual and describes the discipline of personal growth and learning. Individuals who possess a high level of personal mastery are always expanding their ability to create results in life and the core of the learning organization is personal mastery (Senge, 2006). The knowledge to become an expert is mainly a result of self-

determination. Many people attend formal and lengthy schools but lack the personal ambition to move beyond the level of graduation which is a serious issue with finding individuals who are committed to self-mastery (Heal, 2012). Personal mastery is not a trait someone can be forced to develop. When an organization creates a mandatory personal mastery program, the program will most likely backfire (Senge, 2006). Instead, an employer should strive to create a climate in which the principles of personnel mastery are practiced daily by encouraging personal vision, commitment to truth and personal vision.

Mental models are general assumptions and generalizations, which are deeply rooted in a person's minds and affect how they understand the world. The models are also powerful in affecting what we do (Asci, Fatma, & Altuntas, 2016). Two people experiencing the same event will describe it differently based on their perception. Mental models shape an individual's perception and in turn are important in management of organizations (Senge, 2006). While mental models can have negative effects on an organization, such as not adapting to change, they can also help accelerate learning (Senge, 2006). Individuals using progressive mental models in learning organizations can create learning schedules and continuously adapt to changes in the organization's work process. This in turn leads to employees who are able to confront difficult work situations (Learning Organizations, 2011).

When two or more people share a similar picture, and are committed to each other having it, that describes shared vision (Senge, 2006). In a learning organization, shared vision increases employee aspirations and work is part of pursing a larger purpose. Another characteristic of shared vision in a learning organization is that it enables work groups to adapt to organizational changes with speed and convenience as everyone collectively contributes to standards. This also leads to the elimination of conflicts and enhances interpersonal understanding (Learning

Organizations, 2011). Truly learning in a team environment means individuals members are growing faster than they could have otherwise (Senge, 2006).

Organizational team learning consists of three important dimensions. First teams must learn how to tap into the intelligence of the minds of the team rather than the individual. Second, they have innovative and coordinated actions. Specifically they have operational trust where team members are counted on to act in ways that complement other's actions. Third, senior teams carry out their actions through other teams. This fosters other learning teams (Senge, 2006).

Finally, systems thinking is a contextual approach to thinking and encourages dynamism in building organizational processes. Systems thinking helps achieve continuity in the learning process and approaches to change (Learning Organization, 2011). Systems thinking is also a framework for seeing interrelationships and patterns of change. Humankind now has the ability to create more information than anyone can absorb. The complexity has led to systemic breakdowns include global warming, climate change, the international drug trade (Senge, 2006). Complexity that leads to these breakdowns can be countered with systems thinking by viewing interrelationships and simplifying life to see deeper patterns lying behind events and details (Senge, 2006). An axiom of systems thinking is every influence has both a cause and effect and nothing is ever influenced in just one direction.

Systems diagrams provide a visual representation of a system by tracing the flows of influence to show patterns that repeat themselves, which either make situations better or worse (Senge, 2006). Envisioning reality systemically requires seeing circles of influence rather than straight lines. These circles tell stories where patterns can be seen that repeat themselves either making a situation better or worse.

Emergency Management History

As previously stated, large-scale critical incidents involving an adversary have proliferated in the recent past. From a historical perspective, for the first 150 years after the founding of our nation, natural calamities and disasters were seen by the public as unavoidable acts of God. The response to these disasters was conducted by the community at large and was not a government function (Rubin, 2007). Individual communities and states handled local disasters, and most help came from charitable and civic organizations. The first example of government involvement in a local disaster occurred in 1803, when congress passed an act that gave financial assistance to a New Hampshire town ravaged by fire (Haddow, Bullock, & Coppola, 2011). The Galveston Hurricane of 1900 and the San Francisco earthquake of 1906 signaled a shift towards government involvement that was consistent and sustained (Ruben, 2007). In the 1950s, the Cold War was the main disaster risk due to the potential for nuclear war. Communities were encouraged to build bomb shelters and almost every community had a civil defense director (Haddow et al., 2011). The federalization of emergency management evolved over each presidential administration, culminating in the creation of the FEMA in 1979 under Jimmy Carter's administration (Rubin, 2007). In the 1980s and 1990s, emergency management expanded due to increasing expectations and governmental responsibilities. However, expectations of a strong governmental response were stalled because of FEMA's poor performance in several large-scale natural disasters including earthquakes in California and hurricanes in Florida. In 1993, newly elected President Clinton acted on the lessons learned from these studies and reduced the national focus on disasters from civil defense to natural disasters. The focus on lessons learned was the impetus for creating the *all hazards* emergency management concept, defined as any natural or human hazard event that requires an organized

response to protect life, public health and safety and minimizes any disruption of government (Blanchard, 2008). Several factors led to an increase in the government's role in emergency management, including growing political support for the all hazards approach, more effective interaction with government at all levels, and an increase in professionalism among emergency management (Rubin, 2007).

Following the terrorist attacks on the World Trade Center on September 11, 2001, the federal government's focus on terrorism drove the creation of the U.S. Department of Homeland Security (DHS) in 2003 (Provost & Teske, 2009). The move caused 22 agencies, including FEMA, under the DHS umbrella and changed federal policy, philosophy, and priorities. The administration moved away from the all hazards approach and back toward a civil defense model based on anti-terrorism (Provost & Teske, 2009).

On March 30, 2011, Presidential Policy Directive 8 (PPD-8) was issued by the Obama Presidential Administration. The NPG aims for "A secure and resilient nation with the capabilities required across the whole community to prevent, protect against, mitigate, respond to, and recover from the threats and hazards that pose the greatest risk" (FEMA, 2015). PPD-8 directive replaced Homeland Security Presidential Directive (HSPD)-8 (National Preparedness) issued December 17, 2003 and HSPD-8 Annex I (National Planning), issued December 4, 2007. PPD-8 evolved from HSPD-8 and is intended to guide the nation in protecting, responding to, and recovering from threats that pose the greatest risk to our society (FEMA, 2011).
PPD-8 identified five mission areas.

1. Prevention: Prevent, avoid or stop an imminent, threatened or actual act of terrorism.
2. Protection: Protect our citizens, residents, visitors, and assets against the greatest threats and hazards in a manner that allows our interests, aspirations, and way of life to thrive.

3. Mitigation: Reduce the loss of life and property by lessening the impact of future disasters.
4. Response: Respond quickly to save lives, protect property and the environment, and meet basic human needs in the aftermath of a catastrophic incident.
5. Recovery: Recover through a focus on the timely restoration, strengthening and revitalization of infrastructure, housing and a sustainable economy, as well as the health, social, cultural, historic. and environmental fabric of communities affected by a catastrophic incident (FEMA, 2010).

Focusing on the response phase of PPD-8, there has been an increase in the number of large-scale critical incidents involving adversaries in the past several years, specifically active shooter incidents (FBI, 2014, 2016). The FBI recorded 160 active shooter incidents in the United States between 2000-2013. Statistics from this study show the average number of incidents increased from 6.4 incidents a year (2000-2006) to 16.4 incidents per year (2007-2013; FBI, 2014). The FBI analysis of 2014 and 2015 active shooter incidents showed 20 incidents in each of the years. This is an increase from 17 in 2013 (FBI, 2016). The latest FBI active shooter study shows 20 active shooter incidents in 2016 and 30 incidents in 2017, which is an increase of 10 additional incidents from the prior study (FBI, 2016). Active shooter incidents are one type of large-scale critical incidents where LE officers are the first responders who are tasked with bringing these events to a successful conclusion.

Incident Command System History

Incident command system's infancy is rooted in firefighting. When major wildfires erupted in southern California in 1970, firefighters responded from multiple jurisdictions. The fires burned half a million acres, destroyed 700 structures and took 16 lives (Stambler &

Barbera, 2011). The multi-jurisdictional response to this catastrophe caused coordination problems due to differences in personnel, equipment, terminology, and ways of organizing among agencies (Buck, Trainor, & Aguirre, 2006). To correct the inadequacy, federal, state, and local forest firefighting agencies saw a need to organize cooperation among agencies when fighting large fires. The catastrophe led to the creation of the Firefighting Resources for Southern California Organized for Potential Emergencies (FIRESCOPE) program which was a cooperative program among federal, state and local forest firefighting agencies in California. (Buck et al., 2006). While FIRESCOPE's inception was for wildfire response, its mission morphed into all hazards. FIRESCOPE's originating task force broadened FIRESCOPE to function in an all-hazards environment. During this time only fire service concerns were being addressed and LE did not have a representative on the FIRESCOPE policy board (Neamy, 2011).

One of the byproducts of FIRESCOPE was an emergency response system called the ICS (Buck et al., 2006). The system of centralized authority makes one person, the incident commander, responsible for directing, and coordinating the tactical efforts of the response organization during a crisis. ICS gives responders an array of rules, division of labor, practices and coordination tools that drive the actions of the different organizations that respond to emergencies (Buck et al., 2006). Everyone fits into a command structure at the scene of the incident. For example, consider a critical incident involving a chemical spill. Fire, LE, environmental cleanup, public works, and public health can all be integrated into a single command structure that coordinates and manages every facet of the event.

As ICS evolved, it spread nationally. In 1983, FEMA began including ICS in the curriculum at the National Fire Academy. ICS use by the fire service increased across the U.S. and non-fire agencies were investigating ICS and working to incorporate it into their response

procedures (Stambler & Barbera, 2011). In 1984, the San Bernardino County Sheriff's Department conducted a project to make ICS applicable to emergencies faced by LE. The SBCSD persuaded the California Police Standards and Training Commission (POST) to sponsor training in a LE version of ICS which was first conducted in 1986 (Ringhofer, 1985). While the literature shows other non-fire agencies were examining how to incorporate ICS, no other literature could be located on this topic. Additionally, no literature could be located that SBCSD's push to CA POST helped lead to the creation of what is now the Law Enforcement Guide for Emergency Operations that includes the Standardized Emergency Management System (SEMS; California Office of Emergency Services, 2016). SEMS is an important component in the evolution of ICS because it was used as a model for the National Incident Management System (NIMS) in 2008 (Smith, 2007). SEMS inception was the result of the flawed public safety response to the East Bay Hills fire in Oakland in 1991 (Stambler & Barbera, 2011). The flawed response led to the introduction of California Senate Bill 1841, which advocated the integration of emergency response operations among state agencies. The bill was written into law on January 1, 1993 as the SEMS (California Emergency Management Agency, 2010). The bill requires the use of ICS by all first responder agencies and was designed to standardize emergency operations and training. It was also meant to improve the flow of information and strengthen coordination among responding agencies (McEntire & Dawson, 2007). SEMS is credited with improving the response to the Loma Prieta earthquake, the Northridge earthquake and several large-scale wildland fires (McEntire & Dawson, 2007). SEMS is required by the State of California in multi-agency and multi-jurisdictional responses for agencies to be reimbursed for disaster losses (California Emergency Management Agency, 2010).

The September 11, 2001 World Trade Center attacks in New York City highlighted the need for a nationwide approach to incident management. In response to the lessons learned, President George W. Bush signed the Homeland Security Presidential Directive 5 (HSPD-5) requesting the development and administration of a nationwide incident management system to prevent, prepare for, respond to and recover from terrorist attacks, major disasters and other emergencies. The goal of this system was to ensure unity of effort at various levels of government across the United States using a single national comprehensive approach (Anderson, Compton, & Mason, 2004). Reviews of command and control and incident management systems were conducted and ultimately led to the development of NIMS. In 2005 HSPD-5 was released and required Federal departments and agencies to adopt NIMS and create standards and guidelines to determine whether state and local entities adopted NIMS to receive grant funds (Radvanovsky, & McDougall, 2013). Despite this requirement, there is no enforcement mechanism in place to require its use, and it appears the federal government is expecting individual states to guarantee NIMS compliance from agencies that receive federal grant funds (Neamy, 2011).

NIMS is defined as a core set of doctrines, concepts, principles, terminology, and organizational processes that apply to all hazardous situations (FEMA, 2017). NIMS has five primary components including preparedness, communications and information management, resource management, command and management and ongoing maintenance and management (FEMA, 2017). The ICS component of NIMS falls under the command and management component (FEMA, 2017) and was adopted mostly intact from the original ICS template in California SEMS (Smith, 2007). The ICS is a functionally based system for managing all hazards. The five functions of ICS are command, operations, logistics, planning, and

administration/finance (FEMA,2017; see Figure 1). The detailed history of emergency management lays the foundation for how LE responds to large-scale critical incidents, specifically the use of the incident command system, and also informs the research of this research.

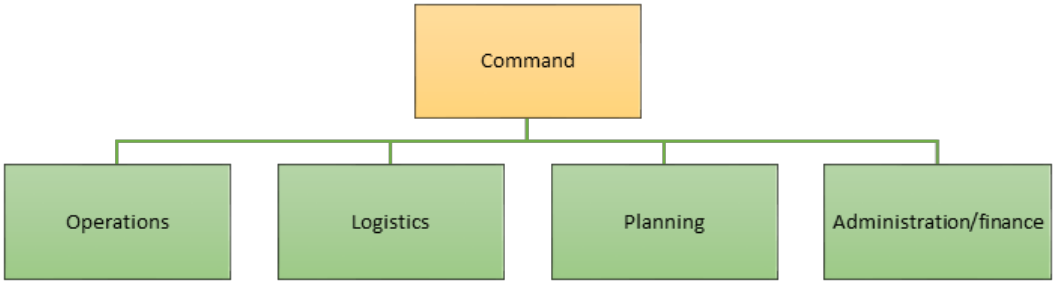


FIGURE. 1. The basic ICS structure.

ICS Law Enforcement Issues and Response Challenges

The emphasis of ICS is functional instead of hierarchal, and information is supposed to flow between functions instead of a top-down method. ICS is also meant to be flexible to meet the needs of any size incident (California Emergency Management Agency, 2010). However, ICS was created for firefighters who deal with fire which is a more stable and scientifically understood hazard (Buck et al., 2006) than an adversary who is capable of independent will and thought. Most of the evidence regarding the implementation and use of ICS come from firefighters (Jensen & Waugh, 2014). Research conducted on decision- making under stress with California firefighters has found several key attributes. These firefighters worked together for years, repeatedly made tough decisions and battled a natural crisis that "does not change tactics or add new weapons." (Klein, 1999, p. 237). The research reveals an extremely glaring difference between fire and LE. Firefighters do not handle conflicts as defined as any situation in which there is an irreconcilable clash between opposing wills (Heal, 2012). These conflicts

involve an adversary who is capable of independent thought and is attempting to thwart the will of the incident commander (Heal, 2012). This problem is strongly linked to the on-going debate among the emergency community about the "one size fits all" incident management system (Jensen & Waugh, 2014). While ICS is useful in managing some phases of a critical incident, it may not function well in the initial stages of an extreme and novel event (Moody, 2010).

Another issue with ICS centers around unified command. Unified command is a "team effort process, allowing all agencies with responsibility for an incident, either geographic or functional, to establish a common set of incident objectives and strategies that all can subscribe to" (California Emergency Management Agency, 2010, p. 15). Unified command allows for collaboration where agencies can work together without affecting the authority, accountability or responsibilities of individual agencies (Heal, 2012, p. 112). In observations made by C3 Pathways, in conjunction with the University of North Florida during ten functional based active shooter exercises, the use of unified command too early in an incident was shown to be a problem. They believed that because unified command is "by nature a committee of leaders discussing potential actions and objectives" decision-making was slowed down during a rapidly unfolding event (C3 Pathways, 2014). There were also problems which centered around a newly assigned commander to the unified command structure and the time it took to gain situational awareness (C3 Pathways, 2014).

NIMS and ICS seek to achieve the utilization of commonly established operational structures and procedures. Nevertheless, LE has misgivings about the hierarchical structure of ICS that is inconsistent with the autonomy normally given to police officers (Jensen & Waugh, 2014). One argument is that a more appropriate model for organizing the response is not ICS but rather coordination within and among organizations and emergency groups that characterize

disaster (Dynes, 1994). The literature shows that ICS does not answer questions or provide countermeasures to solve a crisis but rather provides structure and resource management.

The significance of response training for a large-scale incident cannot be overstated. Jensen and Waugh (2014) said those involved in the response must have significant training in the ICS system, including training exercises, and they must have technical expertise related to the type of hazard event they are responding to and what type of resources will be needed for the event. Also important, is that leaders in the ICS system allow individuals in the system to make decisions based on their technical expertise and allow them to also improvise solutions to new problems as they are encountered (Jensen & Waugh, 2014). Comparatively, Renaud (2012) argues that first responders can arrive at large-scale events where "sounds of gunfire, screaming or mortally wounded people, fires raging, crowds rushing, mobs forming, and other officers or firefighters so overcome by events that they cannot function" (Renaud, 2012, p. 5). She further states that the true indicator of an incident commander's success is how effectively they can gain situational awareness and determine an appropriate course of action. Once there is situational awareness then an ICS structure can begin to take place (Renaud, 2012). Renaud's research indicates there is a time period of initial chaos in large-scale incidents where ICS may not be useful. The time period of initial chaos helps inform the timeline of large-scale incidents and is one of the factors and influences at play during these events.

An organization which operates in an environment of uncertainty, ambiguity and change requires adaptation and to be adaptive requires learning (Hess, 2014). The high level of organizational connectedness and the volatile environments emergency response organizations operate in require a greater ability to adapt to on-going changes, especially during large-scale critical incidents. To adapt, an organization utilizes systems thinking to assist employees with

visualizing systemic patterns and clarifying complex issues with system diagrams (Senge, 2006). Law enforcement's use of the command and control system, which is used in ICS, during large events where officer strictly follow standard operating procedures could makes them unable to adapt to a rapidly unfolding event where there is little or no time to seek guidance from supervisors (Senge, 2006). This lack of adaptation shows a critical vulnerability in the LE emergency response organization.

As previously discussed, AARs are an important learning behavior and a basic learning process that can help learning become institutionalized in an organization (Hess, 2014). For this reason, the use of AARs can help broaden awareness across LE systems (Senge, 2006). Learning from the lessons learned portion of AARs requires a deep understanding of how organizations should learn, however this is not taught in emergency response educational institutions. Furthermore, the learning process and systems thinking are not being taught to emergency agency leaders (Donahue & Tuohy, 2006). The lack of systems thinking is a problem for emergency responders because they fail to learn from the available lessons learned and they do not consider how the responder system works as a whole during large-scale critical incidents.

An incident commander must possess certain traits and skills to lead during a crisis event. The traits of a crisis leader are similar to the skills of a leader in a learning organization and a meta-leader, which were previously discussed. A learning organization leader is a leader who treats people with respect (Hess, 2014) and who can expand their capabilities to understand complexity, clarify vision and improve shared mental models (Senge, 2006). Contrast the learning organization leader to Meta-leaders who have the ability to work across silos and an aptitude to see the bigger picture in rapidly unfolding circumstances. The conclusion can be

made that the three types of leaders could work well in a crisis setting and make good incident commanders.

Summary

Over the past several centuries the number of conflicts across the world has risen. The 150-year evolution of the U.S. government's emergency management system culminated with the creation of the Department of Homeland Security in 2003 and NIMS in 2008, which has ICS as a component. ICS attempts to bring order to the many resources that respond to large-scale critical incident but may not be useful during the initial response phase of a critical incident (Renaud, 2012). The response phase begins when a crisis or conflict, such as an active shooter event, triggers LE to respond and attempt to bring order to chaos. The initial stage of a critical incidents sets the tone for the rest of the incident because decisions in one phase can affect actions taken in later phases (D. Neal, 1997). During this initial phase, on-duty incident commanders are arriving at a scene that could be complete chaos and in which attempting to apply structure, such as ICS, does not work (Renaud, 2012). The large-scale response to these rapidly evolving events often results in confusion during the initial establishment of incident command. Establishing incident command during these situations is a significant challenge in the initial phase (Washington DC Metropolitan Police Department, 2014). These events are highly intense, complex, extremely difficult to resolve and are considered "systems in chaos" (Hillyard, 2000). A timeline of the initial response phase can provide a visual framework for identifying when mistakes occur and can assist responding incident commanders in avoiding mistake.

CHAPTER 3

METHODOLOGY

Analyzing the factors and dynamics of a large-scale critical incident and the timeline of the initial response phase required the gathering of data from AARs of large-scale incidents involving an adversary and other associated documents. A qualitative research approach was used because this research thesis was intended to add to LE's understanding of initial response phase of a large-scale incident. The data gathered in this research project are valuable for LE supervisors' and officers' decision-making during the initial response phase of a large-scale incident. Law enforcement errors during the initial time period are explored in this research along with other factors occurring during the initial phase. An analysis of available AARs and other associated literature was utilized. This data was then used to create the framework of the timeline of the initial response phase of a large-scale critical incident.

An analysis of AARs from large-scale incidents involving an adversary suggests there are several mistakes commonly made by LE at large-scale critical incidents. Examination of the data revealed seven primary mistakes: ICS issues, indiscriminate parking, unified command with and without fire/emergency medical services (EMS), lack of planning, communication issues and inappropriate self-deployment.

Philosophical Worldview and Bias

One of the most important steps in planning a research thesis is for the researchers to define their philosophical worldview assumptions. Defining the researcher's worldview is important because it is "a basic set of beliefs that guide action" (Guba, 1990, p. 17). A researcher's worldview will often lead them to choose a specific approach to their research. In this research thesis, the philosophical assumptions that influenced the researcher are those of a

pragmatic worldview (Creswell, 2014). The pragmatic worldview derives its worldview from actions and situations and is primarily concerned with solutions to problems. Additionally, the ultimate goal is to improve the response of LE to the initial response phase of a large-scale critical incident.

In this project, the major researcher bias is related to being a practitioner in the field of critical incident response including large-scale critical incidents. The biases of the researcher is associated with first-hand knowledge that LE is consistently making errors during these events. When conducting research and analyzing the after-action report data, the researcher was aware of the possible biases and attempted to remain neutral when synthesizing the data. Information from the literature review was also triangulated with the findings and data in the analysis to support the research questions and counter any bias. The purpose of triangulating the data from the literature review with the findings of the analysis was done to capture the different dimensions of the same phenomenon. Also included was discrepant information that ran counter to the themes discovered in the research. By including contrary information, the accounts can be given more validity (Creswell, 2014). The final step used to enhance the validity of the research thesis was a peer review. The peer review was accomplished by locating a subject matter expert in LE critical incident management who reviewed and asked questions about the study. The peer review allowed someone other than the researcher to interpret the findings and further validate the findings.

Research Design and Analytic Strategy

A qualitative research design is appropriate because the research purpose is to add to the LE and emergency management's understanding of large-scale incident involving an adversary. Qualitative research is an approach for exploring and understanding the meaning individuals or

groups attribute to a human or social problem (Creswell, 2014). Qualitative strategies for analysis include a case base approach founded upon specific AARs, a thematic analysis of errors noted in each case, and culminating in a meta-analysis of common errors found across cases.

Data Set

Qualitative research involves purposefully selecting documents that assist the researcher in comprehending the problem and the research question (Creswell, 2014). The inclusion criteria for the data set included AARs from large-scale critical incidents involving an adversary over the past 10 years. Law enforcement AARs are reports that outline the circumstances surrounding critical incidents and their lessons learned. Their content captures information that is important to this research. Specifically, the documents collected for analysis were deliberately pulled from publicly available websites. A simple Google Scholar search containing the words "LE after-action reports" was conducted. Several additional Google Scholar searches of specific high-profile incidents that were broadcasted in the national media was completed.

The inclusion criterion for selecting specific AARs was that they reported on large-scale critical incidents involving an adversary within the past 10 years. The searches produced a dataset consisting of 15 different AARs over the past 10 years. Specifically, these AARs involved large-scale incidents where an adversary had to be defeated, whether by arrest or the use of deadly force, by LE because the adversary was killing or attempting to kill citizens and/or LE officers. The search led to locating the following incidents listed in order by date of occurrence:

- April 16, 2007 - Virginia Polytechnic University Active Shooter
- March 21, 2009 - Oakland Police Department Officer Involved Shootings and Manhunt
- June 29, 2010 - Tampa Bay Police Department Officer Involved Shooting and Manhunt

- July 20, 2012 - Aurora Colorado Active Shooter
- December 14, 2012 - Sandy Hook Elementary Active Shooter
- February 12, 2013 - Christopher Dorner Shootings and Manhunt
- April 19, 2013 - Watertown Massachusetts Manhunt for Boston Bombing Suspects and Officer Involved Shooting
- September 16, 2013 - Washington DC Navy Shipyard Active Shooter
- November 1, 2013 - Los Angeles International Airport Active Shooter
- June 8, 2014 - Las Vegas, NV Officer Ambush and Active Shooter
- July 16, 2014 - Stockton, CA Mobile Hostage Situation
- December 2, 2015 - San Bernardino, CA Active Shooter/Terrorist Attack
- February 20, 2016 - Kalamazoo Michigan Mobile Active Shooter
- June 12, 2016 - Orlando FL, Active Shooter/Terrorist Attack
- January 6, 2017 - Ft. Lauderdale Airport, FL, Active Shooter

The 15 aforementioned reports are not the only available after action-reports. There are several others that were excluded from this research for various reasons. The exclusion criteria for the data set included: (a) pre-planned events, such as protests, (b) incidents involving hoaxes, (c) incidents where the adversary did not attempt to kill citizens or LE, (d) incidents that were documented in an executive summary format, and (e) incidents that did not occur in the United States. While the Boston Marathon Bombings, a pre-planned event, will be discussed, it is only to lay the foundation for the later incident in Watertown, MA. which was not a pre-planned event. Pre-planned events are often staffed by LE officers and many have an incident command system pre-established and officers already at the pre-planned event. The following is a list and explanation of incidents that were not included in this research thesis:

- Executive Summary of Active Shooter Incident at Garden State Plaza Mall, Paramus, New Jersey - November 4, 2013: This incident was encapsulated in a seven-page executive summary which was not as thorough as an after-action report. The report does however show two of the primary issues that the 15 analyzed reports revealed including inappropriate self-deployment and incident command issues. Additionally, the suspect in this incident did not shoot any citizens and in fact ignored them during the incident. He ultimately committed suicide and did not harm anyone but himself. There were no LE officers present prior to his suicide. Based on these facts, the incident was not included in the analysis (Molinelli & Ehrenberg, 2013).
- After-Action Report Arapahoe High School (AHS) Active Shooter Incident: This incident occurred on December 13, 2013 an active shooter incident occurred at Arapahoe High School in Colorado. The post-incident review for this event was not drafted by LE personnel and was written for school personnel. While this was an adversarial conflict, the report was not drafted by LE personnel. The report states that it would make "limited observations about the response of public safety officials" and "We did not attempt to opine on the overall law enforcement response" (Dorn et al., 2016, p. 11).
- After-Action Report Active Shooter, University of Texas at Austin, September 28, 2010: During this event a single shooter shot randomly on campus and ultimately committed suicide. He did not target any citizens or LE officers during the incident (University of Texas at Austin Police Department, 2010). Based on these facts, the incident did not meet the inclusion criteria for this research thesis. The after-action report did not list any of the primary issues other than communications.

- After-Action Report, Santa Monica, California Active Shooter Incident, June 7, 2013: On June 7, 2013 a suspect shot and killed his father and brother, carjacked a vehicle and kidnapped the driver. He then forced the kidnapped driver to drive them to the Santa Monica College where he shot and killed three more people. He also randomly shot at other citizens. Law enforcement officers responded and shot the suspect in the campus library, stopping his attack (City of Santa Monica, 2014). The after-action report for this incident was written by the City of Santa Monica and is not focused primarily on the LE response but the city-wide response and the college. The LE response is encapsulated in two pages of the report and includes five key observations and lessons learned. Because of the minimal information on the LE initial response phase, this event was not included in the analysis.
- After-Action Report Baltimore Police Department (BPD) Officer Involved Shooting, Baltimore, Maryland, January 9, 2011: This incident involved Baltimore police officers who were attempting to disperse a large crowd at a club. Due to the lack of incident command, plain clothes officers entered the club and also attempted to break up the crowd. One of them became involved in an altercation and discharged his firearm when he feared for his life. Responding officers accidentally shot at the plain clothes officer believing he was an armed suspect. The subsequent response by Baltimore police officers was disorganized (Fachner, Lum, Sachs, Stephens, & Williams, 2011). While the report is thorough and lists several issues, including the lack of incident command and inappropriate self-deployment, it does not fit the inclusion criteria of an adversarial crisis for this research thesis.

- After-Action report of civil unrest in Baltimore, Maryland April 2015: Protests erupted in Baltimore Maryland after the in-custody death of Freddie Grey when he was arrested by the Baltimore Police Department on April 12, 2015. Several days of civil unrest followed this event (PERF, 2015). The after-action report drafted by the Police Executive Research Forum (PERF) outlines lessons learned including incident command issues. Because this was a protest, it was not included in the analysis.
- After-Action report of civil unrest in Charlottesville, Virginia 2017: These protests took place after controversy over the removal of civil war statues in a Charlottesville Virginia park (Garmey, Elliker, & Caulder, 2017). Because they were not an adversarial conflict, they were not included as part of the analysis. Planning issues were listed as one of the issues in this report.

The aforementioned reports were all read and analyzed to ensure they fit the exclusion criteria. A noteworthy point is that three of the seven excluded reports listed incident command as challenge during the crisis.

Research Analysis Processes

Once the data was gathered, it was organized and prepared for analysis by collating the reports in chronological order by date and year. After being downloaded into the researcher's computer as PDF files, each after-action report was reviewed by the researcher. During this review, notes were recorded based on the mistakes made, what went well, and the lessons learned in each of the reports. Because the data gleaned from the AARs was dense and rich, the data was "winnowed," which is a process focusing on some of the data and disregarding other parts (Creswell, 2014). The data analysis allowed for themes of the primary mistakes being

made during these events to develop. The themes were coded, organizing the data by text and contained the major findings of the research project (Creswell, 2014).

Using the notes and analyses of the reports, two tables were created featuring the seven primary issues that were discovered during the meta-analysis which are included in Chapter Four of this research thesis. Table 1 presents the 15 analyzed incidents along with the presence of the seven primary mistakes found in the literature. Table 2 utilized the same dataset, only it also included the specifics of the mistakes that were made. This table was created to give further insight into the specifics of the primary issues that were discovered during the analysis.

To provide useful data to the reader and additional insight into these events, the findings of the analysis were converted into percentages. The percentages were formulated by dividing the number of issues that occurred by the total number of events, which is 15. The thematic issues were derived from the analysis of the 15 AARs. The percentages are conveyed in the discussion portion of Chapter 5.

The framework for the timeline was conducted utilizing the logical progression of how a large-scale incident typically unfolds. The beginning, end, and the response are three examples of given constants in all events. Once the given constants were established, the seven primary mistakes were placed in logical progression. Further research will be needed to complete the timeline.

Research Ethics

The dataset used in this research was generated based on existing publicly available data. No human subject information was used, and the data set did not contain any identifiable information other than the specific subjects and victims already publicly identified within the

cases. The application for the IRB with the existing data set is found in Appendix A of this thesis. The form evidences that the research was exempt, and no IRB application is required.

Summary

The intent of this research was to utilize AARs on large-scale incidents to discover common mistakes made during these events. Once mistakes were identified, the data was entered into tables and then used to formulate statistics on the percentage of times a mistake occurred. The issues identified by the analysis were also used to inform the timeline of these events, which provided a visual representation of how a large-scale event can unfold.

Qualitative data is scarce in the area of the initial response phase of large-scale critical incidents. The initial response phase is a relatively unexplored time period and the qualitative approach utilized in this study was meant to provide thorough and comprehensive research on this gap. Triangulation of the data, discrepant information and a peer review were completed to give validity to this research thesis.

This research thesis contributes an increased understanding for LE incident commanders handling these conflicts. The ultimate goal is to prevent these mistakes from re-occurring and improve the response of LE during these events that involve an adversary who is attempting to kill and/or has killed citizens. The ensuing chapters contain the findings of the qualitative document examination and subsequent themes that emerged from the examination.

CHAPTER 4

ANALYSIS

Large-scale critical incidents are becoming more frequent and affect greater numbers of people (Topper & Lagadec, 2013). Inevitably the emergency response operations for these incidents will not go as planned; failure to go as planned is linked to the complex social and technical systems, meaning one element relies on the performance of another with few alternatives (Faith et al., 2011). One tool used to document the lessons learned during these incidents is AARs. After-action reports, also called After-Action Reviews, are a mechanism for sharing performance information to help prevent a reoccurrence of mistakes made and negative actions taken during a critical incident (Donahue & Tuohy, 2006). One of the most well-known AAR mechanisms is the AAR developed by the U.S. Army in the 1970s. Many emergency responders follow this template to document what happened during a disaster or exercise. The reports normally contain accounts of actions taken during the event and possible countermeasures to the problems experienced (Donahue & Tuohy, 2006). Notably, the level of report detail can vary by agency and the different writing styles and formats that are utilized among agencies.

Research from this thesis shows the "lessons learned" in many of these reports are repeated over again in ensuing events. Reports and lessons can often be ignored, and repetitive errors continue to plague response organizations (Donahue & Tuohy, 2006). Relevantly, a culture of learning is often not in place, and defensive organizational behaviors create barriers to incident response improvement. The barriers become difficult for employee expected action as well (e,g,. Police officers and incident commanders), setting them up for difficult day-to-day

choices that may result in poor performance reviews, job loss and loss of colleagues' respect (Hess, 2014).

In smaller critical incidents, failures may go unnoticed because the response systems have the capacity to adapt (Faith et all., 2011). However, minor failures in smaller incidents, can cost lives and money in larger-scale incidents. Small-scale critical incidents involving an adversary happen daily at police departments across the nation; these include incidents such as searches for fleeing suspects and barricaded suspects. Whether or not a LE agency drafts an after-action report for these events depends on agency policy and practice.

After-Action Report Analysis

AARs involving large-scale critical incidents have historically been completed by LE departments in house (Donahue & Tuohy, 2006). The lessons learned from these reports are usually only implemented when there is a major change that needs to be made (Norton, 2016). Many errors being made by LE at large-scale critical incidents have only come to light on a larger scale when these AAR's became publicly available. An analysis of available AARs shows they have become publicly available in the last the last 10 to 12 years. Organizations such as the Police Foundation and the Police Executive Research Foundation (PERF) are now routinely hired by LE departments to conduct after-action reviews of large-scale critical incidents in which they are involved. The reason for creating AARs is best said by the Police Foundation in an after-action report written in 2015 on the Christopher Dorner attacks in southern California in 2014. In the foreword portion of the report, the Police Foundation stated "Reviews of incidents like this are intended to transform "lessons learned" to "lessons applied" in the hopes of enhancing the safety of officers and the public" (Police Foundation, 2015). These AARs contain a wealth of information and using them as a source of information places little burden on local

response organizations (Faith et al., 2011). Mistakes listed in AARs are hard to learn from because the lessons learned are mostly ignored due to being "isolated and perishable rather than generalized and institutionalized" (Donahue & Tuohy, 2006. p. 3). Many of the problems and mistakes are repeated in future events and LE needs to begin learning from them and take advantage of the opportunities they provide. The examination of recent AARs over the past 10 years conducted in this study details the mistakes LE has continually made, identifies trends that can help inform the timeline of the initial response phase and provide opportunities for improvement (see Appendix B for Internet links for all 15 AARs).

AAR1: Virginia Tech University Blacksburg, Virginia Active Shooter Incident, April 2007

Virginia Tech University in Blacksburg, Virginia was the scene of an active shooter incident on April 16, 2007 where 32 people were killed and 17 were wounded. The suspect, who was previously diagnosed with an anxiety disorder, began the incident by shooting two students in a co-ed residence hall in the morning. The suspect then fled the residence hall, went back to his room in another residence hall, changed clothes, and went to a nearby post office and mailed a package of writings and video recordings to NBC News. He then went back to the Virginia Tech campus and went to the Norris Hall, which was comprised of classrooms. The active shooter chained the three main entrance doors to the hall shut and left notes that anyone trying to unchain the doors would trigger a bomb. The suspect then proceeded to begin shooting students and teachers in several different classrooms. He was thwarted from getting into several rooms by students who had barricaded the doors. About 10 to 12 minutes after the attack began, the suspect shot and killed himself (TriData Division, 2009).

Law enforcement officers arrived within 3 minutes of the first emergency call however, it took about 5 minutes to enter the building due to the breaching problem the chains on the doors

caused. Once inside, the officers began to clear the building and heard gunshots on the second floor of the location. When they arrived, they located the deceased suspect and began the triage and rescue of victims (TriData Division, 2009).

The AAR drafted by TriData Division contained fewer details then other reports on the actions of LE and the lessons learned from those actions. Key findings included discovering the Emergency Response Plan for Virginia Tech was lacking and did not include plans for a shooting situation and did not place the proper emphasis on the chain of command's decision-making authority. An interesting finding concerned the use of incident command. According to the AAR, "A formal incident commander and emergency operations center was not set up until after the shooting was over mainly because events unfolded very rapidly. A more formal process was used for the follow-up investigation" (TriData Division, 2009, p. 95). Additionally, no evidence was found that a unified command structure existed because the command posts for LE and fire were not co-located (TriData Division, 2009, p. 119). Communications issues also posed a problem due to the lack of interoperability. The lack of interoperability caused confusion and "could have caused major safety issues for responders" (TriData Division, 2009, p. 119). None of the issues found in other reports was revealed. The thematic errors identified in the AAR include incident command, unified command, unified command with fire/EMS, communications and planning (see Table 1).

AAR 2: Oakland Police Department Incident, March 2009

The Oakland incident began on Saturday March 21, 2009 when two officers stopped a parolee who had recently been released from prison. The suspect shot and killed the two officers who had stopped him and fled the scene. Community members helped the mortally wounded officers until police arrived. A search for the murder suspect began and a perimeter was

TABLE 1. Problems Identified During Virginia Tech Incident

Problem identified in AAR	Description
Incident Command	A formal incident commander and EOC was not set up until after the shooting was over because "events unfolded very rapidly" (p. 95).
Unified Command	There was little evidence that a unified command structure existed at the Virginia Tech incident (pp. 119 and 120).
Unified Command with Fire/EMS	There was little evidence that a unified command structure existed at the Virginia Tech incident. CP's for EMS and LE were at different locations (pp. 119 and 120).
Communications	Lack of a common communications system between on-scene agencies created confusion and could have caused major safety issues for responders (p. 119).
Planning	The Emergency Response Plan for Virginia tech was lacking and did not include plans for a shooting situation and did not place the proper emphasis on the chain of command's decision-making authority (p. 17).

established. The suspect was identified a short time later by Police Evidence Technicians who had searched the suspect's vehicle. The suspect was tracked to a nearby apartment using information from a confidential informant (CI), after which an Oakland Police Department (OPD) Lieutenant ordered the SWAT team to clear the residence because he believed it to be "highly unlikely" the suspect was in the apartment (Stewart, 2009, p. 4). An entry was conducted a short time later by the SWAT Team and two of their team members were killed in a gunfight with the suspect. The suspect was also killed in the gunfight.

In a public report of findings and recommendations for the incident, responding supervisors and command officers failed to establish a command post and implement fundamental aspects of basic emergency management protocols (Stewart, 2009). Additionally, there was a failure to establish overall leadership as the incident "evolved in complexity" (Stewart, 2009). Also, a serious issue was raised with no command post (CP) being established, resulting in the response overwhelming on-scene commanders with many responders self-

assigning their own activities, in other words they inappropriately self-deployed. While indiscriminate parking was not listed as a problem, the report suggested that ambulances had a difficult time accessing the crisis site. The AAR also says further investigation is needed to discover whether or not indiscriminate parking was the cause in the delay of ambulance access (Stewart, 2009, p. 14). The primary themes identified in the report include incident command, inappropriate self-deployment and unified command (see Table 2).

TABLE 2. Problems Identified During Oakland Incident

Issue	Description
Incident Command	Issues related to implementing ICS and filling critical positions led to a fundamental lack of planning (p. 15).
Inappropriate Self-deployment	No CP was established and the response overwhelmed on-scene commanders with many responders self-assigning their own activities (p. 2).
Unified Command	While no unified command issues are addressed in the AAR, there was a failure to implement the "most fundamental elements of the Incident Command System" (p. 6); 115 officers, many from other agencies, responded to this incident (p. 2). Unified command is an essential feature of ICS and there was a failure to implement it in this situation.

AAR 3: Tampa Bay Florida Manhunt, June 2010

Around 2:15 a.m. on June 9, 2010 two Tampa Police Department (TPD) officers were shot and killed during a traffic stop. The suspect fled the shooting on foot and escaped from the police. The LE response to the incident and subsequent search for the suspect that lasted 96 hours included 22 LE agencies and 1000 personnel. The search ended with the arrest of the suspect. TPD utilized a multi-agency unified command to coordinate and plan the search (Stewart, King, & Lafond, 2011). The report did not list any of the primary mistakes identified in other reports. During TPD's initial response to this large-scale incident, officers implemented

the "initial stages of ICS within minutes of arrival to the crime scene" and "the ICS structure employed for this incident was both adaptable and responsive to the changing needs of the incident" (Stewart et al., 2011, p. 2). Additionally, when the initial search for the suspect yielded no results, thus necessitating the need for additional searches, the unified command structure expanded to include other LE personnel (Stewart et al., 2011). The successful use of ICS in this incident was attributed to pre-existing relationships with local and federal agencies and their experience with ICS and unified command during the 2009 Super Bowl XLIII which had a large terrorism prevention requirement. The Super Bowl required detailed planning and coordination among multiple LE jurisdictions. Additionally, any jurisdiction who accepted federal funds from this event had to agree to receive training in ICS. A review of the document also revealed no mention of self-deployment or parking issues. This is the only after-action report reviewed in this research thesis that did not list any issues or problems.

Communication issues were not listed as an issue in this incident. The Tampa Florida region has 16 public safety jurisdictions that utilize an interoperable communications system. This allows agencies from multiple jurisdictions to communicate with each other during critical incidents. According to the report, this technology helped them implement ICS. Because none of the primary themes were identified in this report, no table was completed.

AAR 4: Aurora Colorado Active Shooter, Century 16 Theatre, July 2012

Just after midnight on July 20, 2012 a gunman entered a theatre at the Century 16 Theater complex in Aurora, CO where the premier of the latest Batman movie was playing and opened fire on moviegoers. As a result, 70 people were shot, 12 of whom died. Additionally, 12 people suffered injuries when they fled the theatre and 82 people total were injured. After the shooting,

the suspect was arrested at the rear of the theatre by a responding officer. The Aurora Police Department (APD) was the primary LE agency responding to this large-scale critical incident.

The after-action report, written by Tri Data Group for the City of Aurora after the Century 16 Theatre shooting on July 20, 2012, recommended the Aurora Police Department (APD) revise their pre-incident planning for an active shooter or bomber (TriData Division, 2014). The report further recommended police departments must plan for large-scale critical incident responses. This planning should include such things as establishing joint command with fire, obtaining building diagrams, internal contact phone numbers, mutual aid staging locations and communications procedures. (Tri-Data, 2014).

According to the AAR, better use of the ICS would have helped manage the incident and no single commander existed until the end of the first hour of the incident. APD also failed to establish unified command with fire services early in the incident. While there was unified command later in the event, an early request for an in person meeting between the fire and police departments went unanswered. One interesting note on the ICS is the report's mention for the "need for formal ICS varies from incident to incident. Activation of ICS does not mean waiting for every element of the ICS system in place before acting" (TriData Division, 2014, p. 32).

The initial arrival at the theatre of mutual aid officers was uncoordinated and confusing. While a Denver Police Department SWAT Lieutenant took control of this situation, a sergeant from an unspecified agency said officers from other departments would not respect his rank or obey his instructions. Because of the failure to respect his rank, some officers from other departments self-assigned to unnecessary jobs that were not needed or performed duplicate duties (TriData Division, 2014). Another important issue was the problem caused by parked police vehicles. The empty vehicles were blocking ambulances from getting to patient triage

locations. Communication between fire and LE was also an issue when they did not use their interoperable radio system to communicate with one another during the initial response phase when they were arranging transport and triage operations (Tri-Data Division, 2014, p. 27). The primary themes identified included incident command, inappropriate self-deployment, indiscriminate parking, unified command with fire/EMS, and communication (see Table 3).

TABLE 3. Problems Identified During Aurora Incident

Problem Identified in AAR	Description
Incident Command	Better use of ICS would have led to better incident management (p. 110).
Inappropriate Self-Deployment	Some mutual aid officers self-assigned to jobs inconsistent with the overall needs (p. 25).
Indiscriminate Parking	Parked police vehicles blocking roads made it hard for ambulances to access the crisis site (p. 18).
Unified Command with Fire/EMS	There was no unified command between fire and police in this incident (p. 24).
Communication	LE was unable or did not know how to communicate with fire despite interoperability (p. 23)
Planning	Revise pre-incident planning for an actives shooter and bomber. This includes pre-planned mutual aid (p. 28)

AAR 5: Sandy Hook Elementary School (SHES) Active Shooter Incident, December 2012

SHES, located in Newtown, Connecticut, was the scene of an active shooter incident on December 14, 2012. The suspect entered the school by shooting out the front windows and then began going classroom to classroom shooting school staff and students as he went. Ultimately the suspect took his own life by shooting himself in a classroom. The entire incident lasted 6 minutes and the suspect killed 20 students, six school staffers and injured two. Among the first responders to the incident were the Connecticut State Police (CSP) and the Newtown Police Department. Like other AARs this incident revealed many of the same response challenges including ICS, parking, self-deployment and lack of planning.

As in other large-scale events, many officers self-deployed to the scene making it hard to manage the resources on scene. Many of these self-deployed resources became an issue because they were co-located with the command post (CP), causing unnecessary foot traffic in the CP. Another issue focused on parking. The entrance to the school is a narrow road which became jammed with vehicles that parked in a way that obstructed other responding vehicles later in the event. Some of the vehicles were left locked and the engines running. On the incident command portion of the event, it took time to determine which agency was going to assume overall command and control of the incident. The report makes no mention of an incident commander and only that the CSP "established its command presence within minutes of the incident" and that "Organizations and individuals unfamiliar with the ICS and Unified Command should train accordingly" (Connecticut State Police, 2018, p. 70). Unified command with fire is not mentioned in the report; however, there is discussion referencing multiple CPs and EOCs being used. The multiple CPs and EOCs led to "confusion as to responsibilities for different tasks and the duplication of efforts to some outside requests" (Connecticut State Police, 2018, p. 43). The recommendation to fix this problem was further training on "unified command post strategies described in NIMS" (Connecticut State Police, 2018, p. 70).

These types of events are predictable and as such pre-planning is an important factor for success. The AAR listed this as an issue and suggested that pre-identified locations should have available information, such as school layout, in the event of a major incident. Another listed issue was communication between agency personnel at the different command posts. Their different locations were the cause of the communication problems, which concerned what resources were needed or not needed at the crisis site (Connecticut State Police, 2018, p. 41).

One interesting issue noted in the AAR was that some people were reluctant to give input in the AAR process. The report also noted that the tool used to solicit feedback was required to be done by some supervisors, but others did not. The feedback issue is an interesting finding that could help explain why there are discrepancies in AARs. The thematic issues identified in this AAR include incident command, inappropriate self-deployment, indiscriminate parking, unified command, communication and planning (see Table 4).

TABLE 4. Problems Identified During Sandy Hook Incident

Problem Identified in AAR	Description
Incident Command	It took time to determine which agency was going to assume overall command and control of the incident (pp. 18 and 19).
Inappropriate Self-deployment	Self-deployment of personnel presented a significant challenge (p. 26).
Indiscriminate Parking	Parked police vehicles made ingress/egress for later responding personnel difficult or impossible (p. 14).
Unified Command	Multiple CPs and EOCs were activated leading to confusion as to responsibilities for different tasks and duplication of efforts in regard to some outside requests. The report recommended additional training in "unified command post strategies" (p. 43).
Communication	Early in the incident, there was insufficient communication between personnel at the scene and CP personnel about resource needs (p. 41).
Planning	Pre-planning should be completed for high-profile locations (pp. 16 and 17)

AAR 6: Boston Marathon Bombing and Watertown Massachusetts Incident, April 2013

The Boston Marathon bombing attack took place on April 15, 2013 at 2:49 p.m. when two brothers placed improvised explosive devices (IEDs) in two separate locations near the finish line of the race. The two explosions, which were 13 seconds apart, took the lives of three people and injured 264. The subsequent response to this mass casualty event went well because of the prior planning. Unified Command began quickly after the explosions and a unified

command center was established at a nearby hotel. Boston Police Department (BPD) made repeated radio broadcasts to responding officers reminding them not to park and block roads with their vehicles (Project Management Team, 2014).

The suspects in the bombing escaped the initial scene and were subsequently identified by LE several days later. Law enforcement officials launched a large-scale search for the suspects and included a shelter-in-place order for the entire Boston area. On April 18, 2013 at 10:25 p.m. the suspects killed a Massachusetts Institute of Technology (MIT) police officer on the Cambridge campus. The bombing suspects fled the scene and carjacked a citizen at 11 p.m., taking his vehicle and fleeing the scene. The suspects were then located in Watertown, MA utilizing the stolen vehicle's GPS anti-theft system (Project Management Team, 2014). The suspects were confronted by LE and a gunfight ensued during which the suspects used four IEDs against the officers, including a pressure cooker bomb and pipe bombs. One of the suspects was injured in the gunfight and as Watertown police officers were attempting to handcuff him the other suspect accidentally ran over the first suspect. The gunfight ended with the death of the first suspect. The second suspect escaped the scene and the vehicle was located a half-mile away. Believing the suspect had escaped on foot, a perimeter was established and a search for the remaining suspect began. A shelter-in-place request was made to the Watertown area and house to house searches were conducted. A Watertown residence called 9-1-1 during the early evening hours and said he spotted the suspect in his backyard. A large number of officers self-deployed to the scene with more than 100 officers in front and behind the home. After a 2-hour standoff the suspect was arrested and transported to a medical center by ambulance (Project Management Team, 2014).

In the after-action report on the Boston Marathon bombing on April 15, 2013 the conclusion indicated the response to the bombing was a success overall but there was a lack of an integrated public safety plan (Project Management Team, 2014). The report recommended a single, integrated and comprehensive operational plan for all public safety organizations focusing on all hazards and with appropriate contingency planning should be developed (Project Management Team, 2014).

Focusing on the Watertown incident several days after the bombing during the apprehension of the second bombing suspect in Watertown, many officers abandoned their vehicles at access points with their emergency lights activated and doors open. The indiscriminate parking hindered the progress of an ambulance carrying a critically wounded officer from the gunfight with the suspects. The lack of command was also a problem because incoming LE officers were not assigned roles or given briefings which in turn caused command and control, officer safety and logistical issues. The confusion about who had overall command was a serious issue as thousands of officers self-deployed to Watertown, MA. Many personnel also refused to recognize command authority from anyone who was not a member of their own agency. Communication issues also caused friction because many responding officers had poor radio discipline and there was "unnecessary chatter" (Project Management Team, 2014. P.0119). Despite this, interoperable communications were effective among LE agencies during the Watertown incident (Project Management Team, 2014, p. 111). The thematic errors identified in the AAR include incident command, inappropriate self-deployment, indiscriminate parking, and communication (see Table 5).

TABLE 5. Problems Identified During Watertown Incident

Problem Identified in AAR	Description
Incident Command	There was no command structure to manage incoming personnel. Caused command and control issues (p. 10). Lack of clearly identified field command in Watertown, Mass (p. 113).
Inappropriate Self-deployment	A significant portion of officers that arrived in Watertown, MA self-deployed (p. 10).
Indiscriminate Parking	Police vehicles hindered access to and egress from the area in Watertown. This was an issue for an ambulance transporting a critically wounded officer (p. 115.)
Communication	Several agencies reported superfluous radio traffic and "unnecessary chatter" during the beginning of the incident in Watertown, Mass (p. 119).

AAR 7: Christopher Dorner Incident, September 2013

For 9 days, in September of 2013 southern California law enforcement actively searched for Christopher Dorner a former Los Angeles police officer wanted for murder. Dorner was ultimately killed during a standoff with San Bernardino Special Enforcement Detail after barricading himself in a cabin in the San Bernardino Mountains (Police Foundation, 2015). The after-action report from this incident cited command and control problems which "led to hundreds of officers converging on the scene of an active shooting, most with no understanding of what their role would be or how to interact with the command structure at the scene (Police Foundation, 2015, p. 11). Also, narrow snow-lined roads leading to Dorner's final hiding place were severely congested with responding police vehicles. The police vehicle congestion caused the delay of San Bernardino County Sheriff Department's (SBCSD) SWAT equipment. One agency stated the self-deployment of "non-essential unrequested LE personnel delayed their actions, diverted their attention, and put officers and deputies at risk" (Police Foundation, 2015, p. 56). Several of the responding agency's commanders self-deployed. The commander's self-

deployment caused on-scene commanders unable to establish control because many of those gathered would not recognize the authority of another agency.

Communications issues were primarily caused by interoperability problems. While communications were an issue throughout the crisis, the most critical issues occurred during the final hours when hundreds of officers self-deployed to a remote mountain area where Dorner was barricaded. These officers had no radio communication with the SBCSD SWAT Team, who were in contact with Dorner. The lack of radio communication caused serious officer safety issues (Police Foundation, 2015). In the conclusion of the report, the authors stated that "most of the problems and their solutions involve advanced planning and coordination among the LE leaders in the region" (Police Foundation, 2015, p. 95). These types of plans, while difficult to create, should be created because of the increase in mobile, regional events (Police Foundation, 2015). The thematic errors in the AAR include incident command, inappropriate self-deployment, indiscriminate parking, unified command and communication (see Table 6).

TABLE 6. Problems Identified During Dorner Incident

Problem Identified in AAR	Description
Incident Command	Command and control issues led to hundreds of officers converging on the scene of an active shooting (p. 11).
Inappropriate Self-deployment	Self-deployment put officers and deputies at risk (p. 56).
Indiscriminate Parking	Roads were so congested with police vehicles, SBSD SWAT equipment was delayed in reaching the scene (pp. 56-57).
Unified Command	The use of unified command and control became less coordinated as events expanded to involve more agencies (p. 47).
Communication	The largest and most extensive lack of radio interoperability happened in Big Bear when Dorner was finally cornered and stopped (p. 60).
Planning	Most of the problems and their solutions involve advance planning and coordination among LE leaders (p. 95)

AAR 8: Washington DC Naval Shipyard Active Shooter Incident, September 2013

On September 16, 2013 at 8:16 a.m., an active shooter incident began at the Washington DC Naval Shipyard when a suspect entered building 157 and began shooting innocent victims. Several minutes later the first 9-1-1 calls were made and the initial response phase by LE began. In the first 10 minutes, the suspect shot and killed 10 people. Within 5 minutes of the call being dispatched, police officers began arriving at the Navy Shipyard. The first arriving police officers had difficulty locating the crisis site due to the large number of buildings in the shipyard and the difficulty in discerning the large number of buildings. Within several minutes, hundreds of officers from multiple agencies converged on the crisis site attempting to locate the shooter. The overconvergence of self-deploying officers caused the streets to become jammed with emergency vehicles. When LE teams began entering the building where the suspect was located, the suspect was believed to have seen the teams and retreated from the first floor to the third floor. On the third floor, the suspect walked down the center of the building and eventually made his way to a cubicle on the west side of the building. A LE team who entered the area was shot at by the suspect. One of the officers was struck in both legs and was evacuated to receive medical treatment. Another team of LE officers then located and engaged the suspect, who was killed during an exchange of gunfire (Washington DC Metropolitan Police Department, 2014).

The lessons learned from this incident are similar to others and include inappropriate self-deployment. Some officers self-deployed to the scene, which caused crowding at the scene and difficulty in tracking resources. The large number of vehicles that initially responded to the scene caused congestion, but officers were able to get control of this issue fairly quickly. Managing the large number of emergency vehicles was one of the three traffic related challenges. Another issue centers around incident command. During the initial response phase,

"full" incident command was not established. When incident command was established, not every involved agency and critical function was represented in the unified command structure (Washington DC Metropolitan Police Department, 2014).

Hundreds of officers self-deployed during this incident to assist with the tactical operation to stop the suspect's actions. The inappropriate self-deployment caused congestion around the command post, staging areas and the outer perimeter. While policies prohibiting self-deployment existed, command officials and senior managers failed to enforce the policy. One interesting entry in the after-action report states "This is a challenging issue that is rarely, if ever, trained or exercised, but should certainly be included (Washington DC Metropolitan Police Department, 2014, p. 43).

Similar to the 2014 Las Vegas active shooter incident, superfluous radio transmissions by officers outside of the building where the suspect was located, interfered with radio traffic inside the building. Teams of officers inside the building with the suspect were unable to transmit important information because of the excessive radio traffic from officers outside (Washington DC Metropolitan Police Department, 2014).

Incident command was not established during the initial response phase of the incident while the suspect was still active. Once incident command was established, not all responding agencies were represented in the unified command structure.

An interesting finding in the Washington Navy Yard AAR focuses on the confusion caused when attempting to establish incident command during rapidly unfolding events. The report compares confusion in the Washington Navy Yard incident with comments from officials involved in the Newtown, Connecticut and Aurora, Colorado active shooter incidents. These officials believed it was a major challenge to establish incident command during the initial

response phase. Compare this to comments made by first responders from both Orlando PD and the Orange County Sheriff's Office who stated it is difficult to pay attention during ICS training because its "structure to real incidents" (Straub, Cambria, 2017, p. 59). The report suggests researchers and LE leaders should re-examine ICS for improvement. The following table shows the primary issues found in the analysis of the Washington DC Naval Yard active shooter event. The thematic errors identified in this AAR include incident command, inappropriate self-deployment, indiscriminate parking, unified command, and communication (see Table 7).

TABLE 7. Problems Identified During Washington DC Navy Yard Incident

Problems Identified in AAR	Description
Incident Command	During the initial response, incident command was not clearly established (p. 11).
Inappropriate Self-deployment	Officers who self-deployed to the scene may have caused congestion in and around the scene (p. 42).
Indiscriminate Parking	While the sheer number of responding vehicles initially caused congestion, officers were able to establish order and ensure emergency vehicles had access to the scene (p. 46).
Unified Command	Not all critical agencies and critical functions had representation in unified command (pp. 38 and 40).
Communication	Some officers could not access the main channel for tactical response and a substantial amount of radio traffic interfered with other officer's ability to communicate vital information (p. 52).

AAR 9: Los Angeles International Airport (LAX) Active Shooter Incident, November 2013

LAX is more than 3,245 acres, has nine passenger terminals and 12,500 parking stalls. In 2013 it was the sixth busiest airport in the world and the third busiest in the United States. On November 1, 2013, LAX experienced an active shooter event. At approximately 9:18 a.m., a suspect, armed with a handgun, entered Terminal 3 of the airport, approached a Transportation

Security Administration (TSA) Officer and shot and killed the officer. The suspect then went through the airport concourse shooting and wounding several other victims. Law enforcement officers from two different jurisdictions including Los Angeles Police Department (LAPD) and Los Angeles World Airport Police Division (LAWAPS) responded to the scene. The suspect was subsequently shot several times by LAWAPS officers during a gunfight and was taken into custody. After the shooter was no longer a threat, officers searched and secured the terminal and began to clear the rest of LAX.

Similar to other large-scale events such as this, there was initial confusion and establishing unified command and incident command was delayed. The lack of interoperability in the radio system caused issues with cross-agency coordination, mutual aid response and resource management. Other incident command issues centered around the location of the incident command post. The Los Angeles Fire Department (LAFD) did not initially integrate with the LAWAPD Incident Command because they were concerned about the location of the ICP being too close to the initial shooting scene. The lack of unified command impeded the incident commander's ability to coordinate the victim extraction with LE and fire. Numerous other issues with incident command were listed in the AAR including the need to improve incident command's situational awareness, build-out of the ICS structure and information flow within the ICS structure.

The lack of a check in process for arriving mutual aid units caused some officers to self-deploy to the crisis site. The lack of a staging area also caused a large number of vehicles to park indiscriminately and unified command had a difficult time finding out to whom the vehicles belonged. The problem was so bad unified command had to tow responder's vehicles out of the way (Lindsey, 2014). One recommendation in the report focused on developing a

communications annex for the LAX Emergency Plan, to deconflict some of the communications problems they encountered during the crisis (Lindsey, 2014). The thematic errors identified in the AAR include incident command, inappropriate self-deployment, indiscriminate parking, unified command with and without fire/EMS, communications and planning (see Table 8).

TABLE 8. Problems Identified During LAX Incident

Issue	Description
Incident Command	The inability to identify the IC caused difficulty when integrating unified command with fire (pp. 20 and 21).
Inappropriate Self-deployment	Some resources had self-deployed which made accountability during the initial response difficult (p. 49).
Indiscriminate Parking	A challenge for unified command was the large number of vehicles. Ultimately some responder's vehicles had to be towed (p. 49).
Unified Command	The establishment of unified command and the incident command post was delayed (p. 14).
Unified Command with Fire/EMS	LAFD did not initially integrate into unified command because of security concerns over the location of the CP (pp. 19 and 20).
Communications	The lack of interoperable radio communication made it difficult for the command post to track resources (p. 30).
Planning	Development of a complex communication plan annex for the LAX Emergency Plan (p. 32).

AAR 10: Las Vegas Officers Down/Active Shooter Incident, June 2014

Two on-duty Las Vegas Metro Police Department (LVMPD) walked into the CiCi's Pizza restaurant in northeast Las Vegas on Sunday June 8, 2014 at 11:05 a.m. to eat lunch. While they ate, a male and female couple walked into the restaurant and ambushed the two officers killing them both with firearms as the officers ate (Thorkildsen, Shults, Woodmansee, & Tracy, 2016). Both assailants then exited the restaurant and walked next door to a Wal-Mart. The male suspect then fired one round into the air and told everyone to leave. A citizen who had a concealed carry permit and was armed with a handgun, pointed his weapon at the male suspect.

The female suspect subsequently saw the citizen and shot and killed him. Both suspects then moved to the rear of the Wal-Mart where they were confronted by teams of responding LVMPD officers. Ultimately the male suspect was shot and killed by officers and the female suspect shot herself and later died at the hospital.

The United States Department of Justice drafted the after-action report for this incident. This document outlines many of the same lessons learned from other reports. The issue of inappropriate self-deployment occurred when the suspects entered the Wal-Mart and it was known that there were injured officers. LVMPD utilizes Multi-assault Counter Terrorism Action Capabilities (MATAC), which is a counter-terrorist response strategy that involves multiple coordinated attacks. This strategy directly addresses avoidance of overconvergence of resources to prepare for multiple attacks. Because this incident involved officers who needed help, the emotional tenor of the incident caused the self-deployment issues. The report noted that "strong supervisory direction and incident command" can stop this from occurring (Thorkildsen et al., 2016, p. 19).

The next finding of the report lists the lack of establishing incident command, resulting in miscommunication and confusion. The lack of incident command also caused the proliferation of other issues including a staging area not being identified which stymied the response coordination. The specifics of the incident command issues in this situation are important because they detail a serious problem. The on-duty watch commander (WC), which is normally a LE lieutenant, arrived with the first wave of officers. LVMPD policy states the first arriving watch commander assumes command and the role of incident commander. In this instance the watch commander, who was a lieutenant, elected to take a perimeter position. The WC then met with the next arriving supervisor and asked him to take the IC role. While LVMPD police and

ICS does not mandate that the IC role must be taken by the highest-ranking LE officer on scene, the report states it would have been appropriate for the lieutenant to take charge because of the "complex and evolving nature of the incident" (Thorkildsen et al., 2016, p. 21). The sergeant serving as the IC caused confusion because of the WC's rank. Officers continued to ask the WC lieutenant questions, including requests for direction and other questions instead of the IC sergeant. This questioning of the WC lieutenant caused confusion about who was the IC and who was actually directing the scene.

Law enforcement follows a para-military hierarchical command structure during normal operations. It is natural and expected for officers to follow this hierarchical command structure during a rapidly unfolding large-scale critical incident. It is also difficult for officers to separate rank and role during these events, which is partially responsible for the confusion in the Las Vegas incident. The confusion also led to unified command issues with the fire department. Drilling down into the cause of this issue reveals it to be the absence of a single, clearly identified watch commander (Thorkildsen et al., 2016).

During the initial response phase, there were communication issues because the interior operations were occurring on the same channel as exterior operations. The communication issue caused superfluous radio traffic from exterior perimeter units. Interior units, who were in contact with the suspects, needed the radio channel due to the nature of their actions. Communications were split and moved to other channels, but some officers did not switch channels, which caused even more confusion. Additional communication problems included garbled transmissions and difficulty transmitting throughout the incident. The thematic errors in the AAR include incident command, inappropriate self-deployment, unified command with fire/EMS, and communications (see Table 9).

TABLE 9. Problems Identified During Las Vegas Incident

Problems Identified in AAR	Description
Incident Command	Incident command was not properly established (p. 20).
Inappropriate Self-deployment	Quicker MACTAC activation might have prevented some of the over convergence of officers who self-reported to the incident (p. 19).
Unified Command with Fire/EMS	The inability to identify the IC caused difficulty when integrating unified command with fire pp. (20 and 21).
Communications	Radio communication on the same frequency led to excessive radio traffic and confusion (p. 22). The communications center was burdened with repeated requests from LVMPD personnel (p. 20).

AAR 11: Stockton, California Mobile Hostage Situation, July 2014

On July 16, 2014, the Stockton Police Department in California experienced a large-scale critical event when three suspects took three hostages after a bank robbery and went mobile in an SUV. A pursuit ensued during which 100 plus rounds were fired from high powered rifles by the suspects at the pursuing police officers (Braziel, Devon Bell, & Watson, 2015). Over 50 police vehicles took part in the pursuit that reached speeds of 120 miles per hour. Because of the dangerous nature of the pursuit and the fact that the suspects were actively shooting from the vehicle, spike strips were not deployed due to the danger to the deploying officer (Braziel et al., 2015). Additionally, Stockton PD did not have any air assets available which would have allowed them to follow the vehicle from a distance. Later in the pursuit, a San Joaquin County Sheriff's Department fixed wing aircraft assisted in the pursuit and was credited with saving the lives of officers who were able to back off the pursuit. The fixed wing aircraft was also able to warn pursuing officers of ambushes (Braziel et al., 2015). At one point, the suspect vehicle encountered officers who were on foot. A gunman in back of the suspect vehicle opened fired on the officers. The officers returned fire and were successful in deflating the suspect vehicle's tires

causing it to fishtail down the road. Less than a half mile later, the suspect vehicle came to a stop with the suspects firing at police officers. Multiple police officers opened fire on the vehicle killing two of the suspects and one of the hostages (Braziel et al., 2015). One of the suspects was ultimately arrested. Prior to the termination of the pursuit, one hostage was thrown from the vehicle by a suspect and another escaped by jumping from the moving vehicle. During the 60-mile pursuit, which lasted slightly more than an hour, the suspects disabled 14 police vehicles including the Stockton Police Department S.W.A.T. armored BearCat (Braziel et al., 2015).

In the after-action report written by the Police Foundation, suggestions on improving LE's response to these types of events included developing plans and scenario-based training involving highly innovative scenarios outside the normal response protocols (Braziel et al., 2015). While allied agencies did not deploy to the pursuit, officers from Stockton Police Department self-deployed to the pursuit because this was an emotionally charged event. Because this event happened on a Wednesday, a common work day for many officers, there were more officers in the field then other days of the week (Braziel et al., 2015). Of particular interest is the discovery by the review team that self-deployment by other agencies is not an accepted practice in this area and not allowed by supervisors and leadership (Braziel et al., 2015). Leadership during the pursuit, specifically direction from supervisors early in the pursuit, was lacking. One explanation given was that supervisors believed that it was more important to allow officers directly involved in the pursuit to have "exclusive access" to the radio. Other officers however, were frustrated with "no one taking charge of the pursuit" (Braziel et al., 2015, p. 26). While literature on indiscriminate parking during this incident could not be located, the after-action report from the San Bernardino terrorist incident lists this as a problem in the Stockton situation

(Braziel, Straub, Watson, & Hoops, 2016). The thematic errors identified in the AAR include incident command, inappropriate self-deployment, indiscriminate parking and planning (see Table 10).

TABLE 10. Problems Identified During Stockton Incident

Problem Identified in AAR	Description
Incident Command	Leadership during the pursuit, specifically direction from supervisors early in the pursuit, was lacking. One explanation given was that supervisors believed it was more important to let officers directly involved in the pursuit to have "exclusive access" to the radio. Other officers however were frustrated with "no one taking charge of the pursuit" (p. 26).
Inappropriate Self-Deployment	Stockton officers self-deployed to the pursuit (p. 31).
Indiscriminate Parking	During the stop of the suspect vehicle, SPD vehicles fanned out across all three lanes of traffic and onto the dirt shoulders. This was partially created by the large number of responding officers, many of whom felt the need to be as far up front as possible. This contributed to sympathetic gunfire (p. 33 and 34).
Planning	Agencies should develop plans for heavily armed mobile hostage situations (p. 25).

AAR 12: San Bernardino Inland Regional Center Active Shooter/Terrorist Attack, December 2015

On December 2, 2015 at 10:59 a.m., a male and female shooter entered the Inland Regional Center (IRC) and began shooting Environmental Health Department employees attending a holiday party. A search of the IRC and surrounding area was conducted by multiple LE agencies. Information was developed and gathered by a San Bernardino Police Department Crime Analyst that led to information on the suspects. Ultimately, LE located the suspect vehicle and a pursuit ensued. When the pursuit terminated, both suspects were killed by police. Twenty two civilians were wounded, 12 were killed, and two officers were injured during the

incident. The FBI later classified the shooting as an act of terrorism. The LE response and lessons learned for this incident were documented in an AAR by the Police Foundation.

At the IRC, initial Incident Command unintentionally became decentralized when LE officers attempted to locate the suspects and was not formalized until experienced leaders arrived. While the deployment of many officers to the IRC was initially appropriate, the deployment lacked coordination. Indiscriminate parking was also a problem because there was "limited appreciation" of the problems unattended police vehicles caused which included blocking ingress and egress routes for tactical units, and ambulances to the IRC (Braziel et al., 2016).

When information was developed on the potential location of the shooters, officers self-deployed, which resulted in those officers taking independent action to locate the suspects. Some officers even left their assigned posts near the IRC without notifying incident command. The self-deployment of officers to locate the suspects led to further parking issues at the scene where the officer involved shooting with the suspects occurred. These issues caused tactical assets, including armor, to be delayed in reaching the scene. Just prior to LE locating the suspects, the lack of interagency radio communication led to a lack of coordination between LE agencies. The lack of interagency radio communication is believed to have led a sergeant to stop next to the suspect's alerting them to the presence of LE. Additionally, the absence of effective command and control led to coordination problems when the suspects were located, including no prestaging of personnel and equipment and no pre-vehicle stop planning (Braziel et al., 2016, p. 61). Communication issues were also a problem when the number of LE personnel responding grew so congested the volume of radio traffic limited available radio broadcast time. Also, an issue was the large number of radio channels being used, which caused confusion about which

channel was best to monitor for accurate information (Braziel et al., 2016, p. 71). While a lack of planning was not cited during this incident, the authors notes that "Agencies should routinely examine critical incident reviews and plan at a regional level for the possibility of similar events" (Braziel et al., 2016, p. 62). The report also indicated pre-planning for "timely" access to building diagrams where large numbers of people regularly gather due to issues officers had while clearing the IRC building (Braziel et al., 2016, p. 82). The thematic issues identified in the AAR include incident command, inappropriate self-deployment, indiscriminate parking, unified command, communication and planning (see Table 11).

TABLE 11. Problems Identified During San Bernardino Incident

Problems Identified in AAR	Description
Incident Command	At the IRC, initial Incident Command unintentionally became decentralized when LE officers attempted to locate the suspects and was not formalized until experienced leaders arrived (p. 60).
Inappropriate Self-Deployment	The urgency to capture the suspects and the resulting shootout contributed to more individuals self-deploying (p. 61).
Indiscriminate Parking	There was limited appreciation of the consequences of unattended police vehicles blocking access routes to critical responding units such as tactical units, fire and EMS (p. 61).
Unified Command	Not until the arrival of other public safety leaders with "enhanced experience" in incident command did the formalized unified incident command leadership begin to emerge. As the incident continued to evolve, unified command became more evident (p. 60).
Communications	The lack of interagency radio communication led to a lack of coordination between LE agencies (p. 61).
Planning	Pre-incident planning should include access to building diagrams where large numbers of people gather (p. 82).

AAR 13: Kalamazoo, Michigan Mobile Active Shooter Incident, February 2016

On February 20, 2016 a mobile active shooter event occurred in Kalamazoo Michigan. At 4:00 p.m. that day, a subject was picked up by an Uber driver to take him to a friend's house. During the drive, the Uber driver began to drive erratically frightening, the rider who eventually

jumped out and called 9-1-1 to report the incident. A short time later, the Uber driver went to pick up another fare. While attempting to find the rider, he fired 15 rounds at a mother and her five children. He struck the mother four times but none of the children were hit. The suspect fled the scene and committed a hit and run with his vehicle. A Kalamazoo City dispatcher began to piece together the different calls and eventually discovered that the suspect in the shooting and the hit and run were one and the same. Ultimately, the dispatcher was able to obtain a photograph of the suspect from the reporting party of the erratic driver call which was then provided to investigators.

After the hit-and-run incident, the suspect drove to his parents' house and switched vehicles. He then proceeded to pick up several other Uber passengers. After dropping off the Uber passengers, the suspect went to a car dealership several hours later and shot and killed a father and son who were looking at new vehicles. The suspect fled in his vehicle. Police responded to the scene and established a perimeter to contain and locate the suspect. A K9 handler attempted to track the suspect, but his dog lost the scent a few minutes into the search. Witnesses confirmed that the suspect had fled in a vehicle and provided police with the vehicle description. Ten minutes later the suspect pulled into a Cracker Barrel restaurant and shot a woman sitting in a vehicle and then shot four passengers in an adjacent vehicle. He then sped away, returned home, and reloaded his handgun. Police determined that they had a mobile active shooter and began a search for the suspect and called in additional resources to investigate each of the scenes. Meanwhile the suspect continued to pick up more Uber passengers. Shortly after midnight, a LE sergeant stopped the suspect vehicle and he was taken into custody without incident. In total the suspect shot eight people, six fatally in three separate incidents in and

around the city of Kalamazoo, Michigan. Six different LE agencies responded to the separate incidents over the 7-hour time period the shootings occurred.

The Police Foundation wrote the AAR for this incident and interviewed officers and deputies from the different agencies involved in the incident. Some of the LE officers interviewed said the search for the suspect "lacked coordination and clear assignments" (Straub, Cowell, Zeunik, & Gorban, 2017, p. 16). The lack of coordination may have been avoided if unified incident command had been established earlier in the incident. Additionally, because this situation involved multiple jurisdictions, there was confusion about who the incident commander was and who officers were supposed to report to upon arrival at the scene (Straub, Cowell, et al., 2017).

Self-deployment problems presented during the event when officers, which included senior LE personnel, self-deployed to sightings of the suspect by the public or reports of gunshots, which turned out to all be false. Also, officers who self-deployed to the Cracker Barrel scene could have caused ingress and egress issues with indiscriminate parking. However, the strong situational leadership of a LE sergeant prevented the blockage from happening. The sergeant realized the potential problem and directed incoming officers to keep access to the parking lot of the restaurant clear of their vehicles (Straub, Cowell, et al., 2017). Communications were also listed as a problem during the event. The communication problems focused on the lack of interoperability and the frustration of responding officers with the lack of dispatch notes about the situation to which were responding (Straub, Cowell, et al., 2017, p. 24 and 25). The lessons learned portions of the report mentioned planning and that "Regional response systems training, exercising and planning should consider the transition from routine crisis events, as well as the capacity to draw on the capabilities of the system to employ untried,

untested, and unprecedented strategies and tactics to resolve the incident and save lives (Straub, Cowell, et al., 2017, p. 36). The thematic issues identified in the AAR include incident command, inappropriate self-deployment, unified command and communications (see Table 12).

TABLE 12. Problems Identified During Kalamazoo Incident

Problem Identified in AAR	Description
Incident Command	Some confusion existed regarding who the incident commander was and who officers were to report to (p. 20).
Inappropriate Self-deployment	Officers, including senior personnel, self- deployed to reported sightings of the suspect (p. 20).
Unified Command	Clear direction and assignments may have been made if unified command had been established earlier (p . 17).
Communications	There was a lack of interoperability and frustration of responding officers with the lack of dispatch notes about the situation they were responding to (pp. 24 anf 25).

AAR 14: Orlando Pulse Nightclub Active Shooter/Terrorist Attack, June 2016

Prior to the Las Vegas shooting in 2017, the Orlando Pulse Nightclub attack was the deadliest active shooter incident in U.S. history (Miller, 2017). At the time, it was the deadliest terrorist attack since the attacks on September 11, 2001. On June 12, 2016, at about 2:00 a.m., a gunman entered the Pulse Nightclub in Orlando Florida and began shooting patrons and staff. While the attack began as an active shooter incident, it transitioned into a hostage situation. During the incident, 49 were killed and 53 were wounded by the suspect. An Orlando Police Department (OPD) detective who was working overtime at the nightclub engaged the shooter and called for assistance. Within minutes, members of the OPD SWAT team initiated a response and entered the bar to intervene. Eventually all of the injured were evacuated to safety, the suspect was killed, and the hostages were rescued. Several issues occurred during this incident involving incident command, unified command with fire, and inappropriate self-deployment.

Issues concerning incident command centered around the first hour of the event. Even though the SWAT commander was leading the response inside the Pulse Nightclub, no one assumed incident command outside the club to coordinate the overall response. Self-deployment became problematic when the initial number of officers on scene grew and "negatively affected an already chaotic situation" (Straub, Cambria, et al., 2017, p. 47). One noted issue was the self-deployment led to officers unintentionally pointing guns at other officers and the need to have so many heavily armed officers in unnecessary positions when they could have been used elsewhere (Straub, Cambria, et al., 2017). Self-deployment also depleted resources so severely, at one point in the crisis no one was available to respond to other calls for police service or any possible secondary or tertiary attacks had they occurred (Straub, Cambria, et al., 2017).

Quickly establishing unified command proved difficult due to the complexity of the incident and the multi-agency response. The response of multiple agencies and the lack of quickly establishing unified command was uncoordinated and confusing. (Straub, Cambria, et al., 2017). While LE unified command was established within the first hour, unified command with the Orlando Fire Department and EMS took several hours. The Orlando Fire Chief was not notified of the incident in a timely manner and OFD established a command post separate from the OPD unified command center. The failure to notify the Orlando Fire Chief made the lack of coordination between police, fire and EMS worse (Straub, Cambria, et al., 2017).

The main communications issue during the Pulse Nightclub attack centered on the unwillingness of some agencies to patch their radio frequency with those used by the Orlando Police Department. An additional concern was the lack of a common radio channel during the explosive breach meant to assist the OPD SWAT team in rescuing hostages. The lack of a

common radio channel led to uninvolved LE personnel being unaware of the explosive breach (Straub, Cambria, et al., 2017, p. 64).

One interesting finding in the Orlando AAR is a statement made by an OPD lieutenant. Specifically, the OPD lieutenant said Orlando PD never trained for an incident of the size and magnitude of the Pulse Nightclub attack, and during the initial response, checklists were "out the window" (Straub, Cambria, et al., 2017, p. 67). This comment ties directly with literature in Chapter 2 in which Renaud stated "checklists and forms are not helpful in the first, crucial response timeframe" (Renaud, 2012, p. 12). The thematic issues identified in the AAR include incident command, inappropriate self-deployment, indiscriminate parking, unified command with and without fire/EMS, and communications (see Table 13).

TABLE 13. Problems Identified During Orlando Incident

Problems Identified in AAR	Description
Incident Command	During the first hour, no one assumed command outside the club (Pulse Nightclub) to manage the overall operation (p. 47).
Inappropriate Self-deployment	As the number of officers on scene grew, self-deployment negatively impacted an already chaotic situation (p. 50).
Unified Command	As the incident became more complex, the multi-agency response was at times uncoordinated and confused, demonstrating the importance of multi-agency cooperation systems and the need to quickly establish unified command (p. 47).
Unified Command with Fire/EMS	Orlando Fire and EMS were not included in Unified Command (p. 59).
Communications	Some agencies were not willing to patch their radio frequency with those used by OPD. There was also no common radio channel during the explosive breach meant to assist the OPD SWAT team in rescuing hostages. The lack of a common radio frequency led to uninvolved law enforcement personnel being unaware of the explosive breach (p. 64).

AAR 15: Fort Lauderdale-Hollywood Airport Active Shooter, January 2017

On January 6, 2017, a male suspect killed five people and wounded six others with a firearm in the Fort Lauderdale-Hollywood International Airport (FLL). Ninety minutes after the initial shooting, reports of additional active shooters in other areas of the airport caused panic and led to a chaotic self-evacuation of persons throughout the airport (Broward County Aviation Department [BCAD], 2017). The ensuing response had several issues which were documented in an AAR by BCAD utilizing the U.S. Department of Homeland Security's Homeland Security Exercise and Evaluation Program (HSEEP). HSEEP utilizes a framework of specific action items adopted from the National Preparedness Goal.

The gunman arrived at FLL at 12:15 p.m. via a Delta flight and retrieved his bag from a carousel in Terminal 2. He then walked into the men's restroom in Terminal 2, exited several minutes later and began firing in the baggage claim area. The suspect was taken under fire by a Broward Sheriff's Office (BSO) Deputy and subsequently surrendered and was arrested. While the volume of radio communications during the initial shooting was manageable, problems later surfaced when 90 minutes later, additional shots fired calls were broadcasted. The additional shots fired calls caused an enormous amount of radio traffic from additional LE officers responding to the additional shots fired calls. In turn the additional radio traffic caused the radio system to become saturated. The radio issues also slowed down the ability of first responders and command elements to communicate. Communication issues also surfaced when up to 2600 LE officers from the region responded to the scene. These self-deploying officers were not sent to an identified staging area and slowed the response of not only LE officers, but employees who had needed to get to their workplace to support response operations (BCAD, 2017). Not establishing a staging area for these resources added to command and control problems. Also, a

major issue was that LE vehicles were parked and left running causing congestion. This problem was made worse when the vehicles ran out of fuel and had to be refueled, causing even more congestion (BCAD, 2017).

Similar to other large-scale incidents, no one interviewed for the AAR, including personnel inside the BSO Incident Command Post (ICP) knew who the Incident Commander was in turn causing communication problems, a lack of situational awareness and management of response resources (BCAD, 2017). Although not occurring during the initial response phase, there were coordination issues between the BSO ICP and BCAD Emergency Operations Center (EOC) because the use of ICS was not evident. Additionally, Unified Command was never established which in turn caused confusion about who was in charge and also led to problems with developing a common operational picture. The absence of a common operational picture led to a lack of information about what resources were needed and conflicting mission development (BCAD, 2017). Additionally, there were three incident command posts (ICPs) established including one by BSO, fire, and the FBI. The multiple command posts caused a lack of communication and "hindered response coordination" (BCAD, 2017, p. 12).

The complete lack of contingency plans for airport evacuation and sheltering in place was listed as an opportunity for improvement in the report. Additional suggestions for improved planning to improve command and control capabilities included revising the Airport Emergency Plan (AEP) so that it includes procedures to support command and control during active shooter events, mass care and evacuation of the airport. The report also suggested using the Threat and Hazard Identification and Risk Assessment (THIRA) to inform development of procedures for specific threat and hazard procedures. The thematic issues identified in the AAR include

incident command, inappropriate self-deployment, indiscriminate parking, unified command with and without fire/EMS, communications and planning (see Table 14).

TABLE 14. Problems Identified During Fort Lauderdale Incident

Problem Identified in AAR	Description
Incident Command	No one knew who the Incident Commander was in turn causing communication problems, a lack of situational awareness and management of response resources (p. 12).
Inappropriate Self-deployment	Up to 2600 self-deployed LE officers hindered the response and hindered airport employees (p. 12).
Indiscriminate Parking	Law enforcement cars were parked on the roadway and left running which caused congestion. Those cars also ran out of fuel and the refueling caused more congestion (p. 22).
Unified Command	Unified command was never established causing confusion about who was in charge (p. IV and p. 25).
Unified Command with Fire/EMS	Incident management between LE operations and mass care operations were not coordinated sufficiently (p. 29).
Communications	Communications and instructions to responding LE resources during the second event were inadequate (p. 12).
Planning	Contingency plans for evacuation and sheltering were lacking (p. IV).

Meta-Analysis

AARs from the 15 analyzed incidents clearly reveal seven primary issues affecting the initial LE response phase. As shown in Table 15, the seven primary response problems are ICS issues, lack of planning, improper parking and inappropriate self-deployment, unified command problems not involving fire or EMS, unified command with fire / EMS issues, communication problems and planning issues. These issues represent a challenge for the LE response system and an opportunity for improvement.

TABLE 15. Primary Problems in Analyzed Incidents

Issues Incidents	Incident Command	Inappropriate Self-deployment	Indiscrimi-nate Parking	Unified Command	Unified Command w/fire	Communi-cations	Lack of Planning
Virginia Tech - 2007	X			X	X	X	X
Oakland, CA - 2009	X	X		X			
Tampa Bay FL. - 2010							
Aurora, CO - 2012	X	X	X		X	X	X
Sandy Hook - 2012	X	X	X	X		X	X
Watertown, MA - 2013	X	X	X			X	
Dorner - 2013	X	X	X	X		X	X
Washington Shipyard - 2013	X	X	X	X		X	
LAX -2013	X	X	X	X	X	X	X
Las Vegas, NV - 2014	X	X			X	X	
Stockton, CA - 2014	X	X	X				X
San Bernardino, CA - 2015	X	X	X	X		X	X
Kalamazoo, MI - 2016	X	X		X		X	
Orlando, FL - 2016	X	X		X	X	X	
Ft. Lauderdale, FL – 2017	X	X	X	X	X	X	X

The analysis of the 15 AARs showed incident command issues in 14 of the 15 incidents or 93%. Table 16 shows ICS issues are primarily focused on the lack of a clearly identified incident commander and a failure to establish command and control. The lack of a clearly identified incident commander leads to the inevitable question of "Who's in charge?" as resources arrive at large-scale events. The lack of a clearly identified IC not only slows down the ability to coordinate the response but leads to other problems including communication, inappropriate self-deployment, and resource management problems. The need for a clearly

designated incident commander is a safety issue not only for officers, but for the citizens they protect.

TABLE 16. Incident Command Difficulties

Incident	Incident Command Issues
Virginia Tech - 2007	A formal incident commander and EOC was not set up until after the shooting was over because "events unfolded very rapidly" (p. 95).
Oakland, CA - 2009	Issues related to implementing ICS and filling critical positions led to a fundamental lack of planning (p. 15).
Tampa Bay FL - 2010	No ICS issues listed
Aurora, CO - 2012	Better use of ICS would have led to better incident management (p. 110).
Sandy Hook - 2012	It took time to determine which agency was going to assume overall command and control of the incident (pp. 18 and 19).
Watertown, MA - 2013	There was no command structure to manage incoming personnel. Caused command & control issues (p. 10). Lack of clearly identified field-command in Watertown (p. 113).
Dorner - 2013	Command & control issues led to hundreds of officers converging on the scene of an active shooting (p. 11).
Washington Shipyard - 2013	During the initial response, incident command was not clearly established (p. 38).
LAX - 2013	The inability to identify the IC caused difficulty when integrating Unified Command w/fire (p. 20-21).
Las Vegas, NV - 2014	Incident Command was not properly established (p. 20).
Stockton, CA - 2014	Leadership during the pursuit, specifically direction from supervisors early in the pursuit, was lacking. One explanation given was that supervisors believed it was more important to let officers directly involved in the pursuit to have "exclusive access" to the radio. Other officers however were frustrated with "no one taking charge of the pursuit" (p. 26).
San Bernardino, CA - 2015	At the IRC, initial Incident Command unintentionally became decentralized when law enforcement officers attempted to locate the suspects and was not formalized until experienced leaders arrived (p. 60).
Kalamazoo, MI - 2016	Some confusion existed regarding who the incident commander was and who officers were to report to (p. 20).
Orlando, FL - 2016	During the first hour, no one assumed command outside the club (Pulse Nightclub) to manage the overall operation (p. 47).
Ft. Lauderdale, FL. - 2017	No one knew who the Incident Commander was in turn causing communication problems, a lack of situational awareness and management of response resources (p. 12).

As previously stated, self-deployment is the independent action of an individual or individuals to an incident without the ability to immediately intervene in an ongoing situation or without a request form the jurisdiction in command. As indicated in Table 17, officers inappropriately self-deployed in 13 out of the 15 analyzed incidents or 87%. Officers who inappropriately self-deployed led to critical problems including putting LE officers at risk and making one scene more chaotic.

Officer parking indiscriminately was an issue in 10 out of the 15 analyzed incidents as displayed in Table 18. The issues caused by indiscriminate parking centered around the inability or difficulty of life saving resources, including ambulances and armored rescue vehicles, to access the crisis sites. The difficulties surrounding indiscriminate parking reveal a serious issue that could ultimately cost a life.

Command relationships, which are "any formal association between two or more people that establishes a connection through which command is exercised" (Heal, 2012, p. 109) are extremely important during large-scale critical incidents. Unified command is a type of command relationship and a frequent friction point during a crisis due to the tensions and emotions inherent in these situations (Heal, 2012). Table 19 shows 10 out of 15 incidents, or 67%, exhibited unified command issues not involving fire or EMS.

The incidents analyzed in this research thesis involved an adversary who was attempting to kill, or had killed, citizens and LE officers. Inevitably, these incidents morphed into a situation where LE and fire and/or EMS need to establish a unified command to stop the dying. Establishing a unified command is important during these incidents to coordinate communications and life-saving tasks which include transportation of injured persons. Table 20 shows 6 out of 15 incidents indicated unified command problems with fire/EMS or 40%.

TABLE 17. Inappropriate Self-Deployment

Incident	Inappropriate Self-Deployment
Virginia Tech - 2007	No inappropriate self-deployment issues listed.
Oakland, CA - 2009	No command post was established & the response overwhelmed on-scene commanders with many responders self-assigning their own activities (p. 2).
Tampa Bay FL - 2010	No inappropriate self-deployment issues listed.
Aurora, CO - 2012	Some mutual aid officers self-assigned to jobs inconsistent with overall needs (p. 25).
Sandy Hook - 2012	Self-deployment of personnel presented a significant challenge (p. 26).
Watertown, MA - 2013	A significant portion of officers that arrived in Watertown self-deployed- (p. 10).
Dorner - 2013	Self-deployment put officers and deputies at risk (p. 56).
Washington Shipyard - 2013	Officers who self-dispatched to the scene may have caused congestion in and around the scene (p. 42).
LAX -2013	Some resources had self-deployed which made accountability during the initial response difficult (p. 49).
Las Vegas, NV - 2014	Quicker MACTAC activation might have prevented some of the over convergence of officers who self-reported to the incident (p. 19).
Stockton, CA - 2014	Stockton officers self-deployed to the pursuit (p. 31).
San Bernardino, CA. - 2015	The urgency to capture the suspects and the resulting shootout contributed to more individuals self-deploying (p. 61).
Kalamazoo, Mich. - 2016	Officers, including senior personnel, self- deployed to reported sightings of the suspect (p. 20).
Orlando, FL - 2016	As the number of officers on scene grew, self-deployment negatively impacted an already chaotic situation (p. 50).
Ft. Lauderdale, FL - 2017	Up to 2600 self-deployed LE officers hindered the response and hindered airport employees (p. 12).

TABLE 18. Indiscriminate Parking

Incident	Indiscriminate Parking
Virginia Tech - 2007	No indiscriminate parking issues listed.
Oakland, CA - 2009	No indiscriminate parking issues listed. However, further investigation into slow ambulance response was suggested. Specifically, the report suggested investigating whether or not indiscriminate parking caused the ambulance delay (p. 14).
Tampa Bay FL - 2010	No indiscriminate parking issues listed.
Aurora CO - 2012	Parked police vehicles blocking roads made it hard for ambulances to access the crisis site (p. 18).
Sandy Hook - 2012	Parked police vehicles made ingress/egress for later responding personnel difficult or impossible (p. 14).
Watertown, MA - 2013	Police vehicles hindered access to and egress from the area in Watertown. This was an issue for an ambulance transporting a critically wounded officer (p. 115).
Dorner - 2013	Roads were so congested with police vehicles SBCSD SWAT equipment was delayed in reaching the scene (pp. 56-57).
Washington Shipyard - 2013	While the sheer number of responding vehicles initially caused congestion, officers were able to establish order & ensure emergency vehicles had access to the scene (p. 46).
LAX - 2013	A challenge for unified command was the large number of vehicles. Ultimately some responder's vehicles had to be towed (p. 49).
Las Vegas, NV - 2014	No indiscriminate parking issues listed.
Stockton, CA - 2014	During the stop of the suspect vehicle, SPD vehicles fanned out across all three lanes of traffic and onto the dirt shoulders. This was partially created by the large number of responding officers, many of whom felt the need to be as far up front as possible. This contributed to sympathetic gunfire (pp. 33 and 34).
San Bernardino, CA - 2015	There was limited appreciation of the consequences of unattended police vehicles blocking access routes to critical responding units such as tactical units, fire and EMS (p. 61).
Kalamazoo, MI - 2016	No indiscriminate parking issues listed.
Orlando, FL - 2016	No indiscriminate parking issues listed.
Ft. Lauderdale, FL - 2017	Law enforcement cars were parked on the roadway and left running which caused congestion. Those cars also ran out of fuel and the refueling caused more congestion (p. 22).

TABLE 19. Unified Command Problems

Incident	Unified Command Problems
Virginia Tech - 2007	There is little evidence that a unified command structure existed at the Virginia Tech incident (p. 119-120).
Oakland, CA - 2009	While no unified command issues are addressed in the AAR, there was a failure to implement the "most fundamental elements of the Incident Command System." (p. 6. 115) officers, many from other agencies, responded to this incident (p. 2). Unified command is an essential feature of ICS and there was a failure to implement it in this situation.
Tampa Bay FL - 2010	No unified command issues listed.
Aurora, CO -2012	No unified command issues listed.
Sandy Hook - 2012	Multiple CPs and EOCs were activated leading to confusion as to responsibilities for different tasks and duplication of efforts in regard to some outside requests. The report recommended additional training in "unified command post strategies" (p. 43).
Watertown, MA - 2013	No unified command issues listed.
Dorner - 2013	The use of unified command and control became less coordinated as events expanded to involve more agencies (p. 47).
Washington Shipyard - 2013	Not all critical agencies and critical functions had representation in unified command (pp. 38 and 40).
LAX - 2013	The establishment of unified command and the incident command post was delayed (p. 14).
Las Vegas, NV - 2014	No unified command issues listed.
Stockton, CA - 2014	No unified command issues listed.
San Bernardino, CA - 2015	Not until the arrival of other public safety leaders with "enhanced experience" in incident command did the formalized unified incident command leadership begin to emerge. As the incident continued to evolve, unified command became more evident (p. 60).
Kalamazoo, MI - 2016	Clear direction and assignments may have been made if unified command had been established earlier (p. 17).
Orlando, FL - 2016	As the incident became more complex, the multi-agency response was at times uncoordinated and confused, demonstrating the importance of multi-agency cooperation systems and the need to quickly establish unified command (p. 7).
Ft. Lauderdale, FL - 2017	Unified command was never established causing confusion about who was in charge (pp. IV and 25).

Proper communications during critical incidents have avoided many calamities As shown in Table 21, 12 out of 15 incidents (80%) cited communications as a problem. Problems were primarily focused on interoperability and superfluous radio traffic by LE officers.

Planning prior to a crisis is an important step to effectively respond to a large-scale incident. Planning difficulty was cited in 9 of the 15 analyzed incidents (53%). The planning problems varied from a lack of pre-plans for high profile locations, decision-making authority and mutual aid coordination (see Table 22).

Summary

The analysis results of the AAR from 15 large-scale critical incident reveal seven primary themes. A qualitative analysis was used to extract the themes from the reports after which two tables were created to provide a visual representation of the primary themes and further elucidate the issues occurring during this phase. The seven issues include incident command problems, indiscriminate parking, inappropriate self-deployment, unified command and unified command with fire issues, planning problems, and communication problems.

The analysis provided seven issues to answer the research question of what are the recognizable factors and influences along the timeline of the initial response to a large-scale critical incident? The data revealed seven primary errors occurring during the initial response phase. These seven issues help elucidate the timeline of the initial response phase as well by identifying common themes in the analyzed events. A visual representation of the analysis results was provided in two tables to provide further clarity. The following chapter discusses the results in more detail, explains the importance of the findings and outlines the basic timeline of the initial response phase.

TABLE 20. Unified Command With Fire/EMS Problems

Incident	Unified Command with Fire/EMS Problems
Virginia Tech - 2007	There is little evidence that a unified command structure existed at the Virginia Tech incident. CP's for EMS and LE were at different locations. (p. 119-120).
Oakland, CA - 2009	No unified command with fire/EMS issues listed.
Tampa Bay FL - 2010	No unified command issues with fire/EMS listed.
Aurora, CO - 2012	There was no unified command between fire and police in this incident (p. 24).
Sandy Hook - 2012	No unified command issues with fire/EMS listed.
Watertown, MA - 2013	No unified command issues with fire/EMS listed.
Dorner - 2013	No unified command issues with fire/EMS listed.
Washington Shipyard - 2013	No unified command issues with fire/EMS listed.
LAX -2013	LAFD did not initially integrate into unified command because of security concerns over the location of the command post pp. (19 and 20).
Las Vegas, NV - 2014	The inability to identify the IC caused difficulty when integrating Unified command w/fire (p. 20-21).
Stockton, CA - 2014	No unified command issues with fire/EMS listed.
San Bernardino, CA - 2015	No unified command issues with fire/EMS listed.
Kalamazoo, MI - 2016	No unified command issues with fire/EMS listed.
Orlando, FL - 2016	Orlando Fire and EMS were not included in Unified command (p. 59).
Ft. Lauderdale, FL - 2017	Incident management between LE operations and mass care operations were not coordinated sufficiently (p. 29).

TABLE 21. Communication Difficulties

Incident	Communication Difficulties
Virginia Tech - 2007	Lack of a common communications system between on-scene agencies created confusion and could have caused major safety issues for responders (p. 119).
Oakland, CA. - 2009	No communications issues listed.
Tampa Bay FL - 2010	No communication issues listed.
Aurora, CO - 2012	LE was unable or did not know how to communicate with fire despite interoperability (p. 23).
Sandy Hook - 2012	Early in the incident, there was insufficient communication between personnel at the scene and CP personnel about resource needs (p. 41).
Watertown, MA - 2013	Several agencies reported superfluous radio traffic and "unnecessary chatter" during the beginning of the incident in Watertown Mass (p. 119).
Dorner - 2013	The largest and most extensive lack of radio interoperability happened in Big Bear when Dorner was finally cornered and stopped (p. 60).
Washington Shipyard - 2013	Some officers could not access the main channel for tactical response and substantial amount of radio traffic interfered with other officer's ability to communicate vital information (p. 52).
LAX -2013	The lack of interoperable radio communication made it difficult for the command post to track resources (p. 30).
Las Vegas, NV - 2014	Radio communication on the same frequency led to excessive radio traffic and confusion (p. 22). Communications center was burdened with repeated requests from LVMPD personnel (p. 20).
Stockton, CA - 2014	No communication issues listed.
San Bernardino, CA - 2015	The lack of interagency radio communication led to a lack of coordination between law enforcement agencies (p. 61).
Kalamazoo, MI – 2016	There was a lack of interoperability and frustration of responding officers with the lack of dispatch notes about the situation they were responding to (pp. 24 and 25).
Orlando, FL - 2016	Some agencies were not willing to patch their radio frequency with those used by OPD. There was also no common radio channel during the explosive breach meant to assist the OPD SWAT team in rescuing hostages. The lack of a common radio frequency led to uninvolved law enforcement personnel being unaware of the explosive breach (p. 64).
Ft. Lauderdale, FL - 2017	Communications and instructions to responding law enforcement resources during the second event were inadequate (p. 12).

TABLE 22. Planning Problems

Incident	Planning Problems
Virginia Tech - 2007	The Emergency Response Plan for Virginia Tech was lacking and did not include plans for a shooting situation and did not place the proper emphasis on the chain of command's decision-making authority (p. 17).
Oakland, CA - 2009	No planning issues listed.
Tampa Bay FL - 2010	No planning issues listed.
Aurora, CO -2012	Revise pre-incident planning for an actives shooter and bomber. This includes pre-planned mutual aid (p. 28).
Sandy Hook - 2012	Pre-planning should be completed for high-profile locations (pp. 16 and 17).
Watertown, MA - 2013	No planning problems listed.
Dorner - 2013	Most of the problems and their solutions involve advance planning and coordination among LE leaders (p. 95).
Washington Shipyard - 2013	No planning problems listed.
LAX -2013	Development of a complex communication plan annex for LAX Emergency Plan (p. 32).
Las Vegas, NV - 2014	No planning problems listed.
Stockton, CA - 2014	Agencies should develop plans for heavily armed mobile hostage situations (p. 25).
San Bernardino, CA - 2015	Pre-incident planning should include access to building diagrams where large numbers of people gather (p. 82).
Kalamazoo, MI - 2016	No planning problems listed.
Orlando, FL – 2016	No planning issues listed.
Ft. Lauderdale, FL – 2017	Contingency plans for evacuation and sheltering were lacking (p. IV).

CHAPTER 5

CONCLUSION

Large-scale critical incidents involving an adversary are challenging LE's response system during these conflicts. Research from this thesis reveals response system issues that provide an opportunity for learning and improvement in future incidents. The purpose of this research thesis was to identify the factors and dynamics at play on the timeline of the initial response phase by examining available AARs of large-scale incidents involving an adversary. The subsequent analysis not only identified opportunities to improve but also informs a basic timeline framework of the initial critical incident period.

Key Findings and Implications

Seven themes were identified in the analysis of the 15 AARs identified. The AAR themes for improvement included (a) ICS functionality, (b) indiscriminate parking, (c) inappropriate self-deployment, (d) poor unified command integration with fire/EMS, (e) unified command issues, (f) communications, and (g) lack of planning. The commonly repeated errors across incidents present an opportunity for learning and improvement.

Incident Command System

Some type of incident command problem was identified in 14 out of 15 incidents, or 93% (see Table 16 for specifics). With 93% of critical adversarial incidents revealing problems with the ICS, LE is clearly having difficulties either implementing or using ICS during these events. Several possible explanations exist for this problem. Incident command system was created for firefighters who are battling fire, which is a known hazard they have been dealing with for years. Comparatively, LE deals with an unknown hazard when encountering an adversary who is

attempting to thwart the will of the incident commander. When LE attempts to apply ICS to these events for which ICS was not built for, problems can arise.

The applicability of ICS for critical adversarial incidents was questioned in several of the AARs analyzed. In the Washington Navy Shipyard AAR, the authors stated

> a large scale response during an on-going and rapidly-evolving incident will often result in some confusion during the initial establishment of Incident Command. For instance, officials who responded to the recent shootings in Newtown and Aurora, all stated that establishing a clear and strong Incident Command was a significant challenge in the early stage of the response. (Washington DC Metropolitan Police Department, 2014, p. 37)

Additional comments made by first responders from Orlando Police Department and the Orange County Sheriff's Office also questioned the usefulness of ICS in these incidents. Officials from those agencies stated in the Orlando Pulse Nightclub AAR that "paying attention during ICS training is difficult as it does not connect the structure to "real" incidents (Straub, Cowell, et al., 2017, p. 59).

Law enforcement leaders and researchers should endeavor to re-examine ICS and create a model that will be acceptable and implementable in response to critical adversarial incidents (Straub, Cambria et al., 2017). Whether or not the issue is with the ICS system itself, a training/leadership weakness or a combination of both problems is unclear. Another challenge with ICS is revealed by Renaud (2012) who indicates ICS is not altogether useful during the initial chaos of an event. To be useful, an incident commander has to complete a situational assessment prior to applying the structure of ICS.

Unprepared command level officers could be one explanation for the ICS implementation challenges. Mid-level management leaders are tasked with leading these incidents (Boin & Renaud, 2013) and these command level officers who are promoted under "steady state" conditions may not be prepared to lead during a crisis (Stern, 2013). Another explanation could

be tied to a lack of training. Jensen and Waugh's (2014) literature suggested those involved in the response must have significant training in the ICS system, including training exercises and they must have technical expertise related to the type of hazard event to which they are responding and what type of resources will be needed for the event. One other possible explanation is that ICS may not be entirely useful during the initial chaos of a large-scale incident because potential incident commanders do not understand the problem they are faced with (Renaud, 2012). Based on the analysis it is clear that the cause of the ICS issues at these events is elusive and no clear answer or solution has been found yet.

Inappropriate Self-Deployment

Another common thematic error featured in the analysis was inappropriate self-deployment. Of the 15 incidents reviewed, 87% mentioned this problem. Self-deployment is the "independent action of an individual or individuals without the ability to immediately intervene in an ongoing situation or without a request from the jurisdiction in command" (Braziel et al., 2016, p. 60). Inappropriate self-deployment has historically been a problem and a lesson learned during large-scale incidents. Officers feel the need to respond directly to the scene to assist but they must resist this urge (Molino, 2006). During the initial response phase of a large-scale incident, self-deployment could be appropriate. For example, during the Aurora active shooter incident, the officers trained in active shooter response, knew the strategy and tactics needed and self-deployed appropriately (Tri-Data Division, 2014, p. 27). However, the self-deployment became inappropriate when officers from other agencies arrived and began self-assigning to jobs that were a "inconsistent with overall needs" (Tri-Data Division, 2014, p. 25). The example clearly shows the difference between appropriate and inappropriate self-deployment during these events.

An overconvergence of resources and duplication of effort places LE officers at risk of injury and consequences of inappropriate self-deployment. The analysis of the after-action report in the Dorner incident revealed a finding that solved inappropriate self-deployment. Specifically, the counter measure was strong leadership by command staff at the Corona Police Department, Irvine Police Department, and California Highway Patrol (CHP). Command staff from these departments told their officers they were prohibited from self-deploying to the area where Dorner was located. Other departments, however, had officers, and even command staff, inappropriately self-deploy which caused serious issues. Connecting this finding to past research, the training, experience, emotions, and personalities of those involved in these events, including LE leaders, play a significant role in their outcome. Law enforcement leaders who provide good leadership help crises response proceed in a positive direction. In this case, strong leadership stopped inappropriate self-deployment by the aforementioned LE agencies. As stated in the Dorner AAR, "the primary responsibility to control unnecessary self-deployment rests with first line supervisors. Law enforcement supervisor and management training must include controlling self-deployment" (Police Foundation, 2015, p. 58). Also noted in the same AAR was an important statement that stated, "Unnecessary self-deployment has resulted in significant problems across the country, including accidental deaths, injuries, lost evidence and failed prosecutions" (Police Foundation, 2015, p. 58).

Indiscriminate Parking

The number of police vehicles responding to large-scale critical incidents reviewed caused indiscriminate parking complications in 67% of the 15 incidents. Indiscriminate parking is a serious issue at these incidents because police vehicles parked haphazardly near the crisis site caused congestion issues that interfered with the ability of ambulances and armored rescue

vehicles, such as a Bearcat, to access the crisis site. The problem of indiscriminate parking has the potential to jeopardize lives if these life-saving assets cannot access victims or contain the threat. For example, during the IRC terrorist attack in San Bernardino, the careless parking of police vehicles caused a "delay of critical tactical assets during the officer involved shooting" (Braziel et al., 2016, p. 61). In another equally serious incident listed in the review of the Watertown shooting, ambulances had difficulty transporting an injured officer who had been shot due to the poor parking of police vehicles (Project Management Team, 2014). Based on the two examples, indiscriminate parking by LE officers at critical incidents has the potential to cost lives and put officers in danger.

Solutions to the problem of indiscriminate parking rely on leadership. In the instance of the Boston Bombing, an officer broadcasted reminders to responding officers not to park without care. In another example in Kalamazoo, Michigan during their mobile active shooter event, a sergeant was able to stop officers from parking and obstructing responding ambulances. The sergeant's leadership most likely solved this issue in this incident (Straub, Cowell et al., 2017). In the Oakland officer involved shootings, parking was not listed as an issue however the Board of Inquiry who drafted the AAR stated that ambulances were delayed in reaching injured officers. They recommended investigating whether or not police vehicles caused the traffic congestion. They also suggested training officers in "tactical parking" during their roll call (Stewart, 2009, p. 14).

Much the same as the self-deployment issue, strong leadership during these events is the pivot point. Leadership is clearly a counter measure to the issue of parking during these situations. This discovery correlates with the literature review's finding where strong leadership is the pivot point during these types of events.

Poor UC Integration With and Without Fire/EMS

When tactical operations require assistance from other agencies and disciplines, command relationships become important. In most situations the supporting agency or unit reports to the incident commander and is attached to the tactical organization as a separate component (Heal, 2012). The command relationship is referred to as joint command and is the "default mode" for fast incorporation of mutual aid. This command relationship works in most circumstances but fails when the supporting unit is larger than the one they are supporting (Heal, 2012). In this case, a unified command structure works best. As previously stated, unified command is a "team effort process, allowing all agencies with responsibility for an incident, either geographic or functional, to establish a common set of incident objectives and strategies that all can subscribe to" (California Emergency Management Agency, 2010, p. 15). Unified command allows for collaboration where agencies can work together without affecting the authority, accountability or responsibilities of individual agencies (Heal, 2012, p. 112).

The analysis reveals a common thematic error around unified command, present in 10 out of the 15 incidents analyzed or 66% of the events. The analysis also reveals unified command issues with fire and EMS in six of the 15 incidents or 40%. In the AAR on the San Bernardino terrorist attack, prior regional training in unified command and "established relationships" helped the effectiveness of unified command during the incident at the IRC (Braziel et al., 2016, p. 63). The report also suggested establishing unified command "as soon as possible and feasible" which runs somewhat counter to the information from the literature review from C3 Pathways. Participants discovered during 10 functional exercises that going to unified command structure too quick slowed down decision-making (C3 Pathways, 2014). They believe a bottom-up approach to building the response organization works better in these circumstances.

Communication

Communication is vital to the success of tactical operations and the U.S. military considers command, control, and communications indivisible. Corrective action relayed through communications has averted disasters during rapidly changing events (Heal, 2012). Large-scale critical incidents are no different and the communications theme was a common error across 12 of the 15 incidents (80%). Communication barriers were documented around interoperability issues, confusion about which radio channel to use or superfluous radio traffic by responding LE officers. The Dorner AAR stated, "breakdowns of communication are nearly always listed in the 'after-action reports' of major multiagency events indicating communication is an ongoing problem" (Police Foundation, 2015, p. 58).

Fixing the various communication problems, or at least reducing them, is a colossal challenge. The challenge centers primarily around the money needed to purchase interoperable radio systems for LE agencies. Suggestions for improving communications varied throughout the analyzed reports and included agencies reinforcing radio discipline and training officers to stop needless radio traffic (Braziel et al., 2016, p. 81), encouraging the purchase of interoperable radio systems and "ad hoc" interoperability (Police Foundation, 2015). Reinforcing radio discipline can be solved with a combination of strong leadership, training and making the protocol part of LE culture.

Lack of Planning

The absence of pre-response planning reduced effective incident management and was evidenced in 53% of the 15 incidents reviewed. Field Marshal Helmuth Von Moltke once stated "planning is everything--plans are nothing" meaning it is more about the planning process then the product produced. Planning is the "art and science of envisioning a desired future and laying

out effective ways of bringing it about" (Heal, 2012, p. 179). While pre-plans lack the situational awareness for implementation they are of great value in identifying resources, developing contingency plans, identifying assets and organizing thoughts. The planning insufficiencies varied from a lack of response plans to developing response plans for novel events such as the mobile active shooter/hostage situation in Stockton, California to improving standing plans such as in the LAX incident.

Timeline of the Initial Response Phase

To further clarify the initial response phase of large-scale critical incidents involving an adversary, the foundation for the timeline of these events is important. A timeline of the initial response phase of a large-scale critical incident will provide potential incident commanders with a visual representation of this time period to help them identify when mistakes are occurring. Research clearly shows LE is making these mistakes time and time again and countermeasures to these problems need to be developed. The timeline is one such countermeasure that an incident commander can use to study these events and educate themselves to help their success.

To formulate the timeline, a logical progression of the events was generated. This is based on every incident having a starting point with what is called inception. Inception is defined as the establishment or starting point of an institution or activity (Oxford Dictionary, n.d.). In this case, the origination of an impending calamity. For example, the inception point for a large-scale critical incident could be a suspect accessing the crisis site to begin shooting victims. The next point on the timeline is discovery. Discovery is the point at which the first persons become aware of what is happening and are under attack by the suspect or suspects. The discovery is followed by the notification, which is the point in the crisis where the police are notified that an attack is underway. The notification to LE normally occurs when someone calls

9-1-1. Often the information given to the authorities during notification is incomplete, confused or inaccurate. The incomplete, confused or inaccurate information is due to the principle of uncertainty which is one of the five characteristics of a crisis (Heal, 2012). The timeline continues with the response of LE. The response involves the intervention with LE's personnel and resources. While the sequence of some events on the timeline are linear, LE errors occur in a feedback loop rather than linear. The LE response issues identified in the analysis of AARs begin during this phase. The primary mistakes identified during the analysis were parking, self-deployment, unified command, incident command, and communications. To formulate this part of the timeline requires a logical progression of how the event would unfold. Since LE is normally arriving to the crisis site in patrol vehicles, indiscriminate parking is possibly one of the first issues that happens as officers begin to converge on the crisis site, some at the same time. The arrival is followed by first arriving supervisors who should be establishing incident command. Without proper incident command and leadership, as resources continue to arrive, self-deployment could quickly become an issue due to a lack of incident command and leadership. As other jurisdictions arrive, unified command should be established. As efforts are made to gain control of the crisis, containment of the problem will begin to occur. A field command post will have been established and reinforcements will have arrived. Finally, resolution occurs when a satisfactory end state is achieved (see Figure 2 and Appendix C).

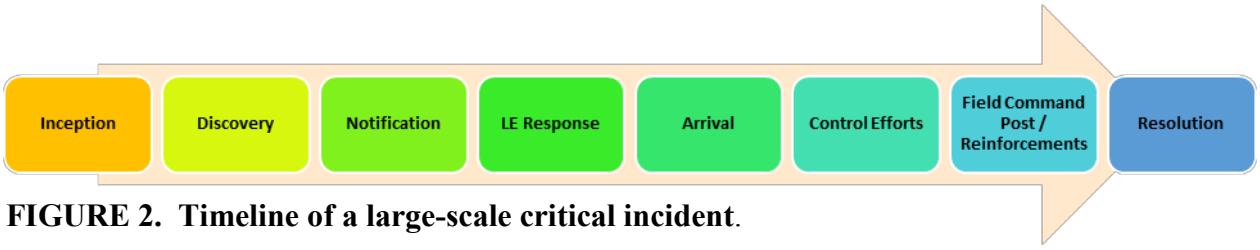


FIGURE 2. Timeline of a large-scale critical incident.

Recommendations

The recommendations outlined in current research represent opportunities for LE to improve their response system. Implementing these recommendations will most likely require a cultural change for many LE organizations, which is not easy, and will require strong leadership. Because large-scale critical incidents are high-risk/low-frequency events, leaders do not want to invest in preventing and preparing for an event they have never experienced or witnessed and see as an unlikely challenge. Leaders also know that preparing for these events requires devoting resources now that most likely they will not get a return on their investment (Bazerman & Watkins, 2008). The failure to prepare for critical adversarial events is important to further understand, as it is connected to a deep-seated human tendency to maintain the status quo.

Law enforcement departments should evaluate their response systems and look for areas of improvement. Improvement can be done by writing action reports and reviews to compile lessons learned. Taking the lessons learned and utilizing them properly requires a learning organization that will implement the lessons learned for future conflicts. There is ample information publicly available from which LE can learn. Many of these "blood lessons" need not be repeated and a department's need to remember that history is the repository of all lessons learned. Leaders must guard against this organizational memory loss.

Large-scale incidents occur infrequently, which makes it challenging for LE leaders to test and improve their skills in resolving incidents (Donahue & Tuohy, 2006). To counter the infrequency, incident command should be utilized in day-to-day LE operations to help ensure it becomes part of the department's culture. Doing so will also help ensure that incident command will be used when a large-scale critical incident occurs.

Improving incident command during large-scale incidents will help mitigate other issues that are occurring, such as inappropriate self-deployment and inappropriate parking. A good incident commander is also a strong leader and improving incident command will require LE leaders to switch from a mindset of "it can't happen here" to "it could happen here." A shift in mindset will require LE leadership to understand how to manage dynamic tactical problems, and how to manage chaos. Law enforcement leadership should also participate in reality-based training scenarios and decision-making exercises. Research proves that decision-making exercises and reality-based training scenarios help build artificial experience. This artificial experience will help a decision maker build a collection of mental slides. When a decision maker is confronted with a similar problem they have trained for, they will not start to solve the problem from the beginning but from where they left off in their thought process (Heal, 2012).

Limitations

Fifteen AARs from large-scale critical incidents were analyzed to determine key improvement themes for LE and begin to populate the initial phase timeline in a critical adversarial event. Although the AARs provided a wealth of information for initial analysis, they are limited by the evidence given within the report. As noted in the Sandy Hook AAR, some of the personnel involved were reluctant to provide information. After-action reports do not necessarily account for all factors surrounding the response, and there is a high likelihood there are other aspects of these events that have yet to be revealed.

Future Research Needed

The AARs researched in this thesis represent the largest critical incidents in the United States over the past 10 years. Further research will need to be conducted when AARs are written for these incidents to discover if the same issues are proliferating and whether any new issues

have come to light. As society and technology evolves, many new issues and challenges will likely emerge. Further research should continuously update these findings to include new problems with LE response.

Additional research will be needed on the use and effectiveness of ICS in rapidly unfolding events. The literature and research findings indicate there are problems with ICS during the initial response phase which were mentioned in the literature review and analysis chapters. The question remains on whether or not ICS is useful in these circumstances or if another model should be developed. As previously mentioned, there is a debate in the emergency management community about the "one size fits all" incident management system. According to Kiel (1995), "The best organizational systems are ones that can do without management. These are systems that have the response capable to solve problems with maximal learning and minimal top down direction" (p. 16). The ability of the LE hierarchical response system to operate from the bottum up with minimal direction from the top will require trust and training.

When all of the challenges found in the reports are distilled down to their most basic form, the root cause of the majority of problems during large-scale critical incidents involving an adversary is poor leadership. Everything rises and falls on leadership and when these events occur, strong leadership is required and sorely missed when lacking (Lebow, 1981). The seven primary issues discovered in the analysis provide an opportunity to develop leadership through training. Research into crisis leadership during critical adversarial events might also inform why the lack of leadership is an issue during crises. When opportunities for improvement were not found in the reports it was solid leadership that provided the necessary countermeasures to avoid a problem from emerging.

Summary

Over the past 10 years, U.S. LE has been challenged during their response to large-scale critical incidents involving. Responding to these conflicts where citizens are dying, and suspects are actively engaged in killing is an extreme challenge for any LE department. The analysis of this research thesis revealed seven challenges during these incidents which are ICS issues, indiscriminate parking, inappropriate self-deployment, unified command issues, unified command w/fire issues, communication problems and a lack of planning. While these challenges can negatively impact LE response, recognizing and understanding these challenges presents opportunities for improvements in LE leadership and for LE agencies to become learning organizations that focus on improving the response system. Because these incidents are becoming more frequent and violent, LE should strive to take advantage of these opportunities. Anything less could cost the lives of citizens and LE officers in future events.

APPENDICES

APPENDIX A

INSTITUTIONAL REVIEW BOARD EXEMPTION

IRB Application for Existing and Secondary Data

If your project involves the use of non-identifiable data or biospecimens, YOUR PROJECT DOES NOT REQUIRE IRB SUBMISSION OR REVIEW because it does not satisfy the definition of research with human subjects.

You should only complete this form if your project involves the following:

- **Initial access to information contains identifiable private information but the investigator abstracts the data required for research purposes in a way that the information can no longer identify the subjects.**

  Example: Investigator A has access to a coded private information data set from Investigator B. Investigator A records the information needed for the research without the codes. *However, this method of data collection would NOT require IRB review if, Investigator A enters into an agreement with Investigator B, prohibiting the release of the key to Investigator A under any circumstances or until the death of the individuals about whom the data is about is deceased.*

- **Secondary analysis of retrospective or prospective identifiable data may occur under one of the following conditions:**
  - **Identifiable private information or identifiable biospecimens are publically available**
  - **Information is recorded by the investigator in a manner that the identity of human subjects cannot be readily ascertained either directly or indirectly. That is, investigators cannot contact the subjects or re-identify subjects.**
  - **Data are regulated under HIPAA for the purposes of healthcare operations, research or public health (i.e. medical records or charts)**
  - **Research is conducted by or on behalf of a Federal agency using information generated by the government for non-research purposes (e.g. CDC or Census data).**

  Example: An investigator subsequently revisits a data set collected via a survey that recorded identifiable information from subjects two years ago. The investigator seeks to use the same data set applying the same hypothesis but uses a different statistical strategy to analyze the same data set thus, conducting secondary data analysis of existing data.

  Example: An investigator has a dual appointment with CSULB and the Long Beach Community Health Clinic. The investigator seeks to analyze the medical charts of all patients of the clinic from 2015-2017 and filter out for HEP C to determine other risk factors for the diagnosis. The access and use of data provided in the medical charts contains identifiable information but the clinic has authorized the access to the charts for research purposes that will produce public health results. The information contained in the charts is protected and regulated under HIPAA.

APPENDIX B

INTERNET LINKS FOR AFTER-ACTION REPORTS

Internet Links for After-Action Reports

Virginia Tech AAR
https://scholar.lib.vt.edu/prevail/docs/April16ReportRev20091204.pdf

Oakland, CA AAR
http://www.aele.org/law/2010all02/BOI+Public+Report-PUBLICATION+COPY-31Dec09.pdf

Tampa Bay AAR
https://www.policefoundation.org/wp-content/uploads/2015/05/Tampa-manhunt-after-action-report.pdf

Sandy Hook AAR
https://www.ct.gov/despp/lib/despp/dsp/csp_aar.pdf

Aurora, CO AAR
https://www.courts.state.co.us/Media/Opinion_Docs/14CV31595 After Action Review Report Redacted.pdf

Watertown, MA AAR (Boston Bombing)
https://www.mass.gov/files/documents/2016/09/uz/after-action-report-for-the-response-to-the-2013-boston-marathon-bombings.pdf

Dorner (San Bernardino County, CA) AAR
https://www.policefoundation.org/critical-incident-review-library/police-foundation-regional-review-of-police-response-to-the-attacks-by-christopher-dorner/

Washington Naval Shipyard AAR
https://mpdc.dc.gov/sites/default/files/dc/sites/mpdc/publication/attachments/MPD AAR_Navy Yard_Posting_07-2014.pdf

LAX AAR
https://www.lawa.org/-/media/lawa-web/projects-and-reports/lawa-t3-after-action-report-march-18-2014.ashx

Las Vegas NV AAR (2014)
https://ric-zai-inc.com/Publications/cops-w0798-pub.pdf

Stockton, CA AAR
https://www.policefoundation.org/publication/a-heist-gone-bad/

San Bernardino, CA AAR
https://www.justice.gov/usao-cdca/file/891996/downloadDC

Kalamazoo, MI AAR
https://www.policefoundation.org/wp-content/uploads/2017/05/PF_Managing-the-Response-to-a-Mobile-Mass-Shooting_5.10.17.pdf

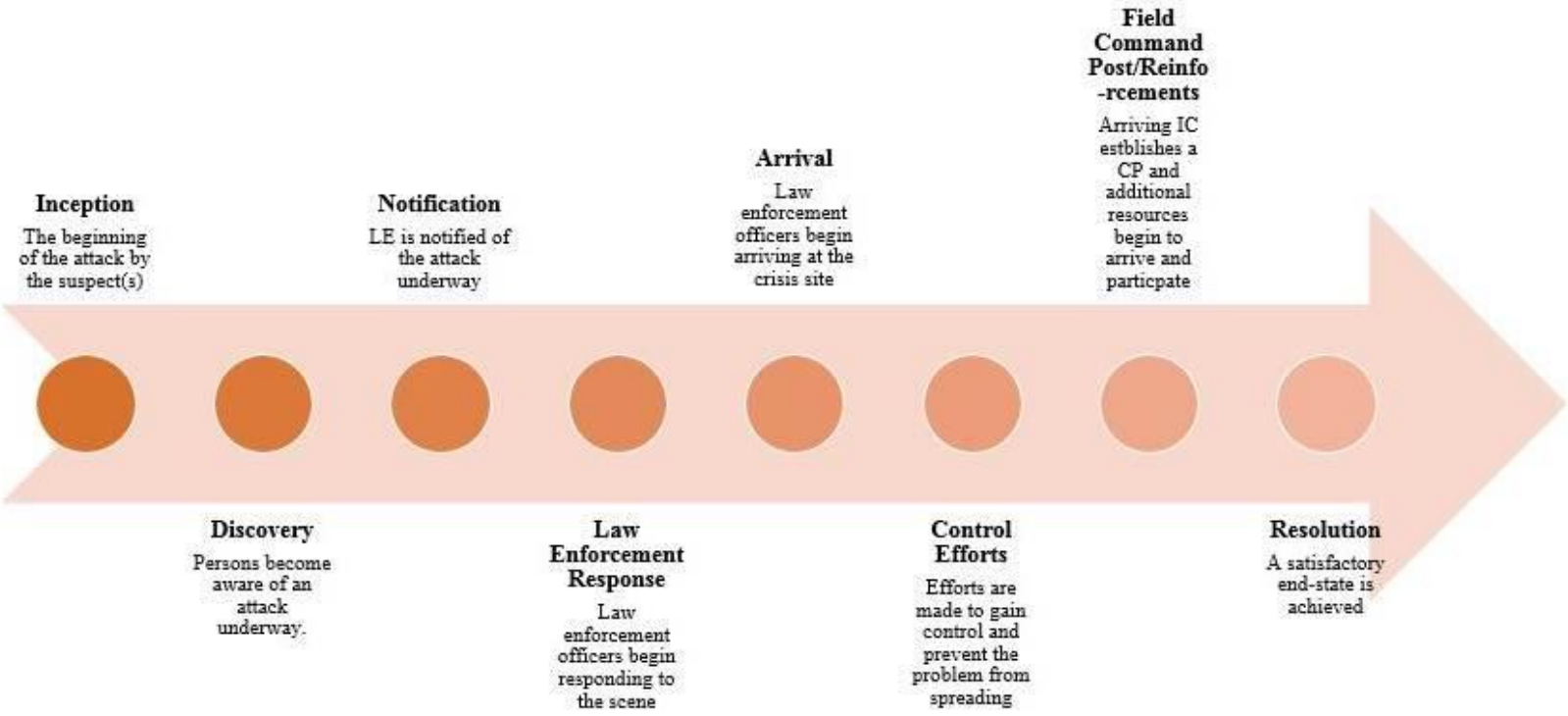
Orlando, FL AAR
https://www.policefoundation.org/publication/rescue-response-and-resilience-a-critical-incident-review-of-the-orlando-public-safety-response-to-the-attack-on-the-pulse-nightclub/

Ft. Lauderdale, FL AAR
http://www.broward.org/Airport/Advisories/Documents/Afteractionreportfll.pdf

APPENDIX C

DETAILED TIMELINE OF THE INITIAL RESPONSE PHASE

Timeline of the Initial Response Phase of a Large-Scale Critical Incident



APPENDIX D

GLOSSARY

GLOSSARY

Adversarial crisis: A crisis that results from those with malicious intent and is deliberately caused by another person. This means they are adversarial in nature in that there are one or more suspects who must be captured or defeated in some manner. Examples include terrorists, snipers, hostage situations, barricaded suspects, fleeing felons, active shooters and so on.

BearCat (Lenco): An armored rescue vehicle purpose built by Lenco for police officers and first responders. These vehicles are credited with saving many lives including those of first responders and citizens in both natural and adversarial crises.

Command Post (CP): The field location at which the primary tactical-level, on scene incident command functions are performed. The CP may be collocated with the incident base or other incident facilities.

Emergency Operations Center (EOC): The physical location at which the coordination of information and resources to support domestic incident management activities normally takes place. An EOC may be a temporary facility or may be located in a more central or permanently established facility, perhaps at a higher level of organization within a jurisdiction. EOCs may be organized by major functional disciplines (e.g., fire, law enforcement, and medical services), by jurisdiction (e.g., Federal, State, regional, county, city, tribal), or some combination thereof.

Incident Commander (IC): The individual responsible for all incident activities, including the development of strategies and tactics and the ordering and the release of resources. The IC has overall authority and responsibility for conducting incident operations and is responsible for the management of all incident operations at the incident site.

Incident Command System (ICS): A standardized on-scene emergency management construct specifically designed to provide for the adoption of an integrated organizational structure that reflects the complexity and demands of single or multiple incidents.

Initial response phase: The time period during which law enforcement officers are dispatched via radio to the scene of an incident. The time period continues with their subsequent response, arrival, gaining situational awareness, formulating a hasty plan and applying countermeasures.

Multi-Assault Counter-Terrorism Action Capabilities (MACTAC): A counter-terrorism response strategy for responding to a multi-coordinated attack. The most critical objective is to minimize loss of life.

Self-deployment: The independent action of an individual or individuals to an incident without the ability to immediately intervene in an ongoing situation or without a request from the jurisdiction in command.

Special Weapons and Tactics (S.W.A.T.) Team: Any designated group of law enforcement officers who are selected, trained, and equipped to work as a coordinated team to resolve critical

incidents that are so hazardous, complex or unusual that they may exceed the capabilities of first responders or investigative units.

Threat and Hazard Identification and Risk Assessment (THIRA): An all-hazards capability-based assessment tool suited for use by all jurisdictions. THIRA allows a jurisdiction to understand its threats and hazards and how their impacts may vary according to time of occurrence, seasons, locations, and community factors.

Unified Command: An application of the incident command system (ICS) when there is more than one agency with incident jurisdiction or when incidents cross political jurisdictions. Agencies work together through the designated members of unified command, often the senior person from agencies and/or disciplines participating in the unified command, to establish a common set of objectives and strategies and a single incident action plan.

REFERENCES

REFERENCES

Ackoff, R. (2006). Why few organizations adopt systems thinking. *Systems Research and Behavioral Science, 23*(5), 705-708.

Anderson, A., Compton, D., & Mason, T. (2004). Managing in a dangerous world: National incident management system. *Engineering Management Journal, 16*(4), 3-9.

Asci, H., Fatma, T., & Altuntas, F. (2016). A strategic approach for learning organizations: Mental models. *Procedia: Social and Behavioral Sciences, 235*, 2-11.

Bartos, O., & Wehr, P. (2002). *Using conflict theory*. Cambridge, England: Cambridge University Press.

Bazerman, M., & Watkins, M. (2008). *Predictable surprises: The disasters you should have seen coming and how to avoid them*. Boston, MA: Harvard Business School.

Bennett, B. (2011). Effective emergency management: A closer look at the incident command system. *Professional Safety, 56*(11), 28-37. Retrieved from http://csulb.idm.oclc.org/login?url=https ://search-proquest-com.csulb.idm.oclc.org/docview/902758511?accountid=10351

Bennis, W. (1989). *Why leaders can't lead: Just managing isn't enough*. [Soundview Executive Book Summaries, Books 24X7 version]. Retrieved from http://library.books24x7.com/toc.aspx?bookid=

Bigley, G. A., & Roberts, K. H. (2001). The incident command system: High-reliability organizing for complex and volatile task environments. *Academy of Management Journal, 44*(6), 1281-1299.

Blanchard, B. (2008). *Guide to emergency management and related terms, definitions, concepts, acronyms, organizations, programs, guidance & legislation*. Retrieved from https://training.fema.gov/.../select%20em-related%20terms%20and%20definitions.doc

Boin, A., & Renaud, C. (2013). Orchestrating joint sensemaking across government levels: Challenges and requirements for crisis leadership. *Journal of Leadership Studies, 7*(3), 41-46.

Braziel, R., Devon Bell, D., & Watson. G. (2015). *A heist gone bad: A Police Foundation critical incident review of the Stockton Police response to the Bank of the West robbery and hostage-taking*. Retrieved from https://www.policefoundation.org/publication/a-heist-gone-bad/

Braziel, R., Straub, F., Watson, G., & Hoops, R. (2016). *Bringing calm to chaos: A critical incident review of the San Bernardino public safety response to the December 2, 2015 terrorist shooting incident at the Inland Regional Center*. Retrieved from https://www.justice.gov/usao-cdca/file/891996/download

Broward County Aviation Department. (2017*). Fort Lauderdale-Hollywood International Airport active-shooter incident and post-event response, January 6, 2017: After-action report*. Retrieved from http://www.broward.org/Airport/Advisories/Documents/Afteractionreportfll.pdf

Bruns, A., & Burgess, J. (2012). Researching news discussion on Twitter. *Journalism Studies, 13*(5-6), 801-814

Buck, D., Trainor, J., & Aguirre, B. (2006). A critical evaluation of the Incident Command System and NIMS. *Journal of Homeland Security and Emergency Management, 3*(3), 1-27.

Burns, J. (1978). *Leadership*. New York, NY: Perennial.

C3 Pathways. (2014). *4 best practices for active shooter incident management*. Retrieved from https://www.c3pathways.com/whitepaper/White_Paper_4_Best_Practices_Active_Shooter.pdf

California Emergency Management Agency. (2010). *Foundation for the Standardized Emergency Management System (SEMS)*. Retrieved from http://www.caloes.ca.gov/PlanningPreparednessSite/Documents/SEMS_ Foundation_ver_01-2010.pdf

California Office of Emergency Services. (2016). *Law enforcement guide for emergency operations*. Retrieved from http://www.caloes.ca.gov/LawEnforcement Site/Documents/2Red%20Book.pdf

Castells, M. (2005). *The network society: From knowledge to policy*. Retrieved from https://www.umass.edu/digitalcenter/research/pdfs/JF_NetworkSociety.pdf

Centers for Disease Control and Prevention. (2011). *Worldwide injuries and violence*. Retrieved from http://www.cdc.gov/injury/global/index.html

City of Santa Monica. (2014). *City of Santa Monica June 7th, 2013 shooting incident*. Retrieved from https://www.smgov.net/uploadedFiles/Departments/OEM/Video_Archive/Santa%20Monica%20Shooting%20Experience%20verFeb%202014.pdf

Connecticut State Police. (2018). *Connecticut State Police after action report: Newtown shooting incident December 12, 2012*. Retrieved from https://www.ct.gov/despp/lib/despp/dsp/csp_aar.pdf

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approach* (4th ed.). Thousand Oaks, CA: Sage.

Donahue, A., & Tuohy, R. (2006). Lessons we don't learn: A study of the lessons of disasters, why we repeat them, and how we can learn them. *Homeland Security Affairs, 2*(2), 1-28.

Dorn, M., Sheperd, S., Brookes, T., Bentley, R., Ellis, R., Miller, W., . . . Bellaire, U. (2016). *Post-incident review: Arapahoe High School active shooter incident*. Retrieved from http:// www .policefoundation.org/wp-content/uploads/2018/02/SHI-Arapahoe-HS-Active-Shooter_Post-incident-review.pdf

Dynes, D. (1994). *Community emergency planning: false assumptions and inappropriate analogies.* Retrieved from http://www.crhnet.ca/sites/default/files/library/Dynes.1994. Community%20emergency%20planning.False%20assumptions.pdf

Faith, K., Jackson, B., & Willis, H. (2011). Text analysis of after action reports to support improved emergency response planning. *Journal of Homeland Security and Emergency Management, 8*(1), 1-16.

Fachner, J., Lum, C., Sachs, S. Stephens, D., & Williams, H. (2011). *The Baltimore Police Department police-involved shooting of January 9, 2011*. Retrieved from https:// www.policefoundation.org/critical-incident-review-library/after-action-report-on-police-shooting-in-baltimore-club/

Federal Bureau of Investigation. (2014*). A study of active shooter incidents in the United States between 2000 and 2013*. Retrieved from https://www.fbi.gov/about-us/office-of-partner-engagement/active-shooter-incidents/a-study-of-active-shooter-incidents-in-the-u.s.-2000-2013

Federal Bureau of Investigation. (2016). *A study of active shooter incidents in the United States between 2014 and 2015*. Retrieved from https://www.fbi.gov/file-repository/active shooterincidentsus_2014-2015.pdf/view

Federal Bureau of Investigation. (2018). *A study of active shooter incidents in the United States between 2016 and 2017.* Retrieved from https://webcache.googleusercontent.com/search ?q=cache:Lz3l7n6V3eYJ:https://www.fbi.gov/file-repository/active-shooter-incidents-us-2016-2017.pdf/view+&cd=3&hl=en&ct=clnk&gl=us&client=safari

Federal Emergency Management Agency. (2010). *Developing and maintaining emergency operation plans.* Retrieved from https://www.fema.gov/media-library-data/20130726-1828-25045- 0014/cpg_101_comprehensive_preparedness_guide_developing_and_ maintaining_emergency_operations_plans_2010.pdf

Federal Emergency Management Agency. (2011). *Presidential Policy Directive/PPD-8: National Preparedness.* Retrieved from https://www.dhs.gov/presidential-policy-directive-8-national-preparedness

Federal Emergency Management Agency. (2015). *National Incident Management System.* Retrieved from https://www.fema.gov/national-incident-management-system

Federal Emergency Management Agency. (2017). *National Incident Management System.* Retrieved from https://www.fema.gov/media-library-data/1508151197225-ced8c60378c3936adb92c1a3ee6f6564/FINAL_NIMS_2017.pdf

Garcia, F. (2006). Effective leadership response to crisis. *Strategy & Leadership, 34*(1), 4-10. https://doi.org/10.1108/10878570610637849

Garmey, T., Elliker, K., & Caulder, J. (2017). *Final report: Independent review of the 2017 protest events in Charlottesville, Virginia*. Retrieved from http://www.charlottesville .org/home/showdocument?id=59691

Giuliani, R. (2002). *Leadership.* New York, NY: Hyperion.

Guba, E. (1990). *The alternative paradigm dialog*. In E. Guba (Ed.), *The paradigm dialog* (pp. 17-20). Newbury Park, CA: Sage.

Haddow, G., Bullock, J., & Coppola, D. (2011). *Introduction to emergency management* (4th ed.). Burlington, MA: Butterworth Heinemann.

Heal, C. (2009). Failure analysis. *The Tactical Edge*. Retrieved from http://cato news.org/files /2015/11/failure-analysis.pdf

Heal, C. (2012). *Field command*. New York, NY: Lantern.

Hess, E. (2014). *Learning organizations: Using science to build a leading-edge learning organization.* New York, NY: Columbia University Press.

Hewitt, J., Wilkenfeld, J., & Gurr, T. (2008). *Peace and conflict*. Boulder, CO: Paradigm.

Hillyard, M. (2000). *Public crisis management: How and why organizations work together to solve society's most threatening problems*. Lincoln, NE: Writer's Club Press.

Jackson, B., & Willis, H. (2011). Text analysis of after action reports to support improved emergency response planning. *Journal of Homeland Security and Emergency Management, 8*(1), 1-16.

Jacobs, D. (1979). Inequality and police strength: Conflict theory and coercive control in metropolitan areas. *American Sociological Review, 44*(6), 913-25.

Jensen, J., & Waugh, W. (2014). The United States' experience with the incident command system: What we think we know and what we need to know more about. *Journal of Contingencies and Crisis Management, 22*(1), 5-17.

Kiel, D. (1995). *Chaos theory and disaster response management: Lessons for managing periods of extreme instability*. Retrieved from https://blackboard.angelo.edu/bbcswebdav/institution/LFA/CSS/Course%20Material/BOR6330/Readings/CHAOS%20THEORY%20AND%20DISASTER%20RESPONSE%20MANAGEMENT.pdf

Klann, G. (2003). *Crisis leadership: Using military lessons, organizational experiences, and the power of influencee to lessen the impact of chaos on the people you lead*. Greensboro, NC: Center for Creative Leadership.

Klein, G. (1999). *Sources of power: How people make decisions*. Cambridge, MA: First MIT Press.

Knapp, P. (1994). One world--Many worlds. In *Contemporary sociological theory* (2nd ed., pp. 228-246). New York, NY: Harpercollins College Division.

Lagadec, P. (2009). *The mega crisis unknown territory: In search of conceptual and strategic breakthroughs*. Retrieved from https://hal.archives-ouvertes.fr/hal-00404076/document

Learning Organizations. (2011). In V. L. Burton, III (Ed.), *Encyclopedia of small business* (4th ed., vol. 2, pp. 768-772). Detroit, MI.: Gale. Retrieved from http://link.galegroup.com.csulb.idm.oclc.org/apps/doc/CX2343700337/GVRL?u=long89855&sid=GVRL&xid=92a6f3d1

Lebow, R. N. (1981). *Between peace and war*. Baltimore, MD: Johns Hopkins University Press.

Leonard, M., Barry, D., Isaac, A., Henderson, J., & McNulty, E. (2009). *Meta-leadership: A primer.* Cambridge, MA: Harvard School of Public Health.

Lindsey, G. (2014). *Active shooter incident and resulting airport disruption: A review of response operations*. Retrieved from https://www.lawa.org/-/media/lawa-web/projects-and-reports/lawa-t3-after-action-report-march-18-2014.ashx

Liu, W., & Opotow A. (2014). Difficult conflicts. In T. Coleman, M. Deutsch, & E. Marcus, (Eds.), *The handbook of conflict resolution: Theory and practice* (pp. 681-707). San Francisco, CA: Josey Bass.

McEntire, D., & Dawson, G. (2007). The intergovernmental context. In L. W. William & K. Tierney (Eds.), *Emergency management: Principles and practice for local government* (pp. 57-70). Baltimore, MD: United Book Press.

Miller, S. (2017, October 2). Las Vegas shooting now tops list of worst mass shootings in U.S. history. *U.S.A. Today*. Retrieved from https://www.usatoday.com/story/news/2017/10/02/worst-mass-shootings-u-s-history/722254001/

Molinelli, J., & Ehrenberg, K. (2013). *Executive summary: Active shooter response/suicide incident Garden State Plaza Mall, November 4th, 2013*. Retrieved from http://fliphtml5.com/bookcase/eajbu

Molino, L. (2006). *Emergency incident management systems: Fundamentals and applications*. Hoboken, NJ: John Wiley & Sons

Moody, T. (2010). *Filling the gap between NIMS/ICS and the law enforcement initial response in the age of the urban Jihad*. Retrieved from https://calhoun.nps.edu/bitstream/handle/10945/5182/10Sep_Moody.pdf?sequence=1&isAllowed=y

Neal, D. M. (1997). Reconsidering the phases of disaster. *International Journal of Mass Emergencies and Disasters, 15*(2), 239-264.

Neal, S. (2014). *Toxic boss blues*. Manakin-Sabot, Virginia: Dementi Milestone.

Neamy, R. (2011). *From FIRESCOPE to NIMS*. Retrieved from http://www.firerescuemagazine.com/articles/print/volume-6/issue-8/command-and-leadership/from-firescope-to-nims.html

Norton, T. (2016, Fall). Unraveling the knot: Common mistakes made during large scale critical incidents and how to overcome them. *CATO News*. Retrieved from http://fliphtml5.com/bookcase/khdz

Oberschall, A. (2009). *Conflict theory*. In K. Leicht & C. Jenkins. (Eds.), *Handbook of politics: State and society in global perspective* (pp. 177-193). New York, NY: Springer.

Police Executive Research Foundation. (2015). *Lessons learned from the 2015 civil unrest in Baltimore*. Retrieved from http://www.policeforum.org/assets/2015baltimorecivilunrest.pdf

Police Foundation. (2015). *Southern California law enforcement response to the attacks by Christopher Dorner*. Retrieved from https://www.policefoundation.org/critical-incident-review-library/police-foundation-regional-review-of-police-response-to-the-attacks-by-christopher-dorner/

Project Management Team. (2014). *After action report for the response to the 2013 Boston Marathon bombing*. Retrieved from https://www.mass.gov/files/documents/2016 /09/uz/after-action-report-for-the-response-to-the-2013-boston-marathon-bombings.pdf

Provost, C., & Teske, P. (2009). *President George W. Bush's influence over bureaucracy and policy: Extraordinary times, extraordinary powers* (1st ed.). New York, NY: Palgrave Macmillan.

Radvanovsky, R., & McDougall, A. (2013). *Critical infrastructure: Homeland security and emergency preparedness* (3rd ed.). Boca Raton, Fl: CRC Press, Taylor & Francis Group.

Renaud, C. (2012). *The missing piece of NIMS: Teaching incident commanders how to function in the edge of chaos*. Retrieved from https://www.hsaj.org/articles/221#comments

Ringhofer, J. (1985). *Law enforcement incident command system (LEICS) field operations guide*. San Bernardino, CA: San Bernardino County Sheriff's Department.

Ritzer, G. (1990). *Frontiers of social theory: The new syntheses*. New York, NY: Columbia University Press.

Rubin, C. (2007). Local emergency management: Origins and evolution. In L. W. William & K. Tierney (Eds.), *Emergency management: Principles and practice for local government* (pp. 57-70). Baltimore, MD: United Book Press.

Senge, P. (2006). *The fifth discipline: The art & practice of the learning organization*. New York, NY: Crown Business.

Smith, K. L. (2007). *Ready or not? An assessment of the California SEMS emergency management program.* Retrieved from http://csulb.idm.oclc.org/login ?url=https://search-proquest com.csulb.idm.oclc.org/docview/304890693?accountid =10351

Stambler, K., & Barbera, J. (2011). Engineering the incident command and multiagency coordination systems. *Journal of Homeland Security and Emergency Management, 8*(1), 1-27.

Stern, E. (2013). Preparing: The sixth task of crisis leadership. *Journal of Leadership Studies, 7*(3), 51-56.

Stewart, J. (2009). *Independent board of inquiry into the Oakland Police Department incident March 21, 2009: A public report of findings and recommendations*. Retrieved from http://www.aele.org/law/2010all02/BOI+Public+Report-PUBLICATION+COPY-31Dec09.pdf

Stewart, J., King, D., & Lafond, R. (2011). *Tampa Bay manhunt after action report: Lessons learned in police-community partnerships and use of the incident command system*. Retrieved from https://www.policefoundation.org/wp-content/uploads/2015/05/Tampa-manhunt-after-action-report.pdf

Straub, F., Cambria, J., Castor, J., Gorban, B., Meade, B., Waltemeyer, D., & Zeunik, J., (2017). *Rescue, response, and resilience: A critical incident review of the Orlando public safety response to the attack on the Pulse Nightclub*. Retrieved from https://www .policefoundation.org/publication/rescue-response-and-resilience-a-critical-incident-review-of-the-orlando-public-safety-response-to-the-attack-on-the-pulse-nightclub/

Straub, F., Cowell, B., Zeunik, J., & Gorban, B., (2017). *Managing the response to a mobile mass shooting: A critical incident review of the Kalamazoo, Michigan public safety response to the February 20, 2016 mass shooting incident*. Retrieved from https://www.policefoundation.org/wp-content/uploads/2017/05/PF_Managing-the-Response-to-a-Mobile-Mass-Shooting_5.10.17.pdf

Tekleab, A., Sims, H., Yun, S., Tesluk, P., & Cox, J. (2008). Are we on the same page? Effects of self-awareness of empowering and transformational leadership. *Journal of Leadership & Organizational Studies, 14*(3), 185-201.

Thorkildsen, Z., Shultz, A., Woodmansee, T., & Tracy, D. (2016). *Las Vegas after-action assessment: Lessons learned from the Las Vegas Metropolitan Police Department's ambush incident*. Retrieved from https://ric-zai-inc.com/Publications/cops-w0798-pub.pdf

Topper, B., & Lagadec, P. (2013). Fractal crisis: A new path for crisis theory and management. *Journal of Contingencies and Crisis Management, 21*(1), 4-16.

TriData Division: System Planning Corporation. (2009). *Mass shootings at Virginia Tech: Addendum to the report of the review panel.* Retrieved from https://scholar. lib.vt.edu/prevail/docs/April16ReportRev20091204.pdf

TriData Division: System Planning Corporation. (2014). *Aurora Century 16 Theatre shooting: After action report for the City of Aurora*. Retrieved from https://justiceclearing house.com/wp-content/uploads/2017/10/C16-AAR.pdf

University of Texas at Austin Police Department. (2010). *Active Shooter/Suicide After Action Report*. Retrieved from University of Texas at Austin Police Department website: https://police .utexas.edu/sites/police.utexas.edu/files/utpd_after_action_report.pdf

Washington DC Metropolitan Police Department. (2014). *After action report Washington Navy Yard, September 16, 2013: Internal review of the Metropolitan Police Department Washington D.C.* Retrieved from https://mpdc.dc.gov/sites/default/files/dc/sites/mpdc/publication/attachments/MPD AAR_Navy Yard_Posting_07-2014.pdf

Weick, K., & Sutcliffe, K. (2007). *Managing the unexpected: Resilient performance in an age of uncertainty.* San Fransisco, CA: Jossey-Bass.

Wheatley, M. (2007). Leadership of self-organized networks: Lessons from the war on terror. *Performance Improvement Quarterly, 20*(2), 59-66.

Willink, J., & Babin, L. (2015). *Extreme ownership: How U.S. Navy SEALS lead and win*. New York, NY: St. Martin's Press.