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THESIS

ACTIVE SHOOTERS: IS LAW ENFORCEMENT READY FOR A MUMBAI STYLE ATTACK?

by

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September 2013

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The November 26, 2008, attack on Mumbai is a transparent example of how determined terrorists, trained to die fighting, can bring a large metropolitan city to its knees. It is entirely probable that Mumbai-type attacks could occur in the United States. Since the local law enforcement respond to attacks in progress, any active shooter event would be handled by the local jurisdiction. Many law enforcement agencies have begun to incorporate tactical plans to respond to Mumbai-type terrorist attacks.

This thesis focused on police preparedness of select large metropolitan law enforcement agencies for potential Mumbai-type terrorist attacks. A comparative analysis of these police agencies was conducted, which showed that the frequency of training was found to be varying and inadequate by these agencies. A similar concern was that none of the agencies had equipped all the police officers with rifles, which were deemed critical to engage well-equipped active shooters.

It is the conclusion of the thesis that gaps in preparedness exist and law enforcement organizations have room for improvement. It was also concluded that agencies need to enhance communication capability between neighboring jurisdictions and focus on triage of the victims during the early stages of attacks when medical personnel would be unable to approach

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ACTIVE SHOOTERS: IS LAW ENFORCEMENT READY FOR A MUMBAI STYLE ATTACK?

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The November 26, 2008, attack on Mumbai is a transparent example of how determined terrorists, trained to die fighting, can bring a large metropolitan city to its knees. It is entirely probable that Mumbai-type attacks could occur in the United States. Since the local law enforcement respond to attacks in progress, any active shooter event would be handled by the local jurisdiction. Many law enforcement agencies have begun to incorporate tactical plans to respond to Mumbai-type terrorist attacks.

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LIST OF ACRONYMS AND ABBREVIATIONS

ALERRT	Advanced Law Enforcement Rapid Response Training
ASIP	Active Shooter Incident Plan
CIA	Central Intelligence Agency
CPD	Chicago Police Department
CPR	Cardiopulmonary Resuscitation
CTCIB	Counter Terrorism and Critical Intelligence Bureau
DHS	Department of Homeland Security
EMS	Emergency Medical Services
FDNY	Fire Department New York
GPS	Global Positioning Device
HLS	Homeland Security
HLEC	High Level Enquiry Committee
HSPD	Homeland Security Presidential Directive
IARD	Immediate Action Rapid Deployment
ICS	Incident Command System
IED	Improvised Explosive Device
LAFD	Los Angeles Fire Department
LAPD	Los Angeles Police Department
LeT	Lashkar-e-Taiba
LVMPD	Las Vegas Metropolitan Police Department
MACTAC	Multi-Assault Counter Terrorism Capabilities
NIMS	National Incident Management System
NRF	National Response Framework
NYPD	New York Police Department
OEMC	Office of Emergency Management and Communications
RACR	Real-Time Analysis and Critical Response Division
RAND	Research and Development Corporation
SWAT	Special Weapons and Tactics
UAV	Unmanned Aerial Vehicle

U.S.	United States
WMD	Weapons of Mass Destruction

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I.   INTRODUCTION

Defining terrorism is an effort fraught with controversy. Due to the complexities of the phenomenon, political dimensions of the issue, conflicting self-interests, ideological differences, and alternative perceptions of the events, agreements or consensus over a singular uniform definition of terrorism has been conspicuous by its absence (Saul, 2005). As Hoffman (2006) demonstrates, the meaning of the term has changed frequently during the last two centuries. However, despite the numerous extant definitions of terrorism, certain common features can be outlined and a general comprehensive definition be offered.

For the purpose of this thesis, Moghaddam's (2006) definition of terrorism, "the politically motivated violence, perpetrated by individuals, groups, or state-sponsored agents, intended to bring about feelings of terror and helplessness in a population in order to influence decision-making and to change behavior," will be used. Although the events of September 11, 2001, gave a warning to the United States that spectacular and high casualty terrorism had arrived in U.S., the nation had faced terrorism throughout its history. While the central concepts of terrorism, including coercive and political nature of violence on non-combatant populations may stay constant, the strategies employed by terrorism are dynamic—as evidenced by the evolving tactics of terrorists (Garrison, 2003; Philipps, 2010).

The 9/11 attacks were unusual as they employed commercial aviation crafts as lethal and effective bombs. However, the tactics used by the Al-Qa'ida was not unusual as it utilized a relatively older method of attack—suicide bombing. The tactical evolution of terrorist attacks confounds governments and responding agencies since preventive methods almost always invariably focus on the last major attack as the guiding factor. The 9/11 attacks caused a significant response by the U.S. government, and, since that time, the United States has spent a tremendous amount of time, money and lives of American soldiers to fight a nebulous war on terrorism (Stiglitz, 2011). Seven years later, on November 26, 2008, a further evolution of terrorist strategy was observed in Mumbai, India, when four teams of 10 terrorists began a 60-hour-long simultaneous

assault in different locations, paralyzing the city known as the commercial hub of India and killing more than 170 people. The attacks were attributed to the Pakistan-based terrorist group Lashkar-e-Taiba (Rabasa et al., 2009).

This terrorist incident revealed that while the sight of planes flying into buildings and killing thousands of people created terror in the minds of people, the multiple active shooter incidents were equally frightening. Since the Mumbai attack involved determined terrorists using easily available firearms, the logistics of executing such an attack was much simpler compared to accomplishing an attack of 9/11 magnitude. It is not improbable that Mumbai-type attacks could occur in the United States (Wyllie, 2009).[1]

While the vulnerability of the United States to al Qaeda-related violence remains a possibility, domestic terrorism concerns also pose a risk to the population (Bergen, Hoffman, & Tiedemann 2011; Hoffman, 2011). In 2009, the United States Department of Homeland Security, Office of Intelligence and Analysis issued a report warning law enforcement that the right-wing extremist activity was on the rise, due to the economy, current political climate, and the return of disgruntled war veterans fueling and filling the ranks of the white supremacy militias. The report suggested that "lone wolves and small terrorist cells" represented the nation's biggest terrorist threat because their low profile made it difficult to intervene or engage in prevention of their acts (United States Department of Homeland Security, 2009). The same report also indicated that the United States will be the target of a terrorist act that could cause a high number of casualties or involve the use of victims as tools to gain notoriety or media attention.

Intelligence acquisition, counter-terrorism, and disruption of terrorist organizations historically have required the efforts of a multitude of government agencies, which, due to competition, stovepipes, and self-interest failed to share

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[1]The Department of Homeland Security defines an active shooter as: "An Active Shooter is an individual actively engaged in killing or attempting to kill people in a confined and populated area; in most cases, active shooters use firearms(s) and there is no pattern or method to their selection of victims" (U.S. Department of Homeland Security, 2008). Immediate Action/Rapid Deployment (IARD) is defined as, "The swift and immediate deployment of law enforcement resources to ongoing, life threatening situations where delayed deployment could otherwise result in death or serious bodily injury to innocent persons" (LAPD, 2003).

information (National Commission on Terrorist Attacks upon the United States, 2004). However, even though federal agencies might take a lead when it comes to terrorism-related intelligence development and counter-terrorism measures, it is the local law enforcement agencies that respond first to an act of terrorism on domestic soil. The risk of "active shooters" causing mass casualties has been ever present in the United States, as evidenced by numerous recent events in which an individual armed with firearms has quickly killed several people even before the law enforcement could respond. Between 2006 and 2012, United States has witnessed 25 mass shootings, seven of which took place in 2012 (Follman, Aronsen, & Pan, 2013). Follman et al. (2012) found that the rate of mass shootings has increased in recent years.

On April 16, 2007, a gunman shot and killed 32 people and wounded 17 others in two separate attacks, approximately two hours apart, before committing suicide, on the campus of Virginia Polytechnic Institute and State University in Blacksburg, Virginia. This was the deadliest shooting incident by a single gunman in U.S. history (Hauser & O'Connor, 2007). In a mass murder event, on November 5, 2009, at Fort Hood military base outside Killeen, Texas, a single gunman, Major Nidal Hasan, shot to death 13 people and wounded 30 (Mackey, 2009). On January 8, 2011, a gunman shot U.S. Representative Gabrielle Giffords and 18 others in Tucson, Arizona, killing 6 people, including the chief judge for the United States District Court for Arizona (Lacey & Herszenhorn, 2011). On August 5, 2012, in an attack on a Sikh temple, a gunman shot and killed six and wounded 3 in Oak Creek, Wisconsin (Yaccino, Schwirtz, & Santora, 2012). In July, 2012, a former Ph.D. student massacred 12 and wounded 58 using firearms in a movie theater in Aurora, Colorado (Frosch & Johnson, 2012). On December 14, 2012, in Newtown, Connecticut, Adam Lanza used a .223 Bushmaster semi-automatic rifle to massacre 20 school children and six adults (Barron, 2012).

These incidents raise a troubling question about the preparation of local law enforcement agencies. If a single shooter, as in the Virginia Tech incident, can kill 32 individuals before a halt to the spree of violence is affected, what kind of damage a multiple group of terrorists, bent upon achieving maximum casualty rate and dedicated to their suicide mission, could cause? The potential for mass murders would exponentially

increase if multiple active shooters, driven by a suicide mission, were to target high-population density locales. Such potential threats, whether emerging from psychologically imbalanced single shooters or from religiously-driven Fidayeen suicide squad terrorists as in Mumbai require a different dynamic and strategy from the first responding police officers compared to the "usual" law and order policing. Law enforcement agencies need to adjust and respond to emerging tactics employed by terrorists, such as those observed in Mumbai, India and also to anticipate potential new avenues of attacks on communities in America.

Many law enforcement agencies have begun to incorporate a concept called the Multi-Assault Counter Terrorism Action Capabilities (MACTAC) to respond to Mumbai-type terrorist attacks (Chudwin, 2011). The MACTAC is an expansion of the IARD tactics and MACTAC concepts provide responding officers with dynamic tactics to use during an incident involving multiple shooters at multiple locations (Sanow, 2011). The MACTAC concept allows combining of personnel from multiple agencies during operations to assist the local jurisdiction responding to a Mumbai-type terrorist attack (Sanow, 2011).

No place is immune to an attack by active shooters. All public places, especially dense urban populations congregating together in malls, public buildings, etc. are targets for active shooters (United States Department of Justice, 2006). Once an active shooter initiates an attack, the attack is unlikely to stop until the terrorist's actions are stopped by the first responding police officers, unless the individual commits suicide. Thus, there is a need to provide all patrol officers training to respond to scenarios dealing with active shooters. The academy training also must include active shooter scenarios (Borelli, 2005).

This thesis focuses on police preparedness for potential terrorist attacks within the United States that could be inspired by the 2008 Mumbai, India attacks. Furthermore, since domestic active shooters pose similar, albeit with potentially lower casualty counts, to the public, the thesis also focuses on police preparation for active shooter incidents. An analysis of how the various law enforcement agencies in the United States have prepared for a Mumbai type incident is provided. The thesis focuses on major

metropolitan police agencies because of the greater likelihood that a Mumbai-type attack would occur in larger municipalities which provide a target-rich environment and the potential for wide media coverage. An attack on a major city satisfies objectives of terrorist organizations since the level of disruption, fear, and political impact is potentially much higher compared to attacks on a smaller jurisdiction. The research seeks to determine what new strategies are being employed by law enforcement agencies to effectively defend against Mumbai-style attacks and identifies potential new strategies that could be utilized by law enforcement in future.

A.   HYPOTHESIS

Low-probability high-consequence events, also sometimes termed as *black swan* (Taleb, 2010) events, are the most difficult ones to prepare for. Axiomatically, an incident that has not been encountered before could theoretically be prepared for but the effectiveness of preparation will never be revealed unless or until such an event takes place. Unfortunately, inadequate preparation and response to a high-consequence event carries grave aftermaths. As the Mumbai-attacks demonstrated, poor response to multiple shooter assaults had quite a tragic outcome. The success of the terrorists to attract international media coverage and to effectively paralyze Mumbai, an important commercial hub of India, could be construed as a "victory" for the terrorist group.

As various municipal law enforcement agencies have begun to incorporate training to deal with multiple active shooter threats, it is assumed and often proclaimed by law enforcement executives that that their agencies are prepared to address a Mumbai-type incident. However, no comprehensive analysis of MACTAC training, its uniformity, acceptance by the field officers, or effectiveness exists. Relying on assumptions alone regarding preparedness, when it comes to homeland security and public safety, leaves critical questions unanswered. Recent high casualty active shooter incidents indicate the potential for mass casualties in case of multiple active shooter incidents such as the Mumbai incident. The law enforcement rapid response or MACTAC tactical response is literally in its infancy. MACTAC is evolving, but has not

been battle-tested and thus lies within theoretical confinement. It is necessary to conduct a systematic analysis and assessment of potential law enforcement strategies and responses to multiple shooter threat.

Law enforcement in United States is fragmented across local, state, tribal and federal jurisdictions and no uniformity exists in level, uniformity, and quality of training across different jurisdictions. Even though law enforcement agencies across the nation have begun to incorporate MACTAC training, it is unknown whether the same term MACTAC results in similar or effective training for the first responders in different police agencies.

The null hypothesis to test in this case would be that non-uniform, incongruous, and inadequate training (qualitative as well as quantitative) is being provided to field personnel in order to deal with multiple shooter threats (Blake, 2011; Lois et al., 2004). Such hypothesis would require answers whether current proposed law enforcement training (MACTAC or other similar strategies) is appropriate and adequate to deal with threats posed by multiple bands of active shooters, arsonists and bombers spread out geographically in large metropolitan areas. This thesis investigates what steps major metropolitan police departments have taken to respond to Mumbai-type threats. A comparative analysis of various major law enforcement agencies has the potential to provide information that could be used to formulate recommendations dealing with calibration of police departments' strategies on preventing, responding, and recovering from a Mumbai-style incident.

Significance of this study lies in the fact that a comprehensive comparative analysis of MACTAC like preparation across different law enforcement agencies does not exist. Such an analysis should not only reveal the steps taken so far by select law enforcement agencies to prepare for assaults with high-casualty potential, but also to expose possible inadequacies in such preparation. Thus, the primary benefit of this study would be to allow the decision makers to assess MACTAC preparation in high-target localities and thereafter calibrate and enhance such preparation. The comparative analysis should identify gaps that must be addressed and provide information that can be used to modify, develop and improve existing response plans for law enforcement. The

research also seeks to uncover whether or not the results from the analysis could or should be adopted by other agencies. Since MACTAC is an emerging and untested concept and presents many challenges to first responders, it is expected that this research should assist with the formulation of policies and strategies to multiple active shooter scenarios.

B.   RESEARCH QUESTIONS

Frazzano's (2010) research had focused on small jurisdiction's response to active shooters, cross-jurisdictional cooperation, and developing of common lexicon, communication and tactics during active shooter scenarios. This thesis has a different focus and perspective. While Frazzano's focuses was on smaller jurisdiction's response, the present research focuses on major metropolitan law enforcement, specifically to highlight unique concerns facing police departments serving population centers. While major metropolitan law enforcement agencies may not face a lack of human personnel resources or even the need for cross-jurisdictional cooperation as compared to smaller jurisdictions, training requirements and preparation for an agency with 10,000 sworn officers alone present unique challenges. In this study, the focus is on the following questions:

1.   What steps have major metropolitan law enforcement agencies taken and tactics implemented to respond to terrorist attacks equivalent to the attacks in Mumbai?

2.   Is there any uniformity and consistency in tactics implemented between the select agencies used in the study?

3.   What is the perceived level of confidence, within the agency, related to implemented strategies, to combat a Mumbai-type attack?

4.   What steps may be required to potentiate the MACTAC tactics to deal with Mumbai-type attacks?

These four questions emerged as critical issues for law enforcement decision makers and trainers after a review of the relevant literature and interviews with personnel responsible for creating and providing appropriate training to deal with potential active shooting incidents.

C.   METHODOLOGY

This study is a cross-sectional descriptive non-experimental research. The methodology employed in this thesis is qualitative analysis, based upon case studies, utilizing a generally accepted social science case study approach, incorporating comparative analysis of relevant incidents and strategies that have been devised to deal with such incidents. The analytical framework would rely upon assessments of strategic and logistical responses framed by select law enforcement agencies to respond to multiple active shooter threats.

Open source information from previous active shooter incidents will serve as the basis for both tactical and strategic information and analysis.   These include the November 2008 Mumbai, India attacks, the September 2004 Beslan, Russia, massacre, the April 1999 Columbine High School massacre, and the February 1997 North Hollywood Bank of America robbery. The incidents were chosen as they represent primary issues unique to the threat matrix considered here—that of multiple attackers, multiple attack locations, and utilization of firearms and explosives. Police agencies from four major cities, Chicago, Las Vegas, Los Angeles, and New York were used for a comparative analysis of law enforcement agencies, with a focus on their level of planning, preparation and policies for multiple active shooter response.

The representative sampling focused on Chicago, Las Vegas, Los Angeles, and New York for the following reasons: the New York Police Department (NYPD) was selected as a representative law enforcement agencies as it is the largest metropolitan police agency in terms of the size of the police department, the size of the community it serves; it polices a prime terrorism target city, and having been the victim of the attacks of September 11, 2001, has had to confront the future threats (Viegas, 2010). The tactics and training selected by the NYPD, thus have critical importance as an evaluative tool.

Chicago Police Department similarly was chosen due to its size, the large community it serves, and the target-rich dense urban population which makes it a

terrorism target. Chicago was the intended target of a thwarted terrorist attack in October 2010 (Daily Herald, 2010). Additionally, the Chicago subway system is recognized as one of the top terrorist targets (MacNevin, 2005).

Las Vegas Metropolitan Police Department (LVMPD) was selected because it serves a commercially important city—a major tourist attraction with large concentrated population at any given time. Hotels in Las Vegas have been listed as United States' top terrorist targets (MacNevin, 2005). A terrorist attack in Las Vegas would serve multiple terrorist objectives, including attacking a symbolic icon, achieving high number of casualties, and severely impacting a hotel- and casino-dependent economy. Consequently, the LVMPD has expended significant effort in developing tactical response to terrorist threats, including multiple active shooter threats.

Los Angeles, similar to New York, has a large police department and the size of the community it serves is spread over 450 square miles. The infrastructure of Los Angeles is considered prime target for terrorists and the city is ranked as the third major terrorist target in top five U.S. cities (MacNevin, 2005; Viegas, 2005). Documentation found during the May, 1, 2011, raid on Osama bin Laden's compound in Pakistan confirmed that Los Angeles, Chicago and New York were terrorist targets (Simons, 2012).

Data collection relied on open source information, review of existing and evolving policies of various law enforcement agencies, and research material available on the relevant case studies. Beyond the open-source data, agency-specific information was obtained through the training bureaus of the selected police agencies. Status of police preparedness and training was determined through information received from agency training units and management.

D.   DATA ANALYSIS

The data analysis consisted of evaluation of existing, evolving, and planned policies of select police agencies as related to multiple active shooter incidents. Particular focus was placed on level of preparedness as reflected in the nature and amount of training offered to patrol officers as first responders. Proposed training, specialized

resources offered to the line officers (including rifles, video uplink and downlink capabilities, armored vehicles), and funding devoted to MACTAC type programs were also evaluated. Although it is difficult to quantify agency preparedness for a potential incident never encountered before, training currently offered and in offing is strongly suggestive of readiness of an agency to face the eventuality. Another focus of the analysis consisted of identification of potential impediments to successful resolution of multiple active shooter incidents. This analysis was based upon input provided by training units of the select law enforcement agencies.

II.   LITERATURE REVIEW

A.   INTRODUCTION

A Mumbai, India style of attack on U.S. soil would have implications that would be devastating to the American population. An attack of this magnitude should be understood in order to effectively prepare the most effective possible law enforcement response. The primary sources considered and analyzed for this literature review include official governmental reports and documents, which relate to the thesis case studies, as well as literature on the topic by assessing the threat, the impact and the preparedness of the local law enforcement agencies. Secondary sources demonstrate the current literature on the topic, including books and scholarly journals, and in general demonstrate the necessity for law enforcement to be better prepared for this type of attack. By critically examining of the extant literature that deals with active shooter scenarios, an exploration into the importance of the local law enforcement agencies' response will is highlighted and gaps in knowledge are identified. Additionally, this literature review demonstrates that "active shooter" scenarios are a trend that law enforcement has to contend with and has to be prepared to encounter.

B.   ACTIVE SHOOTER

An "active shooter" is defined as the "Suspect(s) activity is immediately causing death and serious bodily injury." The activity is not contained and there is immediate risk of death or serious injury to potential victims. The active shooter scenario is dynamic, evolving very rapidly, and demands an immediate deployment of law enforcement resources to terminate the life threatening situation (Borelli, 2005). The Department of Homeland Security defines an "active shooter," as an "individual actively engaged in killing or attempting to kill people in a confined and populated area; in most cases, active shooters use firearms(s) and there is no pattern or method to their selection of victims. Active shooter situations are unpredictable and evolve quickly. Typically, the immediate deployment of law enforcement is required to stop the shooting and mitigate harm to victims" (United States, Department of Homeland Security, 2008).

The New York Police Department (NYPD) defines an "active shooter" as an individual engaged in killing or attempting to kill people in a confined and populated area, which is very similar to the definition given by the Department of Homeland Security. However, NYPD has limited their definition to include only those cases that spill beyond the intended victim to others, meaning that if a grievant has an issue with an employer that leads to an attack targeting not only the direct supervisor but also spills over to others in the workplace (Kelly, 2011). The Los Angeles Police Department defines an "active shooter" as an armed person who has used deadly force on other persons and aggressively continues to do so while having unrestricted access to additional victims (Bratton, 2003).

In 2009, the United States Department of Homeland Security, Office of Intelligence and Analysis issued a report warning law enforcement that the right-wing extremist activity is on the rise, stating this rise is due to the economy, the current political climate and the return of disgruntled war veterans that is fueling and filling the ranks of the white supremacy militias, (United States Department of Homeland Security, Office of Intelligence and Analysis, 2009). The report further states that "lone wolves and small terrorist cells" represent the nation's biggest terrorist threat because their low profile making it difficult to intervene before they act (United States Department of Homeland Security, 2009). According to the United States Army (2007):

> Terrorism is a reality of the Contemporary Operational Environment and will remain a significant threat for the foreseeable future. Terrorists may target susceptible people, symbols, capabilities, and infrastructure to enhance terrorist objectives and diminish the resolve of an adversary. Attacks may occur while United States military forces are in the United States homeland, in transit to and from missions, and during operational deployments around the world.

According to Borelli, potentially every 9-1-1 call could be placing patrol officers and other first responders in a position where they could find themselves facing an Active Shooter who is a terrorist armed with several weapons and more than willing to die for his/her cause (Borelli, 2005). As patrol officers, the first responders will not be able to set up a perimeter and wait for the SWAT teams to arrive and resolve the situation. The first responders will have to aggressively close on the active shooter and neutralize

him/her by arrest or termination. While Columbine High School brought the need for active shooter training and policies to the forefront of the country's consciousness, we have to recognize that the active shooter scenario can occur in any public place. All public places, where there is a dense population of people congregating, are targets for active shooters. Once an active shooter starts, the active shooter is not likely to stop until he is forced to cease by actions of the first responding police officers. For these very reasons, all patrol officers should be receiving active shooter resolution training even in the entrance level police-training curriculum. The training will be applicable to shooting situations such as the one at Columbine and in the event of terrorist attacks that take on this mode of operation (Borelli, 2005).

Homeland Security Presidential Directive-5 (HSPD-5) demanded the development of the NIMS. The NIMS system was developed to create an atmosphere where the Federal, State, and local governments could work effectively and efficiently together to prepare for, respond to, and recover from domestic incidents, regardless of cause, size, or complexity. Additionally, the NIMS system was developed to provide for interoperability and compatibility among Federal, State, and local capabilities, to include a core set of concepts, principles, terminology, and technologies covering the incident command system; multi-agency coordination systems; unified command; training; identification and management of resources (including systems for classifying types of resources); qualifications and certification; and the collection, tracking, and reporting of incident information and incident resources (White House, 2003).

The National Response Framework (NRF) that was created in March of 2008, focused primarily on the command and control aspect of emergency management to an all-hazards. Additionally, it in the area of terror attacks; the NRF focused their response to weapons of mass destruction (WMD) and preventive measures to minimize the impact of such attacks (DHS, 2008). As thorough as this document was, it failed to address issues associated with multiple assault active shooter scenarios and only dealt with terror attacks by the way of WMD, especially if prevention fails.

According to the analysis conducted by the New York Police Department (NYPD), the attacks in the city of Mumbai, India had remarkably different tactics than

other suicide terrorist attacks. There were no suicide bombers, but the terrorists were jihadist as they were prepared to die in gun battles. The terrorists used military hit and run type tactics where they use multiple simultaneous attacks from different entry points to overwhelm the Indian security forces ability to react effectively. The terrorists displayed a proficiency in advanced combat techniques including intelligence collection and knowledge of terrain and target, speed of execution giving the terrorists the element of surprise, weapons proficiency, control of terrain, and rapid neutralization and/or separation of targets. The terrorist tactics fused the placement of explosives at selected points to delay the responding forces, backed up with precision firing to employ confusion and escalate casualties. The terrorists operated in military style tactics by seizing control of certain properties and symbolically significant locations along with temporarily taking hostages to slow responders down (NYPD, 2008).

New York Police Department Commissioner Raymond Kelly testified at the Senate Committee on Homeland Security and Governmental Affairs as to the lessons learned from the Mumbai attacks. Kelly stated that the police in Mumbai were not adequately trained or armed to sufficiently deal with a military style tactics that the terrorists used. Kelly has instituted training for new recruits that includes assault rifles and close quarter battle techniques that would have been useful in the Mumbai attacks (Kelly, 2009).

The Research and Development Corporation (RAND) conducted an analysis of the Mumbai terrorist attacks and documented its findings in the Occasional Papers series. RAND concluded that the terror attacks were intended to cause fear and alarm the general population, but also to inspire terrorist constituencies and attract recruits. Success in this incident meant humiliating the Indian Security Services, causing large-scale death and destruction and garnering global media coverage. Additionally, although local police force responded relatively quickly, they lacked both the training to set up appropriate Command Posts and the ability to seal off the different attack sites. Lastly, throughout the crisis, the central government and security forces failed to project an image of control by publicly using words like "chaos" and "paralysis" repeatedly to describe events as they unfolded (RAND Corporation, 2009).

The surround, set up a perimeter to contain the suspects, negotiate and await the response of SWAT approach has been replaced by the "active shooter protocol." Optimally, it calls for a four-person team to advance in a diamond-shaped wedge. Police officers are trained to move toward the sound of gunfire and neutralize the shooter. The goal is to stop the active shooter as quickly as possible (Cullen, 2009).

The New York Police Department (NYPD) released a report of a study they conducted of active shooters (New York City, 2012). Police Commissioner Raymond Kelly stated, "After the Virginia Tech and Mumbai terrorist attacks, the Police Department undertook a statistical analysis of active shooter incidents from 1966 to 2011." The NYPD study looked at 281 active shooter attacks. They found that 98 percent of the active shooter incidents were carried out by a single attacker and 36 percent of active shooter attacks involved more than one weapon. Additionally, 46 percent of active shooter attacks ended with force applied by law enforcement, private security, or other bystander and 40 percent ended with the attacker committing suicide.

According to Rivera, the uniqueness of the active shooter has forced law enforcement to develop new tactics, techniques and procedures to protect the public (Rivera, 2007). Rivera believes that the burden of protecting against an active shooter scenario must be shared by the individual members of the community as these incidents are characterized by their unpredictability, the speed in which they occur, and the lethality of the act. Preventing such incidents would require the presence of specially trained and equipped law enforcement personnel in every school, university and workplace (Rivera, 2007).

Rivera asserts and demonstrates that active shooter incidents are seldom random attacks. The majority of the cases are premeditated acts in which the perpetrator identifies the victim or victims, and searches for them with the intent to kill them (Rivera, 2007). The perpetrator will continue to engage targets of opportunity in the process as well as afterward. Loss of life can be mitigated by way of training, preparation and response against active shooter scenarios. Chances are that the shooter will not flee upon the arrival of law enforcement. The active shooter sees the arrival of law enforcement to the scene of the crisis as a new target (Rivera, 2007).

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The Department of Homeland Security teaches that active shooters situations are unpredictable and evolve quickly (U.S., Department of Homeland Security, 2008). Typically, immediate deployment of law enforcement is required to stop the active shooter and prevent further harm to victims. Because the active shooter scenarios are usually over within 10 to 15 minutes, before the arrival of law enforcement, individuals must be prepared both mentally and physically for these types of situations (U.S., Department of Homeland Security, 2008). Individuals must have good practices for coping with an active shooter situation. To cope with an active shooter situation, the Department of Homeland Security teaches that individuals must be aware of their environment and any possible dangers. Citizens should be cognizant of their two nearest exits in any facility they visit. If one is in an office, they should stay there and secure the door. If in a hallway, they should get into a room and secure the door. As a last resort they should attempt to take the active shooter down, when the shooter is at close range and it is not feasible to flee. Given the described scenario, their only chance for survival is much greater if they try to incapacitate the active shooter (U.S., Department of Homeland Security, 2008). When it is safe, individuals should call 9-1-1 (U.S., Department of Homeland Security, 2008). After teaching this, the Department of Homeland Security created a public service announcement teaching the public that their survival depends on whether they have a plan to Run, Hide, Fight (U.S., Department of Homeland Security, 2012).

The more prepared law enforcement can be for the shooting's aftermath, the less lives may be lost as a result of such a violent act. In a mass shooting there will be many victims with traumatic injuries and there will be a need to prioritize victims and administer advanced first aid. In active shooter situations formally trained medical personnel often cannot be on the scene immediately to provide casualty care, thus responding officers must be educated and trained in immediate casualty care techniques to help save lives. In ALERRT's Terrorism Response Tactics: Active Shooter Level II Training, funded by grants from the Department of Justice Bureau of Justice Assistance and the State of Texas, officers learn self-aid, buddy-aid techniques, and basic means of treating the wounded (Garrett, 2012).

C.   CONCLUSION

This critical analysis of the extant literature identified and considered the key sources and materials related to active shooter attacks using a military tactics to overwhelm the opposing forces. In particular the literature demonstrates that a planned attack using assault type weaponry is not as deadly as those attacks using mass bombings or an IED. However, the active shooter tactic has the potential to create long-drawn-out pandemonium in a highly dense and populated city necessitating that law enforcement leaders consider in detail the preparations and response most capable of protecting citizens at risk. Sustained attacks of the type carried out in Mumbai, India, North Hollywood and others, can impact a region's economy as the violence may deter people from regular commerce. There have been signs of greater violence and frequency with regard to the past school shootings that analysts should consider as potential indicators for future violence. However, to predict this type of violence would be impossible partly because as commonplace as these calamities seem, they are relatively rare crimes (Tanner, 2012).

One of the main considerations for analysts of the literature related to the Mumbai attacks is that a small number of well-trained terrorist attackers with determination and a well thought out plan can cause major damage (McJunkin, 2009). Conversely, a well thought out plan for survival—before the event occurs—can mean the difference between living and dying.

This literature review highlights the need to create a law enforcement response plan to a Mumbai-type attack. However, due to the unique threat that first responders had not faced before in a Mumbai style attack, plans and preparation to address such attacks are in an unchartered territory. It is difficult to analyze with certainty how such plans may succeed unless an event of Mumbai's magnitude occurs. The criticality of the issue demands that such planning and preparation be evaluated in a scholarly and dispassionate manger, thus allowing potential policy implications to emerge as the research reveals gaps.

This thesis focuses on an assessment of law enforcement's planning for a multiple location with multiple suspects attack, similar to the Mumbai-style attack in India. Additionally, a comparative analysis of major city law enforcement's preparation was conducted to contrast the planning and preparation of the different law enforcement agencies. It is expected that the assessment and analysis would assist with an adaptive modulation of existing policy and to improve the success of these critical threat-neutralizing efforts in homeland security. The thesis now moves to consider the relevant cases used in this research.

III. CASE STUDIES

A. INTRODUCTION

This chapter examines and analyzes specific high-profile incidents with particular relevance to homeland security as well as public safety. The selected incidents were significant events in the active shooter arena, drew national attention, or forced the police to modify their tactics in response to these types of events. This chapter explores the incidents, provides a background within the context of threats and their mitigation, identifies the lessons learned. The cases analyzed were:

1.   North Hollywood, California bank robbery and shootout, 1997;

2.   Columbine High School massacre, Colorado, 1999;

3.   Virginia Polytechnic Institute and State University massacre, 2007;

4.   Congresswoman Gabrielle Giffords shooting, Tucson, Arizona, 2011;

5.   Aurora Colorado movie theater shooting, 2012;

6.   Beslan, Russia school massacre, 2004; and

7.   Mumbai, India terrorist attacks, 2008.

The Mumbai attacks and the Beslan massacre were selected as international case studies because of the unique terrorist threats presented by them. In both the incidents, the terrorists utilized military style tactics in their attacks, and, since an attack of this nature has not occurred in the United States, the preparation of police agencies to deal with such attacks remains untested.

While the police in India and Russia should not be considered commensurate with the law enforcement agencies in the United States, lessons can be learned from the Mumbai attacks and the Beslan massacre to better shape law enforcement response in the United States. Several incidents within the United States were selected as case studies with regard to the law enforcement response.

B.   DOMESTIC ACTIVE SHOOTER INCIDENTS NORTH HOLLYWOOD BANK ROBBERY AND SHOOTOUT

On February 28, 1997, Larry Phillips, Jr. and Emil Matasareanu robbed the North Hollywood branch of the Bank of America, located at 6600 Laurel Canyon Boulevard (Yusof, 2012). Prior to this robbery, Phillips and Matasareanu had stolen nearly $2 million in various heists, including three attacks on armored cars and two previous bank holdups (Smith, Weinstein, & Riccardi, 1997). Their modus operandi consisted of using full body armor, military firearms, and engaging in "takeover" style robberies (Coffin, 2007).

During the North Hollywood robbery, Phillips and Matasareanu were clad in body armor and were armed with five rifles, one handgun and 3,300 rounds of ammunition. Their robbery attempt was observed by two LAPD officers who requested help, consequently resulting in a city-wide police response to the emerging incident (McCarthy, 2004). The officers heard gun fire from the bank as Phillips and Matasareanu fired several rounds inside the bank to frighten the employee and to ensure that no one resisted their robbery attempt. The officers put out an "officer needs help" call that put the entire city on high alert. Within minutes, more police arrived on the scene in response, in part because the North Hollywood police station was only two miles away from the targeted bank. The attempts by officers to lock down the bank and contain the robbers were complicated by the sound of automatic gunfire (Coffin, 2007).

As they exited the bank, Phillips and Matasareanu were confronted by LAPD officers and a shootout ensued. Phillips and Matasareanu attempted to flee the scene, Phillips on foot and Matasareanu in their getaway vehicle, while continuing to engage the officers. It was apparent that Phillips and Matasareanu were attempting an escape the dragnet; however, because of the significant police presence—around 350 officers eventually responded to the shootout—the two suspects focused their attention on the police officers and continued to engage the officers with gunfire.

The shootout continued onto a residential street adjacent to the bank until Phillips was mortally wounded as he was shot 11 times; including one self-inflicted gunshot wound (Mako, 2007). Matasareanu was killed by SWAT officers three blocks away and

was shot 29 times. Phillips and Matasareanu were being investigated for having robbed two other banks using virtually identical methods by taking control of the entire bank and firing automatic weapons for control and entry past bullet-proof security doors (Mako, 2007).

Los Angeles police officers encountered several logistical difficulties while confronting the robbery suspects. Eventually, these deficiencies lead to policy changes, especially related to equipping officers with more powerful weaponry. The officers were armed with their personal 9mm or LAPD issued .38 caliber pistols, while some of the officers carried 12 gauge shotguns. Phillips and Matasareanu carried illegally modified fully automatic AKM rifle and an AR-15 rifle with high capacity drum magazines and ammunition capable of penetrating police body armor. Both wore full-body armor which made police handguns ineffective as the handgun bullets did not have the capability of penetrating the body armor

The responding officers faced the additional challenge besides ineffective firepower since the two robbers carried automatic rifles with long-range accuracy and lethality. As officers bullets struck the suspects, the suspects retaliated with a hail of automatic gunfire (LAPD, 1997). To overcome firepower deficiency and to replenish their depleting ammunition, officers were forced to seek assistance from a nearby gun store to obtain weaponry and ammunition that could match that of Phillips and Matasareanu.

When the North Hollywood incident occurred, patrol officers were not trained in rapid intervention tactics. The LAPD Special Weapons and Tactics (SWAT) eventually arrived with rifles powerful enough to penetrate the body armor. The SWAT response took 19 minutes, which was considered a very rapid response for a specialized unit to a distant response location (LAPD, 1997). The SWAT team was armed with MP5, M26, H&K .223, and AR 15 rifles. With SWAT's arrival; the police were finally able to match the firepower of the two suspects. The Los Angeles Police Department SWAT team trains and works together as a unified team. This allowed the team to work seamlessly together to stop the assault (LAPD, 1997). The Los Angeles Police Department, a large

agency numbering just under 10,000 sworn personnel, was able to provide 350 officers to the scene (Wilcox, Van Derbeken, & DeSantis, 2010).

The North Hollywood incident involved two active shooters with a single objective of escaping apprehension. The planning by the robbers was to commit their crime and make an expeditious escape even if their retreat required killing civilians and police in their path. The response of the police forced the robbers into a situation where they could submit to apprehension or engage in aggressive maneuvers while attempting to escape, instead of surrendering. Several critical lessons were learned from the incident. The shootout revealed that the patrol officers were ill equipped to engage and defeat determined criminals who had an advantage of being armed with easily available rifles, powerful ammunition, and body armor. It was only after this incident that municipal police agencies began to equip officers with high powered rifles and stronger caliber pistols. Besides the lack of advantage due to equipment, the incident was marked with a lack of command and control (Newton & Shuster, 1997). In a chaotic situation where numerous gunshots are being fired, suspects are constantly on the move, and suspects are protected against officers' ammunition, initial chaos could be expected but following of an Incident Command System protocol and better training and preparation would have helped the responding officers. The most critical lesson is that two well-equipped bank robbers, possessing weapons which a person could acquire without much inconvenience in U.S., could hold off hundreds of officers and engage them for approximately 45 minutes (Caprarelli & Mindham, 2011).

The North Hollywood incident, though clearly not a politically motivated terrorist attack, is important and instructional to the research at hand. Though these criminals were motivated by greed rather than political, religious or social commitment found in terrorism, they were easily capable of resisting one of the most prepared and effective law enforcement agencies in the nation. The presence of armed and trained police responding quickly to the scene was insufficient to deter the criminals. Instead, the criminals were able to better arm themselves than police with weapons and body armor

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believing that even if interrupted in the commission of their crime they would be able to make an escape using extreme violence against the public and even the lighter armed police that responded.

One must question how much more could this incident inform us about the perceived greater commitment to terrorist ideologies. The attack revealed that two determined and suicidal jihadists, with an aim of killing as many people before they die, would likely create a far more challenging situation for the police. The North Hollywood bank robbery shootings make clear that small unit tactics using readily available weapons and body armor present significant challenges to U.S. police capabilities. The North Hollywood incident is indicative that dealing with an incident, when multiple teams of active shooters, with each individual determined not to escapes but cause maximum casualties, would be exponentially more difficult and challenging. Consequently, it is important to how far major metropolitan law enforcement agencies have come in their preparation for active shooter and multiple active shooter incidents.

C.   COLUMBINE MASSACRE

On April 20, 1999, in the small, suburban town of Littleton, Colorado, two disgruntled but academically above average high-school senior students, Dylan Klebold and Eric Harris, executed an all-out assault on Columbine High School during the middle of the school day (Rosenberg, 2000). Klebold and Harris were characterized as bullies who had been bullied themselves at one time (Weinhold, 2010). Prior to their attack, Klebold and Harris were placed on diversion by the district attorney's office for breaking into a vehicle and stealing property from that vehicle (Erickson, 2001).

Klebold and Harris' plan was to kill hundreds of their peers and teachers (Rosenberg, 2000). Klebold and Harris planned to kill the teachers and students by planting and detonating two 20-pound propane bombs in the school cafeteria and then shoot students as they fled the cafeteria site (Erickson, 2001). When the bombs failed to detonate, Klebold and Harris entered the school and shot two students who were eating lunch, killing one of them (Cullen, 2004). Klebold and Harris began firing at students fleeing the cafeteria, wounding five of them and killing one (Erickson, 2001). Klebold

and Harris then went up the stairs to the main hallway and the hallway outside of the library and began firing indiscriminately (Cullen, 2004). They shot a teacher with a shotgun, seriously wounding him. That teacher later bled to death as emergency medical personnel were unable to enter the location (Erikson, 2001).

About 15 minutes into the rampage, Klebold and Harris entered the library where 56 students, two teachers and two library employees had sought concealment (Kass, 2009). Within seven and one-half minutes, Klebold and Harris had killed 10 students and seriously wounded several others by rifle and shotgun fire (Kass, 2009). The two detonated several pipe bombs, which did not cause severe damage or injury. Several of the students were killed execution style (Erickson, 2001).

When information was received that Columbine High School was under attack, Jefferson County Sheriff's office requested assistance from other law enforcement agencies (Erickson, 2001). Within a short period of time, there were over 1,000 law enforcement and medical personnel on scene (Cullen, 2009). However, the officers initially surrounded the school—as they were trained to do—instead of moving towards the shooters.

Klebold and Harris fired at the police officers from the library window as the police returned fire (Cullen, 2004). With guns, knives, and a multitude of bombs, the two walked the hallways and actively fired upon anything that moved (Erickson, 2001). The two suspects then left the library and went to the science building where they fired at fleeing students. They then returned to the cafeteria and tried to detonate the propane bombs by firing their weapons at the device, but were unsuccessful. They were able to detonate smaller bombs, one of which was attached to a container filled with flammable liquid. The bombs resulted in setting off the fire alarms and sprinkler systems throughout the school (Erickson, 2001).

Klebold and Harris exchanged gunfire with the police officers from the library window as the police officers were providing protection to the paramedics treating students that had fled the building (Cullen, 2009). After approximately 47 minutes of their rampage, the two turned the weapons on themselves, committing suicide (Erickson,

2001). When the shooting was over, 12 students and one teacher were killed; an additional 21 more were injured (Rosenberg, 2000).

This massacre changed police tactics for law enforcement agencies across the United States. A paradigmatic change was brought about by Klebold and Harris since their killing spree demonstrated to the police and to the grief-stricken parents of the dead and the wounded children that previous tactics to deal with suspects posing imminent danger to victims were seriously flawed. The Columbine massacre made the police realize that they needed to prepare for active shooters and to provide better and effective training to address such attacks (Chudwin, 2011). The Columbine massacre was not the first school shooting in the United States, but it was the tipping point as the catalyst for law enforcement across the United States to change tactics required to engage active threats (Nichols, 2012).

This active shooter scenario illustrated the need for rapid intervention on the part of responding police rather than containment. By forming contact teams from the first responding units and moving as quickly as possible towards the threat to engage and stop the suspects more victims could be saved, instead of waiting for specialized units to arrive and handle the situation. The need for rapid intervention, instead of waiting for SWAT or specialized units was proven to be paramount in cases such as Columbine since the goal of an active shooter is to kill as many victims as possible and not to take hostages (Rosegrant, 2004).

After the Columbine event, police tactics of surrounding the location where an armed assault is taking place, setting up a perimeter to contain the suspects, negotiate with the suspects while awaiting the response of SWAT has been replaced by the "active shooter protocol" (Chudwin, 2011, Nichols, 2012). Optimally, this protocol calls for a four-officer team to advance rapidly in a diamond-shaped wedge towards the shooters. The training teaches the officers to move toward the sound of gunfire and stop the shooter. The goal is to stop the active shooter as quickly as possible (Cullen, 2009).

During the Columbine event, the officers followed the traditional surround and isolate the suspect tactics that were taught up to that point. Officers set up a perimeter to

contain the suspects. The responding officers then called the SWAT officers. The mindset was that time was "on our side," meaning that it was safer for the officers to take their time in responding to the threat (Borsch, 2007). Pervious training and policies were set because suspect gunmen in earlier situations had sought hostages rather than indiscriminate killing. The Columbine event marked a significant transition that challenged police assumptions.

According to Lieutenant Colonel Dave Grossman, a WestPoint psychology and military science professor, the shorter the response time, the more lives will be saved (Borsch, 2007). Grossman calls this the "Stopwatch of Death model." Grossman teaches that the actions taken by the first, second or first few officers from an agency can determine the success of an incident, not that of a large mutual aid operation (Borsch, 2007). Grossman's research supports the law enforcement training transition of forming hasty response teams from those units arriving on scene rather than waiting for specialized teams or mutual aid.

Typically, officers initially responding to the Columbine assault in progress lacked heavy caliber weapons, protective gear and other equipment usually afforded to the SWAT teams to engage suspects and incidents of this magnitude. The typical handguns issued to officers were adequate enough to protect the patrol officer during routine patrol but not adequate enough to stop Klebold and Harris from a distance (Erickson, 2001). One school resource officer engaged the shooter with his handgun from a sizeable distance, which had little to no effect (Erickson, 2001).

Entry into the building by law enforcement was greatly complicated by deficiencies in radio communication. Officers could not communicate with each other because they were from different agencies and operated on different radio frequencies. Communications was further hampered for the SWAT team making entry due to the fire alarms blasting inside the school (Erickson, 2001).

The time it took for SWAT officers to arrive in this incident cost lives of the innocent victims. Klebold and Harris might have been stopped earlier by a few trained and equipped patrol officers who were competent to move towards the threat with the

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ability to stop the suspects instead of waiting for SWAT. This would likely have cut the casualty count by confronting the suspects effectively and quicker.

While several tactical lessons were learned from this incident, including the need for uniform radio communication and the need for sufficiently accurate and powerful firearms such as rifles, perhaps the most important lesson was that law enforcement needed to change their historical tactics of surround, contain, and wait. Waiting for specialized units that are more capable of dealing with complex and highly dangerous events generally not faced by patrol officers is a recipe for high casualty count in active shooter scenarios. In case of determined suicidal jihadi terrorist attackers, the casualty count is likely to be much higher if the traditional tactics are followed. The Columbine incident provided lessons not only to deal with psychologically imbalanced individuals bent upon killing as many people as they could, but also to prepare for terrorist attacks of a similar kind.

D. VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

On April 16, 2007, Seung-Hui Cho, a 23-year-old undergraduate student, opened fire inside a Virginia Polytechnic Institute and State University dormitory and continued his assault two hours later in a classroom (Virginia Tech Review Panel Report, 2007). By the time the incident was over, a total of 32 people had been killed in what was classified as the most lethal active shooter incident in American history (Virginia Tech Review Panel Report, 2007).

Cho used two firearms to carry out his attacks, a .22 caliber Walther semi-automatic handgun and a 9mm semi-automatic Glock 19 handgun (Hauser, 2007). The shootings occurred in separate incidents. The first incident was at West Ambler Johnston Hall-a dormitory, where Cho killed two students, at around 7:15 am (Virginia Tech Review Panel Report, 2007). Cho left the scene and returned to his dorm room (Bowman, 2007). While police and emergency medical technicians were responding to the shootings in the dorm next door, Cho changed out of his bloodstained clothes (Johnson & Thornburgh, 2007). Almost two hours later, just after 9:00 am, Cho went to a nearby post office and mailed a manifesto and video to NBC News (Johnson, 2007).

Cho then walked to Norris Hall, which contained classrooms, carrying a backpack. In the backpack, Cho had several chains, locks, his two handguns and nearly 400 rounds of ammunition (Virginia Tech Review Panel Report, 2007). Cho chained the three entrance doors shut and placed a note on the door that any attempt to open the door would set off a bomb. Cho began to shoot at students and faculty on the second floor (Virginia Tech Review Panel Report, 2007). Cho shot and killed 13 students and the professor in classroom 206 and then 5 people in room 207. Cho killed eleven students in room 211 as they attempted to barricade the door. Cho tried several other rooms, but many rooms had been barricaded by students and professors (Virginia Tech Review Panel Report, 2007). This rampage lasted about 10 to 12 minutes until Cho shot himself in the head (Gelineau, 2007). In Norris Hall, Cho fired a minimum of 174 rounds, killing 30 people and wounding 17 (Gelineau, 2007; Bowman, 2007). All of the victims were shot at least three times and 28 of the 32 killed were shot in the head (Horwitz, 2007). Cho killed five faculty members and 27 students; 17 were injured by gunfire and an additional six were injured by jumping out of windows from the second story of the building in an attempt to escape (Virginia Tech Review Panel Report, 2007).

Police from Virginia Tech arrived within three minutes of receiving an emergency call. The first five officers formed into teams—as they had been taught in active shooter training (Virginia Tech Review Panel Report, 2007). They immediately moved to the entrance of the building; however, it took them approximately five minutes to enter the barricaded building (Virginia Tech Review Panel Report, 2007). As the officers managed to make entry into the building and reached the second floor, they heard Cho fire his final shot (Williams, 2007). It took Cho nine minutes to shoot 170 rounds and kill 30 people (Garrett, 2012).

The Virginia Tech mass killing brought to light the need for responding officers to add breaching capabilities to their equipment bag as Cho had chained closed all of the entrances to that particular building (Blythe, 2007). Initial confusion and errors allowed the Virginia Tech incident to expand. The law enforcement officials had erred in assuming that the first shooting in the dorm rooms was a domestic incident. As a result, the focus of law enforcement was not on the campus to search for the possible shooter.

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The assumption that this incident was domestic related also lead to delays and mistakes while the first victim's boyfriend was detained after his girlfriend had been shot by Cho.

The police response to this active shooter threat was prompt and the officers fell back on their training and moved quickly towards the threat, despite their movement being obstructed by Cho chaining the entrance doors. The training, especially frequent training between the Virginia Tech Police Department officers with the local Blacksburg police officers was deemed to be critical for the coordinated and efficient response of both the campus and the Blacksburg officers to the active shooter threat (Virginia Tech Review Panel Report, 2007).

During this incident, despite the prompt response of the police, one shooter, armed with two handguns, was able to murder a high number of available victims, in a very short spell, in a target-dense location. A critical question to address would be the impact of highly armed and determined multiple bands of active shooters. If a single shooter with a free availability of potential victims may cause an unacceptably high number of casualties—causing terror in the population, disrupting society, and creating chaos, the potential for high casualty count when multiple shooters strike may be too high. This incident also indicates that if the first responders arrive promptly, it may re-focus the attention of the active shooter(s) towards the police and prevent them from killing more innocent victims.

E.   GABRIELLE GIFFORDS

On January 8, 2011, Gabrielle Giffords, a member of the United States House of Representatives, was shot in the head by Jared Lee Loughner, while she was in a public meeting with her constituents (Lacey & Herszenhom, 2011). Giffords was outside a Safeway grocery store in a town called Adobes, just outside of Tucson, Arizona when Loughner came running up through the crowd with a 9mm Glock 19 semi-automatic handgun with a 33 round magazine (Barrett, 2011). Loughner, the sole gunman, shot Giffords at point blank range and then fired into the crowd (Bell and Buck, 2011). When the assault was over 6 people were dead and 13 injured by Loughner (Murphy & Riccardi, 2011). A federal judge and a noine-year-old girl were among the killed (Brant-

Zawadzki, 2011). Loughner was detained by bystanders in the crowd and held until the officers from Pima County Sheriff's Department arrived (Rampton, 2011).

Pima County Sheriff's Department was the first law enforcement that responded to the shooting. The medical training of deputies who cared for the injured played a vital role in the survival of some of the victims (Watkiss, 2011). According to Captain Byron Gwaltney, Pima County Sheriff's Department, things could have been worse for some victims if it were not for the work done by some of the deputies to saves the lives of the victims. The deputies had arrived several minutes before the Emergency Medical Services personnel (Watkiss, 2011). The deputies carry a medical kit that was used to stop the bleeding for some victims. The kit contained bandages for head wounds, tourniquets, a seal to cover up chest wounds and scissors to cut clothing off of victims to access their injuries (Watkiss, 2011).

This is an incident where the quick response by law enforcement that carried a medical kit was able to save lives. Loughner was held by citizens in the crowd until the arrival of law enforcement not allowing officers to form into teams to address an active shooter.

Once again, this incident demonstrates a common thread that appears to bind active shooter incidents. The suspect had access to freely available weaponry, high capacity magazines, and ample ammunition. It is unlikely that potential active shooters would be held back by the lack of available firepower. Furthermore, as in the Columbine and Virginia Tech incidents, the determination of the active shooters combined with the availability of victims resulted in a very high casualty count in a very short time. Although the police tactics and training during the Columbine incident were found wanting and thereafter changed to address active shooter incident, the Virginia Tech massacre revealed that a single determined shooter could accomplish a high casualty count prior to the arrival of the law enforcement personnel. Giffords shooting is yet another reminder that active shooter incidents may evolve and culminate rapidly, and culminate in multiple homicides and high number of casualties.

F.   AURORA COLORADO SHOOTING

On July 20, 2012, a mass shooting occurred inside the Century movie theater, located inside a mall, in Aurora, Colorado, during the midnight showing of the film *The Dark Knight Rises*. The sole gunman, James Holmes, bought a ticket to the movie, sat in the front row and about 20 minutes into the movie walked out of one of the emergency exits, propping it open (Carter & Pearson, 2012). Holmes went to his vehicle parked near the exit and dressed into black tactical clothing that included a gas mask, ballistic vest, helmet, bullet resistant leggings, a throat protector, groin protector, and tactical gloves (Barrett & Fender, 2012). Holmes retrieved his guns, including a 12-gauge shotgun, a Smith and Wesson M&P15 semi-automatic rifle with a 100 round magazine, and a Glock .22 caliber handgun and re-entered the theatre (Fahrenthold, 2012). Holmes set off tear gas grenades and shot into the audience, killing 12 and injuring 58 (Sandell, Dolak, & Curry, 2012). Holmes was arrested outside the theater minutes after the shooting (Brown, 2012).

The first calls were received by 9-1-1 operators at 12:39 am and police officers arrived within 90 seconds (Horwitz, 2012). Holmes was taken into custody, without resistance, at about 12:45 am next to his vehicle (Carter and Pearson, 2012). Police officers had a difficult time getting enough ambulances to assist the injured (Hayes, 2012). Some of the police officers transported injured citizens in their police vehicles (Hayes, 2012). The Aurora Police Department was praised for their quick response and for transporting some of the victims to hospitals that saved numerous lives (Strauss and Johnson, 2012).

This incident illustrates the need for law enforcement personnel to be trained in advanced life support and have basic medical equipment to help the victims once the violent attack is over (Garrett, 2012). Once again, this incident demonstrated that despite the prompt response of the police, one well-armed shooter could quickly kill and injure a high number of available victims in a target-dense environment. Due to the chaotic situation and confusion, despite the prompt arrival of the police, the active shooter could

manage to kill and injure a large number of innocent victims. Yet, again, the threat of highly armed and determined active shooters presents a menacing reality confronting the society and to first responding personnel.

G.   MULTIPLE ACTIVE SHOOTERS

1.   Beslan Russia School Massacre

On September 1, 2004, a large group, including students, teachers, and parents, was taken hostage by Islamist terrorists in Beslan, North Ossetia, at a school in an agricultural and industrial community of 40,000 (Giduck, 2005).   The number of terrorists was estimated to be at least 32. The situation culminated in a mass murder. The incident lasted 3 days and ended up in hundreds of deaths and injuries (Baker and Glasser, 2004). Local police and regional law enforcement agencies were unprepared for such large scale violent action by terrorists (Murphy, 2005). There were over 370 deaths at Beslan during the three-day period; 331 were civilians, 317 hostages including 186 children were killed.   Over 700 civilians and over 50 security forces and military personnel were injured (United States Army, 2007).

As early as eight to 10 days prior to the assault, the Russian government had developed some intelligence that an assault might take place in a school somewhere around Chechnya. However, no specific intelligence on where the attack would occur was available (Giduck, 2005). The attack occurred on the first day of school, also known as "First September" or the "Day of Knowledge" when a large number of family members were present at the school, (United States Department of State, 2005).

On this day, a group of some 30 masked individuals, dressed in camouflage, athletic and civilian clothing drove onto the school courtyard. The group was well trained and knew the layout of the school from previous surveillance. The attackers jumped from their vehicles, began barking orders, and then began firing their assault rifles into the crowd. (Uzzell, 2004). The attackers were well armed and wore vests stocked with ammunition. The attackers were armed with assault rifles, 40mm grenade launchers, hand grenades, rocket propelled grenades and protective masks to counter debilitating gas or chemicals (Borisov, 2004).

The attackers acted quickly by isolating the hostages and neutralizing hostage ability to attempt resistance, escape or contact with anyone outside the school (United States Army, 2007). The school had poor security, with one security guard and a police officer who happened to be in the crowd, equipped only with his sidearm. The security guard and police officer engaged the terrorist and killed one attacker; however, they were outnumbered and outgunned. Both were killed within seconds of the attack (Giduck, 2005). The terrorists searched the school and gathered people hiding in some class rooms on the first floor. One of the male hostages was killed immediately as he attempted to resist. Most of the hostages were taken to the gymnasium and sat on the floor (Chivers, 2006). Some of the female students were dragged into the gymnasium by their hair where they were brutally raped (Giduck, 2005). All mobile or cellular telephones were confiscated and the hostages were threatened that anyone found with a phone would be killed (Chivers, 2006). In a seeming well-rehearsed plan, the school was promptly fortified and barricaded. The various terrorists were divided into operational teams with specific duties. Some focused on preparing defenses for an assault from local police and militia; some started assembling bombs and tripwires; a small number of terrorist contained the hostages. Snipers were positioned at key locations in the school building complex (United States Army, 2007). Once inside the gymnasium, explosive devices were set at the doorways to prevent the hostages from escaping and prevent anyone from entering. The terrorist group had brought improvised explosive devices (IED)—plastic bottles packed with nails, bolts and screws as shrapnel and homemade dynamite. It was later determined that the terrorists had 66 pounds of explosive in addition to hand and rocket propelled grenades. The terrorists made it clear that they were prepared to die and that anyone who moved would be killed (Giduck, 2005). Once securing of the school and seizing of the hostages was accomplished, the terrorists demanded the release of prisoners captured during the Nazran raid and the complete withdrawal of Russian troops from Chechnya (Forster, 2006). Local police and other security forces gradually cordoned the school area off by establishing a perimeter (United States Army, 2007).

After the third day, Russian security forces used tanks and fired into the school to kill or capture the terrorist responsible for this massacre (Chivers, 2006). Eventually the

Russian forces breached the school walls with small explosives. The Russian Federal Security Service initially reported that 32 terrorists were involved in the Beslan hostage taking and mass murder incident. One of the terrorists was captured, convicted and is serving a life sentence in a Russian prison. Intelligence from the captured terrorist indicated that the Beslan attack was intended to create an expansion of fighting across the Caucasus region, and to incite religious and ethnic hatred based on a compulsion for revenge (United States Army, 2007). Evidence suggests that additional terrorist were involved beyond those killed or captured and that the group may have been as large as 70 terrorist (Smith, 2004).

Some of the terrorist probably escaped and about 20 were killed. The Chechen terrorists used this incident to gain international attention and to seek political concessions from the Russian Federation concerning Chechnya (United States Army, 2007).

The Beslan massacre revealed some significant shortcomings in local law enforcement and security agencies' preparation to deal with large-scale multiple shooter attack. Due to the large number of terrorists involved in this incident, as well as the military style weapons and tactics the attackers used, the initial response of the security agencies was feeble and ineffective (Giduck, 2005). Information about possible school attacks and separatists allegedly penetrating into Beslan area was brought to the attention of the authorities yet not acted upon. Local authorities did not have an effective anti-terrorism strategy and were further hampered by lack of resources and preparedness (United States Army, 2007).

Prevention and protection require a strategy based on deterrence and intelligence (Forster, 2006). Russian security forces had failed to deter the incursion into North Ossetia or to harden the potential targets by increasing security. Furthermore, intelligence was misinterpreted or not used. In spite of arresting a potential collaborator (who disclosed the possibility of school attacks) and indications from local sources as early as August 28 that rebels had penetrated Beslan, no local counter-measures were implemented (Forster, 2006).

Local police and regional law enforcement agencies were unprepared for such a dramatic and violent attack by terrorists. The school was guarded by one unarmed police officer without an immediate means to communicate with his agency since he did not possess a radio (United States Army, 2007). Local police and security forces were disorganized, even while establishing a perimeter to isolate the school. Law enforcement leaders lacked control of an exclusion zone from terrorist gunfire. Only about 100 meters separated a porous perimeter from the school area. Civilians were allowed to meander on the streets among houses and apartments, and in some cases walked within shouting distance to the school. Securing the site with an effective perimeter might have precluded armed civilians or militia from further complicating containment of the school site. Many civilians were allowed to join the perimeter with their own weapons and others were allowed roam the streets within the cordoned off area. The security concept of an inner perimeter to contain the terrorists and an outer perimeter to block civilians from interfering with operations was poorly conducted (United States Army, 2007).

There was poor coordination and communication between the different security forces and a potentially complicating situation existed as members of Federal forces, army, special counterterrorism forces, Ossetia republic organizations, local police, untrained volunteers, and undisciplined local civilians with weapons mixed together. Poorly prepared and trained local police were found to be incapable of confronting the challenging situation. One of the reasons police did not start arriving at the school until well over an hour after the terrorist seizure of the school was an inability to unlock a container and distribute weapons at the local police station (United States Army, 2007). Furthermore, lack of clarity regarding chain of command also contributed to the chaotic (Soldatov & Borogan, 2005).

Clear command and control and a coordinated leadership effort toward resolving the crisis was not executed effectively by the Russian authorities. Transfer of critical information; incorporating local expertise and knowledge of the area, facilities, and buildings; and integrated operations were not apparent between the local authorities, Republic representatives, military forces, and Federal security forces. Not having one chain of command at Beslan was problematic and dysfunctional (United States Army,

2007). Operational contingency plans to counter a mass hostage situation such as Beslan did not appear to exist. The first command center was established and managed directly by the President of North Ossetia/Alania in a nearby building. Hours later, a separate command center was activated by senior officials who arrived from the Russian Federal Security Service (FSB). Two FSB staffs were formed during this crisis. A military general officer led a Federal Operational Staff, and a separate staff was attached to three deputy Federal Security Service Chiefs. These three entities appeared to work independently and were counter-productive to each other's efforts. Communications and information sharing appeared stove piped, rather than inter-operational (United States Army, 2007).

Professional negotiators were not apparent in the unraveling crisis of hostages with a scene already confounded by murder of civilians during the initial hours in the schoolyard and building. Negotiations, or the appearance of negotiations, were under the constant gaze of parents, friends, and relatives near the school (United States Army, 2007). Although one cannot advocate acquiescence to terrorist demands (releasing the prisoners captured during the Nazran raid, as demanded by the Beslan perpetrators), entering into serious negotiations should have been considered, particularly given the directly relevant and ancillary information available (Forster, 2006).

Medical evacuation vehicles and medical facilities were unprepared to accept the large number of injured hostages and members of the security forces. Attempts at triage were quickly overwhelmed. The incident lacked clear evacuation routes, which complicated timely medical evacuations. Private vehicles had to be pushed out of the roadways in some situations to allow other private vehicles, commandeered to carry injured hostages, a route toward area hospitals or temporary treatment points.

2. Mumbai Terrorist Attack

Mumbai, the commercial and entertainment capital of India, is also known as India's Wall Street, its' Hollywood, and its' Milan. The city contributes 14 per cent of the income tax collection and 37 per cent of the corporate tax collection of the nation. On November 26, 2008, a well-planned and coordinated terrorist attack took place in

Mumbai when 10 operatives trained by Lashkar-e-Taiba (LeT) killed 172 people and wounded hundreds of others with firearms, grenades, and improvised explosive devices during an attack lasting three days (Jones, 2012). This Pakistan-based terrorist group, LeT, sees India as part of the "Crusader-Zionist-Hindu" alliance and, therefore, the enemy of Islam (Gera, 2010). The group is also dedicated to Pakistan's irredentist goals towards parts of Kashmir controlled by India.

The terrorist group had boarded a small boat in Karachi at 8 a.m. on November 22, sailed a short distance before boarding a bigger carrier. The 10 men took over an Indian fishing boat, killed the crewmembers except the captain, who was later beheaded as they neared the Mumbai shoreline (Gera, 2010). The attackers sailed 550 nautical miles along the Arabian Sea, arriving on the shores of Mumbai on November 26 (Sengupta, 2009).

The10 attackers were divided into four teams. After arriving by sea, the teams split up and each team attacked separate locations. Team one took a taxi to Chhatrapati Shivaji Terminus, also known as Victory Terminus, Mumbai's main train station. Each man carried a weapons pack, containing an AK-56 rifle, a 9-millimeter pistol, ammunition, hand grenades, a bomb containing a military-grade explosive, and a timer with instructions inscribed in Urdu (Kelly, 2009; Sengupta, 2009). Once inside the train station they took out their automatic assault AK-56, a Chinese version of the AK-47 assault rifle, and opened fire (Rabasaet et al., 2009; Gera, 2010). The assailants began walking through the terminal, killing indiscriminately for 90 minutes before police officers arrived and forced the terrorist to leave. This team then went to Cama and Albless Hospital, where they again began firing indiscriminately at innocent victims. The terrorists moved to the Trident-Oberoi Hotel and continued to fire at victims along the way. The attackers had a detailed diagram of the hotel's layout. This team was responsible for a third of the 172 fatalities (Rabasa et al., 2009).

The second team walked into the Nariman House, a commercial-residential complex that was run by the Jewish Chabad Lubavich. The third team of attackers went to the Trident-Oberoi Hotel where they began killing indiscriminately. One of the terrorists was heard involved in a conversation on his cell phone, "…Everything is being

recorded by the media. Inflict the maximum damage. Keepfighting. Don't be taken alive…" (Sengupta, 2009). The battle in this hotel lasted for 17 hours before the terrorists were killed, and resulted in the death of 30 victims (Rabasa et al., 2009).

The fourth team entered the Taj Mahal Palace hotel, after briefly entering the Leopold Café where they sprayed the occupants with automatic gunfire, killing 10 people. Eyewitness accounts from the Taj Mahal Palace Hotel indicated that the terrorists knew their way through the hidden doors and back hallways of the hotel. The terrorists had a detailed diagram of the hotel's layout (Gera, 2010). Once the terrorists were inside the hotel, they shot at the occupants as they walked from floor to floor, killing people indiscriminately. The siege of the Taj Mahal hotel lasted 60 hours and ended after Indian Commandos killed these last four terrorists (Rabasa et al., 2009).

The police in Mumbai were armed with riot gear, which contained batons, gas guns and single bolt action .303 rifles (High Level Enquiry Committee [HLEC], 2008). The police did not have adequate bulletproof vests or other equipment to shield against the assault rifles carried by the attackers (HLEC, 2008). Home Minister Shivraj Patil (who resigned in the wake of the attacks) ordered deployment of India's elite National Security Guard commandos approximately 90 minutes after the attacks began. However, the mobilized units did not arrive on the scene until the next morning, some10 hours after the initial shooting began. This delay gave a significant tactical advantage to the militants. According to a high ranking Mumbai police official, the militants made no demands and had killed most of their hostages before being engaged by commandos on the morning of November 27 (Kronstadt, 2008).

India's elite National Security Guard was comprised of 56 members and those 56 members only had 24 bulletproof vests and had no live fire practice with their weapons since September 27, 2007, due to a shortage of ammunition (HLEC, 2008, Sec. 1, 35). The terrorist attacks lasted for 60 hours until the capture of the lone surviving terrorist, Mohammad Ajmal Kasab, at the Taj Mahal Palace Hotel by Indian security forces.

The lone surviving terrorist, Mohammed Ajmal Amir Kasab was captured and interrogated by the police. During his interrogation, Kasab disclosed that the group had

planned on escaping safely after the attacks. Additionally, Kasab told the police that he was trained to "kill to the last death," as he was instructed not to be taken alive (Sidney Morning Herald, 2008). Kasab was also given orders to hide his identity and nationality in case he was captured alive (No Second Act for Briton, 2008). During Kasab's interrogation, he confessed that the attacks on Mumbai were conducted with the support of the Pakistan's Inter-Service Intelligence (ISI) (The Globe and Mail, 2011). Kasab was found guilty of 80 offenses including murder, waging war against India, possessing explosives and other related charges (Irani, 2010). Kasab was sentenced to death; the sentence was upheld by the Supreme Court of India and Kasab was executed on November 21, 2012 (Ajmal Kasab Hanged, 2012).

While the attack on Mumbai consisted of violence effected by terrorists using conventional firearms, grenades, and arson (use of fire both for distraction and media attention), the salient points were planning, preparation, and use of military style tactics. Furthermore, the dispersal of the attackers into separate teams indicated an effort to reduce and spread operational risk. The elimination of one team would not have prevented or halted the overall operation. Additionally, execution of simultaneous attacks was responsible for creating confusion and diffusing the focus of the responding security forces. The attackers displayed a sophisticated level of training, coordination, and stamina, firing in controlled, disciplined bursts. In the hotels and railways stations, the bullet holes revealed a pattern of shots fired in groups of three, aimed at the head level. With less experienced shooters, due to the difficulty of controlling an automatic weapon, patterns of bullet holes could be expected in the ceiling and floor. Evidence therefore indicated that the Mumbai attackers had received extensive practice for their assault. Besides the pattern of bullet holes, the number of casualties also revealed the preparation of the terrorist group (Kelly, 2009).

Failures at different levels lead to flawed prevention, and, when the attacks began, inadequate response to the attack. There were intelligence reports of this incident that indicated warnings were available to Indian authorities, although it is not clear just how actionable that intelligence was (Krondstadt, 2008). The United States intelligence agencies were reportedly among those warning Indian authorities of a potential attack

from the sea against hotels and business centers in Mumbai. Only a few hundred Intelligence Bureau officials are said to specialize in counterterrorism, a seemingly small number in a country of more than 1.1 billion people and the Indian Coast Guard employs less than 100 boats to patrol nearly 5,000 miles of shoreline (Kronstadt, 2008).

Indian police forces suffer from a dire lack of funding and training. Most of the police do not carry firearms and are armed with a stick. The weapons are old and obsolete, and little to no training is provided in weapon use or engaging the active shooters. Poor working conditions, archaic surveillance and communications equipment, and obsolete weapons further hinder their capacity. The federal and state governments in India have a distressingly low police-to-population ratio of about 125 per 100,000, little more than half of the United Nations recommended ratio for peacetime policing (Kronstadt, 2008).

Ten terrorists managed to kill or injure over 500 people. The 10 terrorists were experienced in working together as a unit. For example, they used hand signals to communicate across loud and crowded spaces. They were sufficiently disciplined to continue their attack over many hours. This had the effect of increasing the public's fear and keeping the incident in the news cycle for a longer period of time. The attackers focused on the most crowded public areas and centers of western and Jewish activity.

Part of the reason the Mumbai attackers were able to inflict severe casualties was because the local police did not engage them effectively. Police weapons were not sufficiently powerful or modern to deal with the multiple shooter assault in progress. The police were not trained for the type of conflict and tactics they were confronted with. It took more than 12 hours for Indian commandos to arrive from hundreds of miles away, while terrorist handlers continued to direct operations from outside the attack zone, using cell phones and other portable communications devices. This allowed the attackers the ability to adjust their tactics in the middle of their continuing assault (Kelly, 2009).

The Railway Protection Force personnel in Mumbai were armed with antiquated weapons and had no training to deal with a well-orchestrated terrorist attack. The terrorists killed 55 persons before slipping away and causing more casualties elsewhere

(Gera, 2010). The media coverage of the event created challenges for law enforcement since police tactics were being broadcasted to the terrorists in real time. The police lacked equipment for night operations, including flashlights or night vision goggles. Thus the police did not cut off the power to the hotel, allowing the suspects to see law enforcement tactics. Whether due to technological inability or poor planning, no efforts were made to disrupt cell phones and other communications of the terrorist teams by the police (Kelly, 2009).

Intelligence failure, inadequate counterterrorist training, and lack or obsolescence of the equipment, delays in the response of NSG commandos, flawed hostage-rescue plans, and poor strategic communications and information management, all contributed to a less-than-optimal response to Mumbai attackers. These gaps suggest the need for improved counterterrorist coordination between national-level and local security agencies and for strengthened counterterrorism capabilities, including equipment, training, and preparedness, on the part of first responders (Jenkins, 2009).

The Mumbai terrorist attacks used conventional tools for operation - guns and bombs; added to the mix were the willing attackers who were prepared to die to achieve their mission (Kydd, and Walter, 2006). The 12 coordinated attacks killed 172, including 6 Americans and wounded over 300 (Ramesh, et. al., 2008). The attacks sent a message to other potential targets of terrorism, reminding others of their own vulnerability to multiple active shooters (Bendetto, 2005).

H.   CONCLUSIONS

Case studies are a qualitative research approach giving the researcher the ability to explore an in depth analysis of specific events by gathering information using a variety of data collection procedures (Creswell, 2003). These cases systematically explore specific variables in an effort to provide a more complete understanding of the event and the relationship to the research. This chapter illustrated through the case studies how the descriptive functions of the cases involved contribute to our overall analysis. While active shooter incidents, specifically multiple active shooter incidents are rare events, law enforcement must has to plan and prepare to deal with these low-probability high-

consequence events diligently. The ability to keep a mindset essential for quick and effective response to such threats is only possible by effective and repetitive training for the first responders to: 1) respond to the location instantly, 2) form teams immediately to engage the active shooters, and, 3) rapidly move towards the threat to prevent additional casualties and to stop the threat.

While a planned attack using assault type weaponry may not be as deadly as mass bombings or multiple suicide attacks, this tactic has the potential to create long-drawn-out violent disruption in densely populated locales. Sustained long drawn out terrorist attacks, besides creating fear and chaos, can also impact a region's economy as the violence may deter people from regular commerce. The Washington, DC sniper incident indicated how a large population could be made to change its habits due to fear of random shootings. However, to predict this type of violence would be next to impossible, partly because as commonplace as these calamities seem, they are relatively rare crimes (Tanner, 2012).

While the single active shooter events demonstrate how perpetrators armed with commonly available firearms can kill a large number of victims in a short time, the sobering fact from such events is that none of the perpetrators, including the Virginia Tech shooter who killed 32 people, was a trained and dedicated terrorist. The casualty count is bound to be higher if the shooter is tactically trained and uses military style tactics to kill the maximum number of victims. However, the most grievous possibility for harm would arise from a Mumbai-type multiple shooter attack. One of the significant lessons learned from the Mumbai attacks is that a small number of well-trained determined terrorist attackers with a well thought out plan can cause major damage (McJunkin, 2009). In all active shooter cases, the need effective training to deal with such attacks was revealed. Additionally, police officers as first responders need to be equipped with upgraded weaponry to deal with terrorists as well as mentally disturbed active shooters.

IV. COMPARATIVE ANALYSIS OF THE LEVEL OF PREPAREDNESS OF SELECT LAW ENFORCEMENT AGENCIES

A. INTRODUCTION

It is anticipated that the city of Los Angeles will be the target of a terrorist act that could cause a high number of casualties or involve the use of victims as tools to gain notoriety or media attention (O'Sullivan, 2011). The Los Angeles Police Department has adopted the MACTAC concept to mitigate the severity of terrorist actions (LAPD, 2011). The MACTAC concept is a regional and national concept where law enforcement agencies may, by necessity, combine personnel or operations to assist the local jurisdiction responding to major attacks, including multiple shooter assaults (LAPD, 2011). As an expansion of Immediate Action Rapid Deployment (IARD) tactics, MACTAC concepts provide officers with additional tactics to use during a complex incident involving multiple locations and multiple shooters. It is important to evaluate and assess the policies of major metropolitan police agencies, specifically those agencies that patrol cities expected to be terrorist-targets, to determine what practices have been instituted to address multiple active shooter assault. An assessment of similarities and/or differences in policies, implementation of new tactics, and the frequency and quality of training provided to the patrol officers is essential to assess the readiness of the agencies.

B. POLICY OF THE LOS ANGELES POLICE DEPARTMENT

The Los Angeles Police Department's official policy related to single and multiple active shooters is taken from its Use of Force Directive, titled *Multi-Assault Counter Terrorism Action Capabilities (MACTAC), Use of Force-Tactics Directive* (June 2011):

> Immediate Action/Rapid Deployment is defined as, 'The swift and immediate deployment of law enforcement resources to ongoing, life threatening situations where delayed deployment could otherwise result in death or serious bodily injury to innocent persons.' (LAPD, 2003)

It is the intent of the LAPD to deploy swiftly and overwhelmingly to stop or interrupt the deadly actions of the assailants. The momentum of the assault can be significantly reduced within the first 30 minutes of the incident… (LAPD, 2011).

…In case an incident involving multiple shooters occurs within the jurisdiction of the LAPD, the policy of the LAPD is to dedicate all available resources for rapid response to the incident. All the available officers in such cases are mandated to discontinue minor and non-emergency police work. As is the case with any significant event or emergency, officers are expected to radio and inform the Communications Division and self-deploy to a multiple shooter incident, if that incident were to occur in their area of assignment or on the border of an adjacent area. The policy prohibits officers to not go out of their assigned divisions and areas of patrol in case the MACTAC incident is occurring beyond the border of an adjacent division. The principle behind prohibiting officers to deploy far from their patrol area is to prevent portions of the city from becoming defenseless and vulnerable to potential additional simultaneous attacks… (LAPD, 2011).

…Once a MACTAC event is identified, it is the mission of the LAPD to immediately respond to stop or interrupt the deadly actions of the perpetrators, establish on-scene command, gather and disseminate intelligence for situational awareness, establish perimeter control, and protect vital facilities. The first responding officers will quickly assess the situation, assemble into contact teams, announce to Communications Division what is occurring and act based on their assessment. In instances such as the murdering of innocent victims or the beginning of a hostage siege, contacts teams should disrupt the deadly actions of the perpetrators using the best available information. The LAPD recognizes the possibility that the situation may be chaotic and information may be limited. However, the LAPD officers must take action based on the best available information as hesitation may result in a missed opportunity to control momentum of the assault… (LAPD, 2011).

…Contact teams may be involved in assault, rescue, support or protection missions. Once sufficient assault teams are in place the incident commander may identify rescue, support or protection teams. In all assault situations, responding supervisors must quickly place their forces into effective positions to stop the hostile assailants and control the incident. During a multiple assault incident, the LAPD should avoid over-deploying its resources to a single incident as additional attacks will most likely take place at other locations throughout the City of Los Angeles. Over-deploying resources would delay response to a secondary attack and expose officers to unnecessary risks, making it necessary to carefully control the deployment of resources. The LAPD is responsible to identify

pre-designated rally points throughout the City where flex teams will be directed to respond. Unless the multiple assaults are taking place in the immediate area, flex teams will be directed to respond to a rally point, make ready for response to an incident and await instructions… (LAPD, 2011).

...Counter Terrorism and Criminal Intelligence Bureau (CTCIB), Communications Division and Real-Time Analysis and Critical Response Division (RACR) will monitor and analyze activities in the City of Los Angeles and region for multiple deadly force incidents that are occurring simultaneously, a terrorist attack involving explosives and or high powered weapons, or a hostage siege where the armed perpetrators have used deadly force or are preparing to use deadly force on other people and potentially have access to additional victims. When information indicates that a MACTAC response may be required in the City of Los Angeles or surrounding area, the RACR watch commander is responsible for notifying Communications Division, the command staff and other City management of the MACTAC alert… (LAPD, 2011).

…Once at scene of a MACTAC incident, officers are responsible for Assessing the situation; Announcing to Communications Division and responding personnel the nature of the incident; rapidly Assemble personnel in a safe location and configure into contact teams and respond; all officers, supervisors, and agency management must act in a coordinated effort to make contact with the attackers to restrict their ability to maneuver, deny avenues of escape and stop their deadly behavior. Contact teams, ideally made up of four officers, are to respond in a diamond formation to locate the assailant and stop the aggressive behavior. The positions in the diamond formation are the team leader, assistant team leader, designated cover officer and the general purpose officer. (LAPD, 2011).

While the policies provide a framework within which an organization may approach and resolve an issue or execute a response to a problem, policies alone do not explain or reflect the preparedness of an organization to deal with a low-probability, high-consequence event like multiple active shooter assault, especially an event that has not been yet faced by an organization. Thus, an attempt was made to get insight from the individuals responsible for LAPD's MACTAC training.

C.   INTERVIEWS WITH LOS ANGELES POLICE DEPARTMENT

Commander Richard Webb of the LAPD has been closely associated with the development of the LAPD's MACTAC training. Webb was interviewed to get his insight

regarding LAPD's preparation for multiple active shooter attacks. Lieutenant Michelle Richards is responsible for LAPD's tactical training. Captain Sean Malinowski provided information as the in-charge of the LAPD crime center. Captain Mike Overholser, Los Angeles Fire Department, provided information related to LAFD's multiple shooter response.

Webb believed that the LAPD was prepared for an active shooter scenario. Webb qualified his statement by adding that the LAPD could be better prepared (R. Webb, personal communication, July 13, 2012). The logistics of the training to prepare officers are based upon LAPD's size. The LAPD has approximately 10,000 sworn officers out of which at any given time, approximately 1,500 officers are either patrolling the streets or engaged in supporting roles such as detective functions, narcotics investigations, vice investigations, etc. (S. Malinowski, personal communication, July 11, 2012). The officers patrol a large area of approximately 456 square miles and provide services to approximately 5 million community members (S. Malinowski, personal communication, July 11, 2012).

The MACTAC training of the officers for multiple assaults, multiple location active shooter situations are based upon "scenario based training" (R. Webb, personal communication, July 13, 2012). The training teaches the responding officers to form into a "contact team" using a diamond-shaped configuration once four officers arrive at an active shooter incident. The contact team's function is to quickly move towards the threat, make "contact" with the threat, and stop the threat. The officers are also trained to immediately notify the Communications Division that they have an active shooter situation. The diamond-shaped configuration allows the officer in the front to lead with a rifle or shotgun towards the threat while the officer in the rear walks backwards looking for potential threats that could attack from behind. The two other officers in the configuration are trained to walk sideways to counter threats from left and right.

Richards described the first 30 minutes of the incident as critical to prevent high number of casualties. Therefore the contact team is trained to move toward the active shooter to engage the suspect(s) as rapidly as possible without losing the tactical edge and advantage. The LAPD teaches that the more time it takes to confront the active shooter,

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the more lives will be lost in the incident (M. Richards, personal communication, July 17, 2012). During active shooter incidents, in the city the size of Los Angeles with a high number of available patrol officers, it is anticipated that several officers would immediately respond to the incident. The MACTAC training teaches the additional arriving officers to form multiple contact teams if they are confronting multiple shooters).

Webb explained that it was important to instruct the officers that they should not self-deploy to an incident, unless the incident is occurring in their own beats. Webb noted that officers have a tendency to self-deploy and this may cause a disorganized response to a critical event where a disciplined and focused response is required. Therefore, to prevent self-deployment, the LAPD supervisors or Communications Division dispatchers are trained to redirect officers to a specific staging area from where they could be properly deployed in a controlled manner. The MACTAC training therefore involves LAPD supervisors and command staff and provides training in decision making for supervisors as team leaders.

All employees receive10 hours of training after graduation from the academy. Recruits in the academy are not given the MACTAC training (M. Richards, personal communication, July 17, 2012). After the initial MACTAC training, officers are sent to refresher training where they receive six hours of MACTAC and three hours Mobile Field Force tactics every other year (M. Richards, personal communication, July 17, 2012). The Los Angeles Police Department's training division has a goal of providing repeat training every other year once the officers have completed their initial MACTAC training. All the LAPD officers are expected to have received their basic MACTAC and Mobile Field Force training by the end of 2013 (M. Richards, personal communication, July 17, 2012). Richards believed that the LAPD training was adequate to address multiple active shooter scenarios; however, she added that if she had an unlimited budget for training, she would create a training program where all officers would receive training every six months. Furthermore, if she had access to more resources, Richards would ensure that all officers were equipped and trained with the urban assault rifle (M.

Richards, personal communication, July 17, 2012). Currently, only a select number of LAPD officers are equipped with rifles and most officers have not received training on how to use rifles.

Captain Mike Overholser from the Los Angeles Fire Department (LAFD) described that firefighters do receive training on how to respond to an active shooter incident. The firefighters train for triage situations to assist multiple victims injured during an active shooter incident. The Los Angeles Fire Department personnel receive 24 hours of continuing education annually related to fighting fires; within the 24-hour training, six hours are devoted to address triage situations (M. Overholser, personal communication, June 22, 2012). The Los Angeles Fire Department's average response time to any shooting or emergency situation is approximately seven minutes. The Los Angeles Fire Department trains their firefighters and paramedics to not enter the war or hot zone, until escorted by police officers. The hot zone is the zone that contains the active shooter and the warm zone would an area that the active shooter has been in, has left, but could very easily return. However, the LAFD personnel have not trained with the LAPD for such eventualities. There is a need for formalized and ongoing training for LAFD's paramedics to train with the police officers for a collaborative and concerted approach to entering a warm or hot zone to assist the injured victims (M. Overholser, personal communication, June 22, 2012).

Webb and Richards believed that LAPD officers needed training on combat medicine or advanced life support systems as well as better equipment, since officers are trained on a basic first aid and cardiopulmonary resuscitation (CPR) and have minimal equipment. Webb and Richards believed that if officers had training in combat medicine with the appropriate equipment they would be able to save lives of injured victims as they believe the LAFD would not enter in time to save many victims. Webb and Richards commented that providing medical training and equipment to the officers may save the lives of community members as well as of the officers. Richards believed that paramedics could be trained and armed to protect themselves as well as officers with medical combat training and equipment could save many lives.

D. **POLICY OF THE LAS VEGAS METROPOLITAN POLICE DEPARTMENT**

The Los Vegas Metropolitan Police Department's official policy related to single and multiple active shooters is taken from their *Multi Assault Counter Terrorism Action Capabilities*, *Operations Manual*:

> The Las Vegas Metropolitan Police Department's (LVMPD) vision is to be the safest community in America. The Las Vegas Metropolitan Police Department's MACTAC is a counter terrorism response concept that provides officers options based on tactical knowledge skills and abilities to respond to extreme violent incidents, which requires immediate police intervention. LVMPD uses MACTAC when they are confronted with a single or multiple deadly force incident or incidents that occur simultaneously or a terrorist attack involving improvised explosive devices (IED), high-powered weapons, hostage siege where the armed subjects have used deadly physical force or are preparing to use deadly force on other persons and is an on-going dynamic incident (LVMPD, 2011). The officers must have the mindset to be physically, mentally and tactically prepared and to have the ability to switch from crime fighter to war fighter back to crime fighter. The LVMPD response procedures include rally points to prevent officers from over convergence on one incident. LVMPD officers are trained in squad and team level response tactics to address active shooters and officer rescues as well as tactical movement formations and techniques. They practice and train in coordinated force contacts to mitigate active shooter, hostage, and/or siege scenarios in with their responding tactical teams. LVMPD's response includes a regional application whereby they are prepared to work with Federal, State, and local resources... (LVMPD, 2011).

> ...During any major incident, LVMPD resources must be maintained in the area command. Someone must pick up the slack. For that reason, squads will be identified as either "In the box" squads or "Stay at home" squads. Those assignments are made on a consistent designated rotational basis at all of the area commands. 'In the box' squads are pre-designated patrol squads utilized to affect a response to a major violent incident. Those squads are pre-identified and scheduled in advance. The "In the box" squad is assigned to respond to MACTAC incidents. Each area command will have one on-duty squad prepared to be an "In the box" squad, which will be annotated on the daily line up and could be broken down into strike or buddy teams. Officers are given policy against self-dispatching. A MACTAC squad is comprised of two or more strike teams and a squad leader. The squad leader has two or more team leaders to lead their respective teams, freeing up the sergeant to control the entire squad and to make critical decisions at the direct point where the incident is

occurring. MACTAC Strike Teams consist of four to five commissioned officers, which is similar to the current model employed by the United States Military Infantry Forces and are the base of the current LVMPD active shooter team. The strike team is designed to fight as a team and is a tactical element of the MACTAC squad and is self-contained giving the team the ability to act independently from the MACTAC squad. Additionally, strike teams must be broken down into two officer-buddy teams. The first strike team on scene is responsible for moving to neutralize the immediate threat to save lives. The other responsibilities of the strike teams are to rescue downed officers, contain the scene or force protection for fire or medical response teams. In addition the first arriving officer will be responsible for assessing the situation, announce the best intelligence they have over the radio, assemble teams and act to end the incident… (LVMPD, 2011).

E.   INTERVIEWS WITH THE LAS VEGAS METROLITAN POLICE DEPARTMENT

Sergeant Joel Martin, Las Vegas Metropolitan Police Department (LVMPD), is responsible for the training of LVMPD personnel and provided information related to active shooter training.   The Las Vegas Metropolitan Police Department has approximately 3,500 sworn officers, with anywhere between 500 to 800 on duty at one time, patrolling an area of 131 square miles. Las Vegas has a population of 600,000 citizens; however, Las Vegas gets millions of visitors, with over 38 million tourists and guests visiting in 2011 (J. Martin, personal communication, November 14, 2012). The LVMPD provides their officers with active shooter training that includes a multiple assault scenario.

Martin believed that the LVMPD was prepared for a MACTAC event in Las Vegas (J. Martin, personal communication, November 14, 2012). While the LVMPD may not be able to stop a Mumbai-type attack from occurring, they are prepared to respond and confront the shooters in this type of scenario. Martin believed that with the densely populated casinos, it would be vital for LVMPD officers to arrive and confront the suspect to stop their killing spree as quickly as possible. Due to the amount of training LVMPD personnel are provided, coupled with the impromptu field scenarios officers are put through, Martin anticipated that officers could arrive to an active shooter scene in about four minutes. Martin was unsure how many victims might be dead or

injured in an active shooter incident within those four minutes, but believed that the anticipated LVMPD response time was rapid and effective enough to address the situation and keep the killings to a minimum (J. Martin, personal communication, November 14, 2012).

Martin's belief that the LVMPD is adequately prepared to respond to active shooter assaults is based upon the training provided to the officers and the field tests conducted to test officer preparation. The training unit, as well as LVMPD supervisors, are responsible for putting officers through spontaneous tests by calling them to a location and field-testing their response to various active shooter scenarios. The officers are put through these tests on a quarterly basis and their responses are evaluated. The Las Vegas Metropolitan Police Department has at times used vacant hotels to provide MACTAC training to its personnel. The Las Vegas Metropolitan Police Department officers train with the agencies that border Las Vegas such as Clark County Sheriff Department and Henderson Police Department. Furthermore, the officers also train with the Clark County Fire Department. Martin believed that if a multiple active shooter attack were to occur in the City of Las Vegas, the Las Vegas Metropolitan Police Department would need assistance from the neighboring agencies, therefore it was important to have joint training exercises. The training with the other agencies consists of MACTAC training and escorting the fire department personnel during active shooter incidents (J. Martin, personal communication, November 14, 2012).

The Las Vegas Metropolitan Police Department recruit officers get 20 hours of MACTAC training during the academy. The sworn employees are provided a two-day course in MACTAC concepts, policies and tactics every year. The Las Vegas Metropolitan Police Department provides also trains the officers informally during roll calls to refresh their knowledge of what is expected of them during multiple active shooter incidents. The Las Vegas Metropolitan Police Department MACTAC training also teaches about the psychological aspects of major violent incidents.

The Las Vegas Metropolitan Police Department officers are taught that the first team arriving at an active shooter incident is responsible to confront the assailant and stop his actions. The responsibility of the second team is to assist the first team and to set up

containment of the active shooter(s) to limit their movement. Additional available teams are responsible for providing protection to the fire department personnel and paramedics so that expeditious rendering of medical assistance to victims could begin, which would further assist in potentially reducing the casualty count. The Las Vegas Metropolitan Police Department officers are provided with advanced life support training and often train with the fire department; however, the officers are not provided with advance life support equipment. Most of the LVMPD officers have purchased that equipment with their own funds in case they encounter multiple active shooters and victims and the officers are unable to get the paramedics in to assist the victims as quickly as possible. Since the LVMPD officers train with their fire department, the fire department response time is expected to be four minutes. The fire department policy allows their paramedics to go into the warm zone (J. Martin, personal communication, November 14, 2012).

If Martin had access to additional funds, he would like to train the LVMPD officers bimonthly in MACTAC tactics. Martin believed that the LVMPD was very well prepared to respond to an active shooter incident; however, more training would save more lives. If additional funds were available, Martin would like to equip each LVMPD police officer with urban assault rifles and equipment for advanced life support.

F.   POLICY OF CHICAGO POLICE DEPARTMENT

The Chicago Police Department's official policy related to single and multiple active shooters was taken from Chicago Training Directive, 2008.

> …The Chicago Police Department's (CPD) policy regarding active shooters is that their department will respond immediately; assess and contain the situation; ensure that any further threat is neutralized; that they protect the lives of victims threatened by the assailants; and secure the medical aid for the injured (Chicago Police Department,2008). The Chicago Police Department Active Shooter Incident Plan (ASIP) is designed to be utilized universally in response to any violent incident where an armed assailant continues to present a threat to the safety of community members, requiring rapid deployment instead of containment and negotiation (Chicago Police Department, 2008). The Chicago Police Department's initial responsibility, when responding to an active shooter incident, is to mitigate the violence and neutralize the threat. Sworn members of CPD are instructed to not unreasonably endanger themselves or another person to conform to CPD's directives. Officers who arrive at the scene of an active

shooter incident first, regardless of rank, are responsible for verification that an active shooter incident indeed is taking place. That officer(s) is required to request assistance through the Office of Emergency Management and Communications (OEMC) and obtain all relevant information regarding the ongoing incident, including the location of the incident, suspect description and actions, and types of weapons used. The first responding officers must immediately communicate that information to additional officers who are arriving to assist. As soon as possible, officer must immediately, upon the arrival of the first assisting unites, form a contact strike team, enter the location of the incident, search for the active shooters, isolate them, and stop their actions. These actions are warranted immediately upon officer arrival to stop further violence and prevent more casualties. When the teams of officers, who are moving in the direction of the assailants, discover wounded people, the information is to be relayed to OEMC. This is to prevent slowing down of the teams searching for the assailants and digressing from their mission of stopping the threat… (Chicago Police Department, 2008).

G.   INTERVIEWS WITH CHICAGO POLICE DEPARTMENT

Lieutenant Mark Marianovick, assigned to CPD's SWAT team provided information about his agency's MACTAC training. Chicago covers an area of 228 square miles with a population of 2.7 million. The Chicago Police Department has approximately 11,500 sworn officers out of which about 1,500 are on duty at any given time (M. Marianovick, personal communication, August 3, 2012). The Chicago Police Department has an active shooter training course that it offers to SWAT and patrol officers. Marianovick believed that the CPD was prepared to address active shooter, including multiple location multiple active shooter incidents. While the CPD could not stop a Mumbai style attack from occurring, it was prepared to respond effectively once an incident occurred.

Marianovick averred that the CPD's training, Active Shooter Incident Plan (ASIP), had prepared the officers to respond to a Mumbai-type incident. The Chicago Police Department's ASIP covers various aspects of addressing an active shooting incident. These include training the officers to prepare staging areas to various tactical aspects that teach the officers to approach and respond to the threat. The Chicago Police Department's SWAT team provides the training to their first responders in ASIP tactics. Additionally, the officers are also trained in rescue maneuvers to evacuate injured officers and victims (M. Marianovick, personal communication, August 3, 2012).

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Besides receiving training to address active shooter threat, the CPD officers also train to respond to casualty collection points, hostage holding areas, and offender holding areas. The Chicago Police Department officers are trained to establish four to five person teams and trained to move as a team. Each team has a team leader who responsible for managing his/her specific team. The Chicago Police Department's ASIP training also deals with command and control of the incident, setting up of a functioning tactical operation center, as well as a negotiation center. Police officers receive 16 hours of ASIP training in the academy as well as 8 hours of in-service training every other year. The Chicago Police Department SWAT team receives approximately 176 hours of active shooter training a year. However, the CPD's command staff is not required to take the active shooter training courses (M. Marianovick, personal communication, August 3, 201212).

Marianovick believed that the training received by the CPD officers to respond to active shooter incidents was adequate but could be better since tactics are a perishable skill and must be reinforced regularly. If Marianovick had access to more funding, he would prefer to train the officers more regularly, on a quarterly basis (M. Marianovick, personal communication, August 3, 2012).

To prevent a disorganized response to an active shooter incident, the CPD dispatchers and supervisors are responsible to prevent officers from self-deploying or over-deploying during an incident (M. Marianovick, personal communication, August 3, 201212).

The Chicago Police Department's SWAT officers are trained in advanced life support and have access to advanced life support equipment; however, the patrol officers are neither trained in advanced life support nor have access to advanced life support equipment. The Chicago Police Department's SWAT team trains with the fire department and paramedics and has certified five of its officers as emergency medical technicians and paramedics. The Chicago Police Department's SWAT team would provide protection to fire department paramedics to enable them to start treating the

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injured. The Chicago Police Department has a mutual aid agreement with other agencies within the State of Illinois for major events and has trained with other agencies for active shooter incidents.

H. POLICY OF NEW YORK POLICE DEPARTMENT

The New York Police Department (NYPD) did not provide any documentation or copies of their active shooter policies.

I. INTERVIEW WITH NEW YORK POLICE DEPARTMENT

The information related to the NYPD's response to an active shooter incident was provided by a Lieutenant assigned to their Emergency Services Division. New York City is spread over 302 square miles with a population of over 8.2 million. The New York Police Department employs approximately 27,000 sworn officers. The New York Police Department trains its patrol officers to respond to multiple and single active shooter attacks. The New York Police Department teaches a three-day course related to active-shooter response which is a requirement for all the officers. The officers are trained to confront the terrorist or active shooter as quickly as possible through a critical incident response team. The New York Police Department officers are trained to quickly assemble into four- or five-person teams as they arrive at an active shooter incident. The New York Police Department anticipates that due to the large number of officers, its response to an active shooter incident would be rapid. The officers are trained to ignore the victims and instead address the assault, in order to stop the continuing threat to the life of additional potential victims. The New York Police Department command staff receives in-classroom type training for active shooters incidents. The New York Police Department command staff attends seminars dealing with different active shooter incidents, like the Mumbai incident. The Emergency Services Division lieutenant believes that NYPD's training had made the officers "really well prepared"; however, they could be better prepared. If the NYPD had access to more funding, the training frequency would be changed to once every six months. Furthermore, additional funding could be used to equip all the officers with urban assault rifles.

The New York Police Department officers receive basic first aid training but not the basic or advanced life support systems training. The New York Police Department officers carry first aid medical equipment. Additionally, the NYPD has 400 response vehicles that carry equipment for basic life support systems. Similar to the other agencies surveyed, the New York Fire Department (FDNY), though it would respond quickly to an active shooter scenario, would not go into a warm zone until force protection is provided. Tactical paramedics assigned to the SWAT team are trained to go into a warm zone with the SWAT team to treat injured officers. However, the NYPD does not train with FDNY for active shooter response. The New York Police Department engages in limited training with other agencies and the agency representative believed that the NYPD would be able to handle any active shooter scenario without assistance from other agencies.

J.   CONCLUSION

Agency representatives from all the police departments believed that their officers were very well prepared to respond to potential active shooter incidents within their jurisdictions. There was a uniformity of response amongst these large metropolitan police department representatives that their agency policies and potential response to active shooter incidents had improved through the years. At the same time, there was a universal assessment that there was room for improvement in frequency of training. All the agency representative were concerned regarding funding. They consistently shared the belief that funding to respond to acts of terrorism had become scarce, limiting the agency's ability to provide sufficient training or to purchase required or better equipment, including rifles.

Availability of additional funding for anti-terrorist response or multiple shooter response was deemed essential for improving agency response. Similarly, funding was needed for better equipping the officers, most of whom were forced to purchase rifles from personal funds.

While the agency representatives recognized that a terrorist attack or multiple shooter assault may not be preventable, they insisted that their agencies were prepared to respond rapidly and effectively once such an attack began. The quickest potential

response time to an active shooter incident was estimated to be approximately four minutes by the LVMPD. However, as single active shooter incidents within United States, for example the Aurora, Colorado incident, have demonstrated, dozens of people can be killed and wounded in minutes by a single active shooter. The implication is that in an event where multiple locations within a densely populated municipal area were to be attacked by teams of well-armed and determined suicidal terrorists, the number of casualties could be unacceptably high. Considering the high casualty numbers in Aurora, Colorado incident during the first few minutes, the emphasis placed on the first 30 minutes of an active shooter attack by Los Angeles appears excessively long.

Furthermore, it is instructive that while active shooters may be armed with high-powered firearms and have ample ammunition, majority of the police officers in the agencies surveyed are not equipped with rifles that are an essential tool to accurately and efficiently deal with an assailant from a distance where a sidearm might not be effective.

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V.   ANALYSIS

A.   INTRODUCTION

Law enforcement agencies in the United States have gained significant amount of knowledge from the past active shooter incidents (Borsch, 2007; Chudwin, 2011; Cullen, 2009; Nichols, 2012; Rosegrant, 2004; Virginia Tech Review Panel Report, 2007). However, law enforcement tactics must continue to evolve and learn from these critical events.

The accumulated evidence so far is quite clear that law enforcement personnel must be prepared to engage these assailants rapidly and effectively, lest the terrorist attacks or single active shooters cause a significant loss of life in short period of time. One way to prepare for low probability high consequence incidents is to analyze similar past events to identify patterns inherent in active shooter incidents, along with identifying the mistakes that were made (Blythe, 2007; Borelli, 2004; Borsch, 2007; Brown, 2012; Cullen, 2009; Duraphe, 2009). By gaining a better understanding of these events, and by learning from tactical deficiencies and mistakes of the past, the likelihood of repeating same mistakes and suffering consequences of those mistakes should be lessened.

The events in Mumbai and Beslan demonstrated the challenges faced by law enforcement when terrorist attacks are well organized and launched by trained and dedicated assailants. While it is almost impossible to completely stop every active shooter scenario with zero casualties, speedy and effective law enforcement response becomes critical in reducing the number of fatalities and injuries. As demonstrated by the analysis of specific events in this thesis, active shooters are capable of causing multiple casualties within minutes and seconds of launching their attack. It is axiomatic that the longer the shooter has access to victims and his weaponry, the event would have higher number of casualties. It is extremely critical to confront the assailant as quickly as possible. The analysis of policies of four major metropolitan police agencies indicates that that law enforcement agencies have focused their efforts to incorporate lessons learned from active shooter incidents into their policies. However, it is also apparent,

especially if the analysis is inductively applicable to the current status of other police agencies, that gap in preparedness exist and law enforcement organizations still have room for improvement.

B. COMMUNICATION

The Mumbai and Beslan incidents were carried by multiple terrorists who were well-versed in use of their weaponry, had a well-defined plan and a mission, were well-trained, equipped, and were determined to carry on their mission unto death. In both the incidents, the attackers had the upper hand through the use of effective communication (Murphy, 2005; New York Police Department, 2008; Prodhan and Balachandran, 2009; Rabasa et al., 2009; United States Department of State, 2005). Communications is a major component for law enforcement response in every actively ongoing and evolving incident. However, in a large, chaotic active shooter incident, effective and controlled communication becomes of paramount importance (Cullen, 2009). In Columbine massacre, over 900 officers responded from 36 different agencies. These officers did not have the radio interoperability to communicate with each other. Additionally, they were unable to engage in face-to-face communication, due to logistical difficulties and the shrieking alarms. The inability to obtain current information and to disseminate the information effectively in real time resulted in a situation where officers were unaware of critical information such as location of officer deployment and operations in progress—which could have resulted in a cross fire situation. The situation in Beslan reflected a failure of communications at the most rudimentary equipment level since the school security officer did not even have a radio to broadcast the unfolding event. In the North Hollywood bank robbery and shootout, non-verbal communication was effectively employed by the LAPD SWAT team; also contributing to the SWAT communication was the fact that the team members regularly trained together for challenging scenarios (Los Angeles Police Department, 1997a; Los Angeles Police Department, 1997b). While it might sound redundant, it is a fact that the inability to effectively communicate during complex large scale chaotic situations compounds an already dangerous situation. At a minimum, the lack of effective communication between the responding officers delays law enforcement response.

C.   COMMAND AND CONTROL

It is axiomatic that large scale rapidly evolving events, such as those mentioned earlier, can be extremely chaotic and overwhelming and thus require rapid initiation of command and control measures to streamline operations. In the Mumbai and Beslan incidents there was a tremendous amount of confusion (High Level Enquire Committee, 2008; Kelly, 2009; Kronstadt, 2008; O'Rourke, 2010; Soldatov & Borogan, 2005; United States Department of State, 2005). Consequently, the multi-agency response, involving the local, provincial, and federal agencies, was not well coordinated and therefore a focused attack on the problem was delayed, resulting in avoidable casualties (Kronstadt, 2008; Rabasa et al., 2009; United States Department of State, 2005). Similarly, despite the response of an overwhelming number of first responders to the incident location in the Columbine incident, a lack of uniform communication protocol between various agencies resulted in confusion and ineffective response, although this lack of communication was not as deficient as in Beslan and Mumbai.. While the North Hollywood bank robbery and shootout ended well, there was a lack of command and control at the scene, creating dangerous situations such as cross fire during this incident (Coffin, 2007). These incidents illustrated the need to have a coordinated effort in their response, which makes it imperative for one person to declare that they are in charge (Moody, 2009).

The agencies interviewed, with the exception of LVMPD, suffer from interoperability issues and are also unable to communicate with other agencies or their respective fire departments. The city of Los Angeles was in the process of contract negotiations to enhance interoperability while the others still had no method of communication with outside agencies. However, interoperability is assisted by all the interviewed agencies practicing the Incident Command System (ICS) in their response to complex events, which assists with the controlling and managing large-scale operations.

The interviewed agencies have policies against self-deployment by police officers, unless the incident were to occur in their assigned beats; however, all the agencies shared a concern that officers would nevertheless self-deploy, rather than responding to a rally point, unless specifically ordered to that rally point. In Los Angeles,

the propensity of police officers to self-deploy during major incidents has been recognized as one of the gaps in preparedness for Los Angeles. The ability of the Communications Division dispatchers to prevent officers from self-deploying is hampered as the dispatchers do not have the means to see the geographical location of police units (personal observation). This deficiency could be removed by utilization of Global Positioning Systems (GPS) in police vehicles.

D.   TRAINING

The tactical nature of policing operations requires training and repetition of training (Connolly, 2008). The dynamics of the threats faced by societies have changed. The changing face of terrorism, which has evolved from bombings and airplane hijacking to utilization of aircrafts as mobile bombs and use of advanced tactics such as multiple assaults by trained assailants necessitates an adjustment in police response and training. The importance of appropriate and adequate training cannot be stressed enough. Tactics are perishable skills and must be reinforced with constant practice. Complex and challenging incidents such as multiple active shooter assaults require even more preparation as officers don't encounter them regularly (Haberfeld, Clarke, & Sheehan, 2012). Consistent and regular training and preparation alone would be the key ingredient to a successful outcome in a multiple active shooter incident. In all the incidents analyzed, Mumbai, Beslan, Columbine and to some degree North Hollywood, proper training would have heavily influenced the outcome.

In Los Angeles, LAPD provides biannual training in MACTAC tactics to its officers and command staff. The New York Police Department provides a three-day course that covers active shooters; however, no subsequent follow up training is provided. Furthermore, there is no mandatory training for the NYPD's command staff and its participation in active shooter training is on a volunteer basis. The Chicago Police Department provides in-service training for active shooter scenarios to its officers every other year but no specific active shooter training is provided to the command staff. The Las Vegas Municipal Police Department provides active shooter training in police academy and then provides updates to officers as in-service training. The Las Vegas

Municipal Police Department conducts field testing of the officers, which has the benefit of reinforcing the tactics and training. However, no training is offered to the LVMPD command staff.

It is vital for a successful response to have a strong leader able to control and coordinate the resources that will converge on a scene of this nature. While equipping and preparing the filed personnel to respond to active shooter incidents, training for the command staff of police agencies is equally important. Absent experience in dealing with a unique, complex, and chaotic event, the confidence and capability required to control multiple shooter active assault can only come through training (Haberfeld & Hassell, 2007). Representatives of all the agencies interviewed believed that more training would enhance their active shooter response. Since the resources of each agency vary, every law enforcement agency must offer its own version of MACTAC or Immediate Action Rapid Deployment training to officers in and the command personnel. Furthermore, training of the police managers is critical since command and control of a large-scale dynamic evolving event places great requirements on the managers. Therefore leadership training should be mandated for every agency. Not surprisingly, agency representatives uniformly believed that additional training would be beneficial to their active shooter response.

E.   MEDICAL ISSUES

While a rapid response to and stopping an active shooter threat is critical to reducing casualties, it is equally important that the emergency medical services (EMS) personnel are prepared for such events. In both the Mumbai and Beslan incidents, the fire services and EMS personnel were completely unprepared to deal with the large scale event and adjust their response to the enormity of the incidents (Kronstadt, 2008; United States Department of State, 2005). Since the policies of EMS and fire agencies prevent their personnel from entering an active police operation zone, in an active shooter scenario, it may lead to fatalities where rescue or providing medical treatment to an injured victim could save lives. For example, in the North Hollywood bank robbery and shootout, one of the suspects, Matasareanu, bled to death as the officers were searching

for possible additional suspect and the EMS personnel could not enter the warm zone. If officers were trained in providing basic emergency medical treatment, they might have been able to save Matasareanu's life.

Of the agencies studied, only the LVMPD officers train with their local EMS personnel. None of the agencies provide the officers proper equipment for advanced life support, nor are they trained to apply advanced life support measures. The agencies uniformly train their officers to pursue the active shooter, even in the event of an officer getting shot and injured. Since this hot zone prevents approach of the EMS personnel, training and equipping the police officers could save the life of the injured officer.

The Newton, Connecticut active shooter incident, like others, highlighted the fact that initial response by the EMS is severely handicapped due to the active ongoing police operational response (Mary, 2013). Lessons from Beslan and Mumbai revealed that hospitals and emergency rooms can be overwhelmed and are not prepared to handle a multiple active shooter type scenario. If Los Angeles or any other major metropolitan area were to have a multiple attack from multiple suspects similar to the terrorists' attacks in Mumbai, India, the multiple casualty incident would most likely overwhelm the hospitals (McElwee, 2012). The potential inability to handle the scope and magnitude of a mass casualty incident resulting from multiple active shooting incident could possibly be mitigated by training and equipping police officers in advanced trauma life support.

F.   CONCLUSION

The analysis indicates that while law enforcement agencies in question have implemented active shooter training and have focused on the emerging threat, the magnitude and quantity of training offered could certainly be enhanced. Police agencies in US have yet to face a Mumbai-type multiple active shooter assault and thus the quality and quantity of training offered to the responding personnel remains to be tested. However, lessons learned from the previous incidents raise significant concerns, especially when the number of casualties resulting from single active shooter incidents in the United States is taken into account. It is imperative that law enforcement agencies dynamically review and calibrate their training based upon the lessons learned and

prepare their personnel not only to respond to a major assault similar to the ones in Mumbai and Beslan but also improve communication protocols and interoperability. Additionally, preparation of officers in medical triage might assist in saving lives of the officers in hot zones who cannot be approached by the EMS personnel.

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VI. RECOMMENDATIONS/CONCLUSION

A. INTRODUCTION

This thesis focused on potential steps taken by four major metropolitan law enforcement agencies in response to terrorist attacks equivalent to the attacks in Mumbai. The research attempted to answer if there was any uniformity and consistency in tactics implemented by the select agencies. An attempt was made to determine the perceived level of confidence as related to implemented strategies to combat a Mumbai-type attack. Additionally, ancillary question focused on steps required to potentiate the MACTAC tactics to deal with Mumbai-type attacks

The law enforcement agencies analyzed in this thesis have all responded to active shooter incidents and have implemented policy changes and instituted training to respond to potential multiple active shooter incidents. All had created some form of a MACTAC immediate response. The response protocol was similar and consisted of formation of four to five-members teams to confront and engage active shooters. While the agencies may have used different terms for their potential response, there was uniformity and consistency in their tactics. All the agency representatives expressed confidence in their ability to respond to a multiple active shooter incident. Recommendations follow to enhance law enforcement response against a Mumbai style attack.

B. RECOMMENDATIONS

1. Training

The need for responding to potential multiple active shooter assaults in their jurisdictions has created heavy new responsibility for local law enforcement agencies and added to the increasing workload of busy police agencies. The only practical way to take on this responsibility in an effective manner, with a focus on mitigating loss to human life, is via training. Therefore, this thesis unequivocally recommends practical and repetitive active shooter training for the first responding law enforcement personnel. This recommendation would be applicable primarily to the local police agencies as their personnel would respond and engage the primary threat within minutes of initiation of the

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assault. It is axiomatic that the responding police officers will have to fall back upon their training to effectively engage and stop a multiple active shooter assault threat—since no police agency has faced such an eventuality in recent history.

The training must include field engagement scenarios as well as table-top exercises. The frequency of training must be commensurate with the perishability of tactics that are rarely utilized in the field. Field testing and table-top exercises to test the competence and preparedness of police officers are critical for a low probability high consequence event such as multiple active shooter assault. Additionally, police training should incorporate the concept of interoperability (Frazzano, 2010; Haberfeld and Hassell, 2007). The training should consist of joint-operational exercises including all neighboring agencies within a region. It is also critical that the training be provided, besides the first responding officers, to the managers and executives of the agency. Any large scale attack or a complex incident would require leadership and a solid command and control of the event; therefore the leaders of police organizations also need to be trained. It is also essential that the training must begin at the police academy level and continue during the careers of police officers and managers.

2. Communications

There still exists a critical need for increasing communication interoperability between different agencies. The first responding agencies, including the police, fire department, and EMS, need a common communication platform to ensure an integrated response to active shooter incidents. Additionally, in a large scale event, when several neighboring agencies would respond to provide mutual aid, the issue of a common communication platform gain further significance. First responding agencies must be provided with radio equipment that would allow interoperability and the ability to communicate with other agencies throughout the region. Effective communication invariably assists with a coordinated response of resources responding from different agencies to an unfolding event. Inability to communicate directly impacts safety of the responding personnel, including creation of cross fire situations, interferes with proper

deployment of resources, and results in a lack of situational awareness—which is critical during a dangerous and dynamic active shooter event.

As the North Hollywood robbery and shootout demonstrated, large number of police officers respond and converge on an ongoing violent incident requiring additional resources. The problem of self-deployment would obviously be more critical in larger jurisdictions as hundreds of officers would respond to an ongoing active shooter assault. Besides causing a chaotic situation, self-deployment would also deplete the pool of available officers who might be needed to respond to different venues where multiple active shooting assaults are occurring. While it is a natural human propensity to rush in to help, an uncoordinated response instead results in chaos and ineffectual deployment. While police agencies may already have policies against self-deployment by officers, they are difficult to enforce. To prevent disorderly response and self-deployment, all law enforcement vehicles need to be equipped with global positioning systems. Additionally, emergency dispatch operators must be equipped with abilities to monitor police officer positioning in real time.

3.   Equipment

It is unconscionable that the majority of the police officers in agencies studied do not receive training to use police rifles.   North Hollywood incident revealed the inefficacy of battling suspects shooting rifles with pistols. To not allow first responders access to similar, if not higher firepower, compared to terrorists is equivalent to allowing the terrorists and active shooters more time to operate while awaiting the few officers equipped with rifles to arrive at scene. All officers must be trained and receive a police rifle as regular part of their equipment. When an active shooter incident occurs and the suspect is armed with an assault rifle, the responding patrol officers would not only be ineffective in stopping that threat if they are armed with a handgun, they would be endangered.   As the Mumbai attack revealed, inadequately equipped officers are no match for assailants carrying rifles.

Due to the dynamic nature of policing, police officers have been increasingly burdened with more and more responsibilities. The available literature reveals a general

consensus that in recent years, most police organizations have increasingly adopted antiterrorism efforts as their new responsibility (Pelfrey, 2007, 2009). However, there does exist a need for police officers to receive training in emergency medical services in case of mass casualty incidents where the medical personnel would be unable to enter hot zones while law enforcement personnel engage multiple assailants. Thus police officers should receive training in advanced life trauma support and be equipped with requisite equipment. Getting paramedics into a scene of an active shooter could take significantly long time while the officers render an area safe. Officers trained and equipped to provide initial trauma treatment can save lives, especially of their own colleagues injured in the gunfight.

Emergency management service personnel and paramedics need to be trained with police officers and create joint teams where first responding resources are prepared both for engaging and neutralizing threats as well as providing life-sustaining treatment to the injured. Training and equipping paramedics with firearms should be considered a tactic that would prove efficacious during multiple active shooter incidents. Target rich locations such as schools, malls, theaters, stadia, and public places should be equipped with violence alarm button, similar to those placed in banks, directly connected to emergency dispatch services, to alert police when confronted with an active shooter. Sending an alarm directly to emergency dispatch operators would eliminate the need to call 9-1-1 and save precious time.

4.   Unmanned Aerial Vehicles

It is recommended that the law enforcement, as a tactical response to deal with a multiple active shooter assaults, deploy Unmanned Aerial Vehicles (UAV), also commonly referred to as drones. While large municipal police agencies deploy helicopters to assist police officers, in a multiple active shooter event, spread over several locations, there might not be enough helicopters and trained personnel available to provide the eagle's eye view and updates to the officers. Drones are significantly cheaper to procure and operate compared to helicopters and eliminate the risk to the flight officers and navigators. In congested urban environments, drones could reach the incident

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location much more rapidly compared to the responding officers. While it is controversial to employ drones for launching attacks or missiles on potential terrorist suspects abroad, the special circumstances of multiple active shooter incidents should be considered exceptional circumstances to engage terrorists bent upon creating mass casualties and terrorizing the populations. In such scenarios, deploying drones would keep law enforcement and the first responders safer while immediately engaging the suspects.

Drones have been utilized for surveillance and reconnaissance by the military for decades. Recently, especially post-September 11, 2001, UAVs have been utilized extensively in the battlefield (Iraq) and for counterterrorism missions in Afghanistan and Pakistan (Tierney, 2010). The utilization of UAVs for homeland security (HLS) missions in the international arena has been considered successful by the current United States administration. As drone attacks have intensified, militants have become suspicious of each other, which has helped reduce terrorist activities (Mayer, 2009). The United States administration has claimed that drone strikes in Pakistan have been effective at elimination of al Qaeda and Taliban leadership (Roggio & Mayer, 2010)..

The UAVs are controlled either autonomously by computers in the aircraft or by a remote control navigator or pilot on the ground or in another vehicle. While drones are predominately deployed by the military or CIA, there is a small but growing number of civilian application. Drones have been used as a firefighting tool, for border patrol, and for search and rescue of people lost in the wilderness or rugged terrain where it would be too difficult to find people. Aerial surveillance of large areas is made possible with low cost UAV systems and they are a powerful surveillance tools capable of carrying facial recognition systems, automated license plate scanners, thermal imaging cameras, open Wi-Fi and other sensors.

Law enforcement has recently begun to utilize UAV systems for surveillance. The Alameda County Sheriff, Greg Ahern, deployed UAV with live video feed capabilities and infrared devices to obtain a birds-eye view that officers on the ground are incapable of getting (Chuang, 2012). This enhances safety of the officers as they are able to view the suspect, what the suspect might be carrying, and the avenues of escape for the

suspect. Ahern suggests that the UAVs could be used during emergencies, from high speed pursuits to search and rescue operations in disasters as well as proactive measures like finding marijuana grows in fields on public lands and in residential neighborhoods (Chuang, 2012).

Drones come in all sizes and therefore can be deployed flexibly. An UAV could be created big enough to carry a payload with laser sights to engage a suspect. On the other hand, bird-sized drones could be utilized in a school active shooter situation by flying them through doorways and windows. The laser sights on drones would enhance the accuracy of the weapons to shoot the active shooter while avoiding striking an innocent victims or hostage. Furthermore, to prevent injuries to victims, UAVs could be equipped with incapacitating gas or pepper spray to neutralize an active shooter while avoiding any injury to victims in the area. Police deployment of drones could also assist in tracking where the victims and suspects are located and thereby enhance the safe and rapid response of police officers and EMS personnel. Live video feed by the drones in active shooting incidents would also allow the EMS personnel to determine where the shooters are located and extricate the victims from cold zone safely.

Drones can provide highly specific intelligence and clear situational awareness of the imminent threat. Stealth technologies can be and are easily adapted to UAVs (Nurkin & Drewry, 2004). Drones are considerably less expensive, more expendable than police helicopters, easier to assemble and launch, and their technical capabilities continue to improve. Agile aerial robots are one meter in length and weigh only a couple of pounds (Kumar, 2012). These autonomous agile aerial robots are related to UAVs and can fly through windows into buildings and provide video streams. Additionally, they can detect biochemical hazards as well as radiation. They can be equipped with motion sensors, cameras and laser scanners (Kumar, 2012).

Proactive endeavors for success in wicked problems of terrorism prevention and response must rely on forward thinking approach. Use of certain technology in certain arenas might be controversial, but it does not make other applications of the same technology in different specific arenas useful. For the law enforcement to engage multiple assaults at multiple locations, similar or more difficult than the Mumbai terrorist

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attacks, use of drones would be more efficacious than relying on ground engagement alone and likely result in reduction of casualties and early resolution of the incident.

C. CONCLUSION

Even though Mumbai and Beslan incidents occurred in other countries, the probability of the United States experiencing a similar military style attack remains a serious concern. Local law enforcement personnel, as the first responders, would bear the brunt of any such attack and must prepare for and be in a state of readiness. A deficient response to a multiple shooter assault would increase the casualty count to an unacceptable and tragic level. While a low probability, high consequence incident such as a Mumbai style attack might be difficult to prevent, local law enforcement, especially the first-responding patrol officers need to be physically and mentally prepared for it. The frequency and quality of the officer training, suitable tactics, ability to communicate, visualization of the ongoing event, and proper equipment will determine how successful the first responding officers are in quick resolution of the incident. The many single shooter attacks in the United States have proven beyond any shadow of the doubt that the assailants can reach a high casualty count in very short time, revealing the necessity of confronting the active shooters rapidly. The research in this thesis reveals the need for standardized and frequent training for law enforcement, enhancing interoperability, especially the modes of communication among neighboring law enforcement agencies, as well as use of UAV's to address potential multiple active shooter attacks rapidly, effectively, and efficiently.

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