

Running Head: CFD Operations at ASI's

Charlotte Fire Department Responses to Active Shooter Incidents- A Critical Analysis

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

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Abstract

This descriptive research project deals with identifying how the Charlotte Fire Department (CFD) can take an active role on the tactical level in the mitigation of active shooter incidents (ASI's). The CFD has no plan in place that allows it to take an active role in tactical operations conducted during ASI's. The purpose of this research is to identify what other departments are doing in response to ASI's as well as what tactical operations could be conducted without assuming an unacceptable level of risk. This was done by answering four research questions. What are other fire departments doing in response to ASI's? What is the Charlotte Mecklenburg Police Department's (CMPD) plan of action at ASI's? What can be done to better the response of the CFD to ASI's? How can the CFD take a more active role in tactical operations during ASI's? This research was accomplished by conducting a survey, an exhaustive literature review, personal interviews, and an analysis of department policies and procedures.

The findings of this research show that the CFD is not prepared to play an active role on the tactical level in the mitigation of ASI's. In order for the department to become active on this level it must address the issues brought forth in this research in regards to administrative guidance, training and equipment. Furthermore, the department must give guidance as to what it expects each company to do during ASI's. Recommendations include the development of comprehensive SOG's as well as the establishment of a Tactical Medic program including 3 Tactical Companies in strategic locations throughout the city. These companies should be trained and equipped to operate cohesively within CMPD's REDS program. Their primary function will be to extract and treat wounded civilians. Thus filling a void in the local response system for ASI's.

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Introduction

San Diego, California; Greensboro, N.C.; Pearl, Mississippi; Moses Lake, Washington; each of these places are traditional All-American cities that prosper due to hard working, patriotic families. However, each of these cities shares a common bond with cities such as Jonesboro, Arkansas, Kansas City, Kansas and Littleton (Columbine), Colorado. Each of these cities is synonymous with the All-American values espoused by home town America. However, they are also synonymous with school shootings, mall shootings and other spree killings. While not as notorious as some others, each of these cities was the site of a shooting spree which took the lives of numerous victims. Each of these cities was forced to deal with situations that nobody is truly prepared to deal with. The first responders were forced to deal with a situation in which people were actively being hunted down and killed after their arrival. This type of incident is called an active shooter incident (ASI). Traditionally, with these types of incidents fire departments are forced to respond and take action when they are not prepared to play more than an ancillary role.

These incidents could just have easily happened in Charlotte, N.C. forcing the Charlotte Fire Department (CFD) to respond to and mitigate the situation from the rescue side of response operations. This is significant due to the fact that the CFD does not have a plan in place that allows it to take an active role in tactical operations conducted to mitigate ASI's. The purpose of this research is to identify what other departments are doing in response to these incidents as well as what could be done without placing personnel in a position in which they must assume an unacceptable level of risk.

The following research questions will be addressed during the course of this applied research project:

1. What are other fire departments doing in response to ASI's?
2. What is the Charlotte Mecklenburg Police Department's (CMPD's) plan of action at ASI's?
3. What can be done to better the response of the CFD to ASI's?
4. How can the CFD take a more active role in tactical operations during ASI's without assuming an unacceptable level of risk for its personnel?

For the purpose of this research project the researcher will use a descriptive method to determine what other departments are doing as well as what the CFD can do to better mitigate active shooter incidents.

Background and Significance

No community is immune to incidents where individuals or groups desire to cause harm to others. The Federal Bureau of Investigations crime statistics show that there are on average over 16,000 cases of murder and nonnegligent manslaughter each year (U.S. Department of Justice, 2007).

Table 1: Murder and Nonnegligent Manslaughter Statistics

2000	15,586
2001	16,037
2002	16,229
2003	16,528
2004	16,148
2005	16,740
2006	17,030
2007	16,929

Table 1 shows that over the years the number of cases of murder and nonnegligent manslaughter fluctuates but they are consistently high. Within this crime statistic lays a more sinister classification where the perpetrator or perpetrators actively hunt down and kill or injure citizens carrying on their everyday activities. These events are commonly called spree killings. A general definition for this crime is given by the FBI as two or more murders committed by an offender or offenders, without a cooling off period (FBI, 2009 sec. II). While death is not always the outcome in these types of crimes, the intent to do harm is no less heinous than the outcome, no matter what it is.

Whether planned or spontaneous, spree killings strike fear into the hearts of the communities involved. They make citizens scared to go to the places they frequent on a daily

basis. While the use of the term spree killings exacts a certain level of fear from all citizens, there is an additional variable that when present creates an added level of anxiety within the first responder community. First responders are accustomed to taking action upon their arrival, however, when acts of violence are still occurring after their arrival they are sometimes at a loss as to what level of risk should be assumed. ASI's can be the most terrifying types of incidents imaginable, especially for non-Law Enforcement first responders. This is due to the need to react but the lack of training and preparation to do so safely. Typically in these types of incidents the perpetrators are placed in one of three categories; disgruntled workers, family annihilators, and individuals with mental defects (Armellino, 2007, ¶ 2). However, when dealing with or planning for these types of incidents initial responders have no interest in categorizing the motives behind the rampage but instead find themselves concentrating on dealing with the incident at hand.

While traditional categorizations of perpetrators do not apply to the planning phases for these types of incidents by non-Law Enforcement agencies, there are two specific categories for which planning should be different. This is due to the intent of the perpetrator as well as their level of knowledge and resolve. For the purpose of this research ASI's will be broken into two disciplines; terrorism and non-terrorism. It is understood that most occurrences of these types can be classified as terrorism by one of the many definitions of terrorism; however, it is not the intent of this research to place these incidents within legally binding definitions. It is the purpose of this research to separate these types of occurrences into categories that allow for effective planning by non-Law Enforcement first responders. While terrorism related and non-terrorism related ASI's share in both tactics and impacts there is one stark difference between the two that we in the U.S. have yet to experience. What happens upon first contact by Law Enforcement

personnel is the most defining moment in this type of incident. Whether the perpetrator actively engages with law enforcement, flees, surrenders, or commits suicide will determine the classification for the purpose of this research.

When it comes to non-terrorism related ASI's or spree killings in general, the US can be considered one of the main places these events occur. However, we do not live in a bubble when it comes to these types of events. According to the online Wikipedia Encyclopedia these types of events occur yearly throughout our nation and the world (see Appendix A). They occur in many different places "the location might be not only a school, but an office complex, a fast food restaurant, a warehouse, or an airport-just about anywhere an individual who has become unstable or for whatever reason brings a weapon and opens fire on other people" (Baldanza, 2005, The Police Side section, ¶ 1). Currently the city of Charlotte has a population of 651,000 and a land area of 242.87 square miles (J. Schumaker, public presentation, November 7, 2006). Within this land area are 172 schools (CMS, 2008), 10 college campuses, 6 major malls, 2 indoor arenas, 2 public football stadiums, 3 outdoor amphitheatres and countless other large and crowded buildings. With the size and population of Charlotte it is impossible to predict if, when, or where such events will occur. However, this does not excuse agencies from planning for such events.

Of the two different categories addressed in this research terrorism related ASI's invoke the highest level of fear and anxiety for first responders. There is nothing more terrifying than the thought that somewhere out there are individuals who are actively planning events which are designed to destroy our country and the very core values which make it what it is today. With all that is occurring around the world today it is easy to get caught up in the moment and find yourself believing that the sky is falling. However, as leaders and managers we must see through

the fog of battle and determine that which deserves our attention and that which has been overstated. We should not pretend that we are in the same situation as the country of Turkey where the educational system has been consistently under attack by the PKK (The Worker's Party of Kurdistan). Since the early 70's this terrorist group has been responsible for attacks on schools and teachers and where "by the end of 1993 roughly 700 schools were closed due to the murders of teachers and hundreds of school arsons" (Dorn, 2005, pg. 54). However, we should be aware that terrorist tactics are changing with every new attack. On November 26, 2008 a group of terrorists landed in rubber rafts in the Indian city of Mumbai. Utilizing weapons and equipment which could be carried by hand these 10 terrorists succeeded shutting down an entire city and quite possibly the entire country while they went on a 2 day rampage in which approximately 195 people were killed and 325 were wounded (Vernon, 2009, Incident section ¶ 1).

While these two examples may seem like the extreme, when it comes to terrorist activities we must make ourselves aware of the tendencies of terrorists to take previous methods of attack and expand upon them. This can be noted by the fact that prior to the attack on Beslan School Number One in which over 1000 people were taken hostage of which over 300 were ultimately killed over the course of 52 hours similar attacks by Chechnian rebels had occurred. In 1995 the same terrorist organization infiltrated the Soviet Union in an effort to attack undisclosed locations in Moscow. Along the way their cover was blown which resulted in the storming of a police station in Budennovsk, Russia. After the storming of the police station the terrorists then laid siege to the local hospital where they took over 1,500 citizen's hostage (White, 2007, pg. 346). Then again in January of 1996 Chechnian rebels attacked a military helicopter airfield in the city of Kizlyar, Dagestan. This attack also culminated in the killing of

over 147 and the injuring of over 415 after the taking of over 2,400 civilians as hostages (Budenovsk hospital hostage crisis, n.d.).

The Chechnian attacks could very easily be attributed to their war for independence. The interpretation of whether this war was one of independence or simply terrorist activity is not the intent of this research. However, it should be noted that many of the tactics used by the Chechnian rebels are straight out of most terrorist handbooks. After the attack in Mumbai it is evident that the use of coordinated attacks in which civilians and entire cities are targeted is now one of many threats that terrorists employ. It is easy to say that these things are not related but before 9/11 there were many known dots which were never connected. It was not until the clarity which comes with hindsight bias that these dots were ultimately connected.

It is prudent to understand that although we are somewhat isolated from the violence of the Caucasus region and that of the Middle East, we are only separated by air and opportunity. According to the FBI we have been the targets of such attacks by domestic terrorists in the recent past. A number of these plots have been discovered in time to prevent them from happening. However, many of these attacks such as the one planned on Fort Dix in 2007 were within operational periods of occurring. In the planned attack on Fort Dix the terrorists were investigated and arrested after video of them target shooting was discovered by a retail clerk (FBI, 2007). According to the FBI this case reflects a “brand new form of terrorism” (FBI, 2007, ¶ 12). This attack closely mirrored the foiled attack by another group of homegrown terrorists out of Torrance, California. These four men (of which 3 were U.S. citizens) were plotting “to kill “infidels” by attacking U.S. military facilities, an Israeli consulate building, the El Al Israeli airline, and Jewish synagogues in the Los Angeles area” (FBI, 2005). These

individuals had gotten as far as identifying their targets, raising money through robberies, obtaining weapons and conducting weapons training.

These examples demonstrate what most of us already know. They show that the threat of terrorism is real and possibly a horrific eventuality in the world that we live in. While there are many threats to our community that need to be planned for we must make time to plan our response to those threats which are aimed at destroying our society as a whole. If we do not pre-plan our response to these types of events the number of kitchen fires we experience in a year will seem trivial at best. It would be easier to ignore this type of threat and to live in a state of denial if it weren't for the fact that we in America experience these types of attacks (whether it be by explosives or firearms) every year. These attacks are experienced under the guise of crime and mental illness in the form of spree killings. Whether it is for political gain, mental illness or mere vengeance these attacks are simply attacks on unarmed civilians and they happen every year in our country. This is evident due to the fact that between March 10th, 2009 and April 5th, 2009 53 people have been killed in 7 spree killing attacks in the US alone. None of these attacks have been attributed to terrorist activity which means that while terrorism is a clear threat that must be planned for, non-terrorist related attacks are a clear-and-present danger which must be planned for and dealt with.

Just in the beginning stages of this applied research project the researcher has noticed that it is easy to become caught up in the mayhem and sorted details of these types of incident. It is very important to differentiate between the various types of violent crime. While it is very important for the Fire Service to plan for responses to violent crime in general the purpose behind this research is for planning for ASI's and not the other types of violent crime that we experience every day. ASI's occur in any imaginable place. The incidents which draw the most

scrutiny occur in one of four places; a school, malls, places of worship and places of employment. Many times the location of the shooting gives testament to the motive behind the incident.

When it comes to school shootings recent years have seen an extreme increase in the number of attacks. When analyzing the number of school shootings from 1891 until present there are many gaps in years between shootings until 1976. At this point the gap narrows to nearly 4 years between attacks until 1991. Beginning in 1991 there have been school shootings every year, with the exception of 2000 (Borelli, 2007). While a number of these attacks can be considered violent crimes which have occurred on school grounds many do not fall into this categorization. These can be differentiated by the fact that the assailant was still actively firing on civilians after the arrival of first responders. In such attacks at Columbine, Virginia Tech, Case Western Reserve University, California State University and Red Lake High this was the case. It is imperative that first responders have some level of preplanning established before they are placed into this type of situation.

While school shootings evoke a great amount of fear mall shootings, when highlighted, cause people to continuously look over their shoulders and to jump at loud noises. While shootings in malls, which result in multiple people shot while the assailant goes on a rampage throughout the building, do not number as high as school shootings they do occur from time to time. With events such as the Westroads mall shooting in December of 2007, which left 8 victims dead and numerous injured (Westroads Mall shooting, n.d.) and the Tacoma Mall shooting in November, 2005 which left 6 persons injured (Tacoma Mall shooting, n.d.), mall shootings cannot be ignored.

In addition to malls and schools, places of worship become the targets of many shooters. These attacks occur in such places as the 2008 Knoxville Unitarian Universalist church shooting where two individuals were killed and seven others were wounded (Knoxville Unitarian Universalist Church shooting, n.d.), the 2007 Avarda Missionary training facility and New Life Church shootings in which the same assailant left 4 people dead and numerous people injured at the two churches (2007 Colorado YWAM and New Life shootings, n.d.) and the 2007 First Congregational Church shooting which left three people dead and four injured. While these are more recent attacks, these types of attacks have been happening for many years. According the Anti Christian Defamation Commission there have been nine such attacks since 1999 (Cass, 2008).

The final category which accounts for the majority of ASI's is those shootings which occur at the work place. While these incidents can many times be attributed to everyday crime surrounding robbery and theft there are instances where there are multiple victims and when first responders are on the scene before the shooting ends. According to Emergency Disaster Management Inc between the years of 1986 and 2004 there were 34 attacks at places of work where multiple victims were reported (Workplace Shootings, n.d.).

Whether they occur in malls, schools or universities, places of worship, places of work or on the street throughout town (as in the shootings in Geneva County, Alabama in March of 2009 which left 10 dead) every spree shooting has the ability to turn into an ASI for first responders. With the proliferation of cell phones calls to 911 have become almost instantaneous to when the shooting begins and in cases such as the Columbine shootings and the Westroads Mall shooting it is highly likely that first responders will be on the scene before the shooting has stopped. With such incidents occurring at an alarming and sometimes escalating rate around the country it

is imperative that the CFD begin planning for its role in the mitigation of such incidents. The decision as to whether the department will play an active role in tactical operations or will remain in the staging mode until the area has been cleared must be decided beforehand. Without a great deal of thought and planning personnel may be placed in situations which require an unacceptable level of risk.

With the increase in the number of spree shootings which become ASI's the law enforcement community has begun to change its mode of operations. Shortly after the Columbine shootings in 1999 the law enforcement community began making changes in the way it responds to ASI's dictating the need for fast and aggressive actions aimed at stopping the violence. Utilizing Immediate Action Rapid Deployment (IARD) tactics when confronting ASI's has become expected practice in the law enforcement community (Armellino, 2007). The Charlotte Mecklenburg Police Department (CMPD) has made the change to this philosophy and tactics also. The CFD has been a part of the training that has been conducted by CMPD which was aimed at indoctrinating its personnel with this philosophy. Both organizations have been partners for a number of years in developing an all-hazards risk reduction plan for the city of Charlotte.

The above research shows that ASI's have and will continue to occur throughout the United States. While the response and mitigation of these types of incidents is not the primary function of the fire service dealing with the aftermath, through EMS service, is a large part of the services provided by traditional fire service organizations. This coupled with the unified command structure that has become the standard for NIMS compliant agencies means that the CFD will play a vital role in creating a positive outcome to this type of event. In response to the United States Fire Administration (USFA) operational objective: "to promote within the

communities a comprehensive, multi-hazard risk-reduction plan led by the fire service organization” (USFA, 2008, II-2) the CFD has lead the emergency response community within the city of Charlotte in preparing an all-hazards approach to Emergency Management. By researching this type of incident as well as the various options that the CFD has in responding the researcher hopes to further improve the ability of the CFD to play a vital role in a positive outcome of ASI’s. It is the researcher’s belief that this must be done while increasing the safety of all employees of the city of Charlotte engaged in the mitigation of ASI’s.

Through such courses as the Executive Analysis of Fire Service Operations in Emergency Management, skills sets can be combined with research findings that will better enable command and control of such incidents as ASI’s. Skills from exercises conducted in this type of instructional setting better enable Incident Commanders to deal with the complexities of these and other related incidents. While these types of skills are very advantageous when it comes to managing traditional CFD operations, without research into possible modes and methods of operation at ASI’s the CFD will be relegated to a position of inaction while waiting for the all clear. Or, will be pushed into taking actions which they are not equipped or trained to take. As with all other emergency situations, the CFD has the resources and abilities to make positive contributions to the mitigation of ASI’s. However, without research it cannot determine what these contributions are or can be.

Literature Review

A comprehensive literature review is being provided which shows four distinct areas that the CFD must be aware of before determining what level of involvement it should establish for ASI’s. First, what is the level of susceptibility for the city of Charlotte for ASI’s and what role

does planning for ASI's play in the All-Hazards approach to Emergency Management. Second, what the common mentality towards ASI's is within the fire service. Third, how Law Enforcement has evolved in its handling of ASI's and fourth, what groundwork has been laid for the fire service's participation in the mitigation of these types of incidents at the tactical level?

Every day throughout the US citizens are murdered with firearms for various reasons. Whether it is a domestic dispute, robbery or simply an argument; between 1976 and 2005 an average of 9,756 homicides were committed with some type of firearm (Bureau of Justice Statistics, n.d.). It is safe to say that America has become immune to the constant barrage of gun related crimes. However, there are certain dates throughout history where for certain communities time stood still; April 20, 1999, Littleton Colorado; July 18, 1984, San Diego Ca.; August 22, 1928, Fairfield Ca. and April 3, 2009, Binghamton N.Y. These are just a few incidents in which the crimes committed are classified as spree killings. Spree killings are defined by the FBI as two or more murders committed by an offender or offenders, without a cooling-off period (FBI, 2009, sec II ¶ 6). Between the years of 1885 and 2009 there are over 32 documented spree killings (see Appendix A) which took the lives of over 231 people and injured 252. These statistics are not all inclusive but are merely used to demonstrate the fact that these types of attacks have been happening for many years and occur all over the US. These incidents do not include the many school attacks that have occurred and exclude any activity related to terrorism, either domestic or international.

As terrifying as the statistics on homicides and spree killings are there are a number of these incidents that become a first responder's nightmare. Most departments in the US make every effort within their means to put their fire companies on the scene of emergencies within the

standardized response time of 4 minutes (NPFA, 1710, sec 4.1.2.1). This means that many times first responders will be on scene before the shooting stops. These ASI's can be the worst nightmare for untrained and unprepared responders.

As with everything else we do, it is safe to say that we will be judged by our actions and reactions to ASI events also. It is also important to realize that no department can plan for every specific type of event of this nature at every location possible. Many experts claim that incidents of this type can be prevented before they occur by recognizing the signs of impending violence. However, most of these claims are made after an event of this nature occurs. Take as an example the Virginia Tech shooting rampage of 2007. As Smith (2007) noted in his article *Why we won't learn from Virginia Tech: The problem with hindsight bias*:

In the days following the mass killings on the campus of Virginia Tech, a broad array of experts waxed eloquently that *they* could have prevented the tragedy. It was a clearly preventable and easily-predictable incident! An obviously violent and insane young man and a homicide reported two hours earlier, what else could it mean? Since when do murderers try to get away? Obviously he would return and murder dozens of students and professors on the campus...so obvious because *we know* the ending of this story. (¶ 1)

Hindsight bias is an issue that the fire service is very accustomed to dealing with. We have become accustomed to critiques and lessons learned when dealing with incidents in the various disciplines that we operate within. How many times have critiques become derailed due to those

who become involved after the fact making assumptions and inferences due to the fact that they know the facts and issues, but, they did not live them as they were unfolding?

While we should be careful when dealing with issues surrounding preventability after the fact, the same cannot be said for dealing with predictability before the fact. The fire service spends countless hours each year training for the big one and how many times does the big one actually happen? It does not matter whether it is a high rise fire, confined space rescue, collapse rescue or the school bus in a lake that many dive teams base their existence on. The fire service plans and trains for the worst and hopes for the best. “Aristotle has explained something as being so unlikely it would be like ‘finding a black swan’ and in the Western mind the black swan stood as a symbol of highly improbable events until the first explorers from Europe landed in Australia” (Smith, 2008, ¶ 5).

Planning for Black Swan events is one of the main purposes for the All-Hazards approach to Emergency Management. The development of the All-Hazards plan gives the framework for responses to many types of incidents which would be considered Black Swan incidents. All hazards planning is the foundation of preparations for dealing with emergencies on a local and national level. From the highest level of government to the lowest levels of first responders this type of planning has become the framework for how communities handle both everyday emergencies and catastrophic events. Whether a community is making an effort to “proceed confidently with long-term *mitigation* efforts directed at specific hazards” or is aiming to “devote more resources to risk-based *preparedness* measures” an “an all-hazard Emergency Operations Plan (EOP) helps the community start from a position of relative security” (FEMA, 1996, pg.1-4 & 1-5 all hazards planning).

The importance of using the all hazards concept for planning can be further demonstrated by the amount of importance given to this approach to planning by accepted professional organizations. According to the International Association of Emergency Managers (IAEM) the number 1 principle of Emergency Management is that “emergency managers consider and take into account all hazards, all phases, all stakeholders and all impacts relevant to disasters” (Blanchard, 2007). This is followed by the third principle which states that planning efforts should be risk driven and that “emergency managers use sound risk management principles (hazard identification, risk analysis, and impact analysis) in assigning priorities and resources” (Blanchard, 2007).

According to *Managing Fire and Rescue Services* “each jurisdiction decides what degree of risk is acceptable in that jurisdiction: the determination is based on criteria that have been developed to define the levels of risk (e.g., of fire) within all sections of the community. The decision about what levels of risk are acceptable will determine the extent of fire department capabilities that must be available” (Compton, Dennis & Granito, John, 2002, pg. 39). Therefore it is considered to be up to the authority having jurisdiction to determine if the threat of ASI related incidents should fall under the scope of planning for their jurisdiction. However, Blanchard further states the importance of the all hazards approach to this by stating that;

Effective risk management is based upon (1) the identification of the natural and man-made hazards that may have significant effect on the community or organization; (2) the analysis of those hazards based on the vulnerability of the community to determine the nature of the risks they pose; and (3) an impact analysis to determine the potential effect they may have on specific communities, organizations, and other entities.

This acknowledgement of the need to include the identification of natural as well as man-made disasters in the planning for emergency operations is important when identifying areas of concern. When combined with the statistics identified earlier in this research, surrounding the frequency and severity of emergency incidents involving active shooters, a strong case is created for including active shooter related incidents in the planning for emergency operations within the City of Charlotte.

Historically the fire service has responded to ASI types of events with the “it’s not our job” mentality. Additionally, it has become standard operating procedures for many departments to stage on any incident where violence has or is occurring. This concept can be clearly seen in the March 2004 roundtable discussion in Fire Engineering. In this article the scenario is presented; “Your department responds to shots fired in a school. As you stage outside, students who have self evacuated run over to your location and tell you that several children, shot and bleeding, are inside the doorway about 20 feet down the hallway. Police are inside the building but have not yet secured the building and are still looking for the shooter(s). Would you allow your crew members to enter the building and bring out the injured children” (School Shootings Roundtable, March 2004). Of the 32 respondents to this discussion 24 stated that they would not enter to effect any rescues while 8 respondents said that they would either enter the building or work with the Police Department to make the rescues. A number of the respondents go on further to discuss the fact that companies should be staged and uninvolved until the scene is secured while others discuss setting up unified command and beginning triage when necessary.

This was the method of operation utilized during the Columbine response in 1999. While staging was set up away from the incident responders were fired upon as they rescued 3

individuals from outside the school cafeteria on the southwest side of the school (Jefferson County Sheriff's Office, 2000, The Fire/Emergency Medical Services Response section ¶ 6). However, this was the only instance where Fire Department personnel were directly involved in rescuing injured victims until the building was secured. This method of operation is further reinforced in another Fire Engineering article entitled *Fire Department Response to Active Shooter Incidents*. In this article it is stated that "at the slightest indication that you have arrived at something other than a fire service call, move your units to a safe area, advise communications, and wait for police response" (Baldanza, 2005, The Fire Side section ¶ 4). The justification for this approach is typically the fact that the fire service is not equipped or trained to intercede in these types of incidents (School Shootings Roundtable, 2004) and that without training or equipment departments would become part of the problem and not the solution.

Just as the Fire Service plans for Black Swan events within its realm of operations the Law Enforcement community does the same for those incidents within its realm of operations. Law Enforcement has constantly planned and adjusted operational objectives for such Black Swan events as ASI's for years. As a matter of fact the consistent reoccurrence of these Black Swan events has created an evolution of such in how the Law Enforcement community responds to ASI's. Each shift in how these incidents are handled can be traced back to a specific incident or series of events. Since the beginning of our country there have been incidents of this type dating back as far as 1891 when a 70 year old man attacked a school yard at St. Mary's Parochial School in Newburg, New York (Borelli Consulting, 2007). While there were no fatalities from this incident this does demonstrate that these types of events have been a part of our country for many years. To further demonstrate the fact that these events have been around for many years one should look at the attack on Bath School in the Bath township of Michigan. In this attack

Andrew Kehoe used explosives to kill 45 people and injure 58 others. Most of the dead and injured were school children between the ages of 7 and 12. It should be noted that this is the first documented incident of this type where a secondary explosive was used to attack responders (Borelli Consulting, 2007). This attack occurred in 1927.

These types of incidents went on for many years. “Using a minimum of equipment and no formal training, an older generation of American patrolmen did an outstanding job of protecting the public using just raw basics: bravery, aggression and speed” “with a healthy dose of commonsense and testosterone these early lawmen selflessly placed themselves into hazardous situations in order to do what the public expected” (Armellino, 2007, Different eras, different tactics section ¶ 2). Then just as in many other disciplines an evolution began taking place. On August 1st 1966 Charles Whitman went on a shooting rampage in Austin Texas in which 16 people were killed and 31 injured. This incident as well as a few others during this time frame “lead to the rapid development of tactical teams, command posts, and encouraging first responders to wait for the experts” (Smith, 2008). The hurry up and wait for SWAT doctrine became the norm for many agencies for many years.

Then as with many other things, changes began to happen. Even though these changes were slow and non-existent in some places the tide of change was happening none the less. On October 17th, 1991 Luby’s Cafeteria in Killeen, Texas became the sight of one of the largest spree killing attacks in American history. To make matters more complicated, due to a Law Enforcement class being given two buildings away this quickly became an ASI. A 35 year-old male by the name of George Hennard crashed his vehicle into the front window of the building and came out shooting. In the fourteen minutes this incident lasted from beginning to end Mr. Hennard killed 23 people and injured 20 others. This incident became one of the first well

documented incidents in which direct and aggressive police action ended the spree. This occurred when 7 officers who were taking the class two doors down developed a plan with four of them maintaining a perimeter while the other three made entry to the building to stop the shooter. “Thanks to the immediate and brave actions by members of the Killeen Police Department; Hennard’s deadly plan was interrupted before he could shoot the remainder of the citizens trapped inside” (Armellino, 2007, A Predictable Ending section ¶ 2).

The Luby’s cafeteria attack demonstrated the tide of change in handling ASI’s which had begun. This change was further pressed by the Columbine school attack which led to the development of the Immediate Action Rapid Deployment (IARD) plan by the LAPD’s SWAT program developers (MACKO, 1999). In this program ordinary patrol officers are trained to intercede in situations where active shooting is going on after their arrival. They are given instruction in the techniques needed to enter and clear occupancies while looking for active shooters. This training allows for early and aggressive contact with active shooters in an effort to end the shooting and prevent any further killings. This program has blossomed and is being taught in some form by many agencies, both private and public under various other acronyms.

The majority of these programs include two types of teams; 1) the contact team, 2) the rescue team (Douglas, 2002). The contact team’s basic function is to make contact with the shooter and neutralize the situation. This is done through combat style movements and aggressive action. The second team in these programs is the rescue team. According to the San Diego, Ca. ASI plan “the rescue team is still a police operation and does not involve emergency medical personnel” (Douglas, 2002, Rescue and Containment section ¶ 2). This team is comprised in part by “grabbers” whose function is to carry the victims out of harm’s way. The

combination of contact teams and rescue teams is preplanned and carefully coordinated in order that areas of the building are cleared and evacuated to areas of safe refuge as quickly as possible.

It is safe to say that the Law Enforcement community has learned from past incidents and will continue to learn in the future. But each of the incidents that have been discussed is an incident of a domestic nature. Is Law Enforcement prepared for incidents carried out by international terrorists? Have the recent attacks in Mumbai signaled the future in terrorist activities? Will this type of attack come to the U.S.? It is safe to say that if it does hindsight bias will be a big issue. As with everything else emergency responders will be told that they should have known and should have been prepared. It is imperative for first responders to be able to recognize the telltale signs of the planning and surveillance conducted before terrorist attacks. However, short of the proverbial blind squirrel finding a nut, the prevention of a carefully coordinated and pre-planned terrorist attack is beyond the realm of the street level first responder. Instead, emphases should be placed on planning for the mitigation of this type of event in a manner which will enable the agency to lessen the impact.

This planning must include all of the first responders that will be a part of the response. The ground work for cooperation on the tactical level has already been laid. “Shortly after the inception of SWAT in the 1970s came the addition of front line medical support. Los Angeles, Minneapolis and Pima County, AZ, are a few of the many that have helped establish models for this unique specialty. The term tactical medic refers to an EMT (basic or advanced), paramedic or pre-hospital trained physician, nurse or physician’s assistant” (Burke, 2003, pg. 1 ¶ 2). These medics are primarily responsible for treating any members of the SWAT team that are injured during the incident. They are also available to treat any civilians who are injured. During the response to the Virginia Tech shooting incident tactical medics were utilized along with the entry

teams. This allowed for the fact that “the tactical medics saved lives while the rooms were still being cleared” (Finegan, 2008, pg. 2). The fact that no deaths occurred after the scene was secured was directly attributed to this method of operation.

Tactical Medics are becoming commonplace on more and more tactical teams. With an injury rate of 23.9 per 1,000 tactical team missions (Burke, 2003) the need for tactical medics has been established. It is further justified by numerous medical studies regarding the benefits of immediate medical intervention in ballistic or other traumatic injuries. In regards to the golden-hour rule used by surgeons Burke (2003) states that;

Pre-hospital professionals use an even shorter and more compressed timeframe called the golden minute to describe the period between injury and definitive field care. Obvious benefits of having medical support include opening and maintaining of an airway or stopping critical bleeding. When our civilian community activates a heavily armed and trained critical response team as a result of a real or perceived threat, it indicates that serious physical injury to someone is a possibility. It makes sense to take a lesson from our military and extend a trained and equipped medical echelon into the civilian battlefield. (The Golden Minute section)

With the increased use Tactical Medic programs comes the increased availability of training. There are numerous agencies which say they provide training in tactical and combat medical care. A quick Google search reveals 8 agencies which claim to provide this type of training and numerous associations which state they provide professional service for these types of programs and teams. These programs include private companies and state level training agencies such as the North Carolina Department Justice Academy. Through the utilization of

these already established avenues training and operational procedures the fire service could begin taking an operational role at the tactical level without having to reinvent the wheel or invent it all together.

During the research for this literature review four very important questions were answered. Knowing the answers to these questions was pivotal in being able to answer the research questions. To begin with there will always be questions about what level of risk a city has for ASI's and whether or not cities which proscribe to the All-Hazards approach to Emergency Planning should plan for these types of events. The literature reviewed for this research showed that all jurisdictions are exposed to the risk of ASI's and Black Swan events such as these are the very events the All-Hazards approach to Emergency Management is supposed to prepare agencies for.

Secondly, the common mentality toward ASI's within the fire service is that personnel should stage and wait for Law Enforcement to secure the area. However, there are a number of agencies whose personnel proscribe to the theory of "risk a lot to save a lot; risk a little to save a little". This shows that the fire service has not evolved in how it responds to these types of incidents in the same way that Law Enforcement has evolved.

Third, it has been learned that Law Enforcement theory and practice has evolved over time due to bad experiences and outcomes with actual incidents. In the beginning law enforcement in general proscribed to the practice of surround, secure and wait on SWAT. Over the years they have evolved to the practice of taking immediate aggressive action directed at neutralizing the shooter in order to preserve lives.

Finally, the literature reviewed showed that the ground work has already been laid for the fire service to operate at ASI's on the tactical level. The foundation of this ground work lies in

the SWAT medic programs that have been developed which enable medics to provide emergency medical care to law enforcement tactical officers during tactical operations. By utilizing these already established training programs departments can begin operating at ASI's on the tactical level with prior access to resources which support the planning for these operations.

The information reviewed here has given the researcher the basics from which to begin answering the research questions. It has enabled a comprehensive understanding of where the common ground lies between the fire service community and the law enforcement community when it comes to responding to ASI's. It has more importantly showed where the major differences between the two types of agencies lay which can impact overall operations.

Procedures

The procedures used to conduct this Applied Research Project consisted of a literature review to determine what threats exist to the city of Charlotte in regards to ASI's. To accomplish this an exhaustive search was conducted on the internet using a number of search engines including; Google, Yahoo, Lexus-Nexus and Academic Search Premier. The Lexus-Nexus and Academic Search Premier searches were conducted through the NC Live portal on the Public Library of Charlotte and Mecklenburg County website. In addition highly regarded books on school safety and terrorist attacks were reviewed. These included *Terror at Beslan* by John Giduck and *Innocent Targets; When Terrorism Comes to School* by Michael and Chris Dorn.

After an extensive literature review it was decided that the descriptive method of research would be used. This enabled the researcher to determine what other departments are doing as well as what the CFD can do to improve its responses to active shooter incidents. In order to effectively complete this research the necessary data was collected that relates to each research

question. By treating each question individually the researcher was better able to determine what data needed to be collected.

The first research question to be addressed was: What are other Fire Departments doing in response to ASI's? This question is necessary in order to determine what tactics are already being utilized throughout the fire service. By finding out what other departments are doing the researcher was able to determine whether the CFD is providing the same level of service as other departments. This also aided in the determination of how much this subject has been explored. This question was addressed by the creation and dissemination of a survey (see Appendix B) and then by follow-up interviews with specific respondents to the survey.

The survey was created in a manner which allowed the researcher to determine the type of actions taken by each department. The respondents were further split into agencies which have experienced this type of incident and those who have not. This was done in order to gauge the impact that their ASI experience made on how they handle these incidents. During analysis filters were applied which allowed departments that mirrored the CFD in size and population protected to be separated from other departments. Additional questions were included in order to determine; (a) if and to what level departments equip their personnel for responses to ASI's; (b) what type of training is conducted for ASI incidents; (c) whether they have standard operating procedures for ASI's; (d) whether departments take an active role in the mitigation of the incident or stage until the incident has been stabilized. This survey was distributed in two manners; (1) a direct email was sent to the Chief of the Department for each department represented in the Metro section of the International Association of Fire Chiefs; (2) a link to the survey was placed on the web site for National Society of Executive Fire Officers and a link to

the survey was sent to the members of the researchers three previous Executive Fire Officer Program classes.

The second research question to be addressed was; what is the Charlotte Mecklenburg Police Department's (CMPD) plan of action for ASI's? This question was answered by way of an interview with Major Dale Greene on April 29, 2009. Major Greene is the commanding officer of CMPD's SWAT program and the primary coordinator for the department's response to ASI's. Questions from this interview (see Appendix C) revolved around; (a) the departments philosophy for ASI's; (b) specific training for ASI's; (c) what precipitated any change in philosophy. Additional interviews were conducted with CMPD Captain Steven Brochu in order to determine preliminary costs of developing a tactical medic program. His responses were used in the recommendation section of this research

The third research question (What can be done to better the response of the CFD to ASI's?) was answered after splitting the question into three sections. These sections consisted of; 1) Administrative/Operating Procedures, 2) Training and 3) On Scene Operations. This allowed the researcher to analyze individual parts of the response to these incidents.

By looking at how the CFD plans for and trains for these types of events as well as how it guides it's personnel in dealing with ASI's the researcher was able gain an understanding of how these events will be responded to. This was done by looking for any CFD policy or procedure that may impact operations at ASI's. Then discussions were had with Major Greene and other CFD Chief Officers which pertained to the lessons learned from training which was conducted for this type of incident. Then the researcher was able to compare these findings to other agencies as well as determine how the CFD compared to those agencies who responded to the survey. The final portion of answering this questioned dealt with the comparison of how CFD

operations compliment CMPD operations on these types of incidents. This is how the final determination of how the CFD can better its response to ASI's was decided upon.

The fourth and final research question (How can the CFD take a more active role in tactical operations during ASI's without assuming an unacceptable level of risk for its personnel?) was answered in the same manner as the third research question. The first activity used to answer this question was to define what an unacceptable level of risk would be. Once this was completed the question was broken down and answers were obtained for those areas which were deemed controllable (SOG, SOP and Tactical orders along with training and equipment). An interview was conducted with Battalion Chief Anthony Cerrone as well as Captain Rich Shelton both from the Colorado Springs Fire Department. This department operates a fire company based tactical medic program in support of law enforcement in their community.

Limitations and Assumptions

The literature review revealed that very little research has been conducted on this topic. This placed extreme limitations on the literature review portion of this research. This research and specifically the survey used in this research was conducted in an unscientific manner. The method used to disseminate the survey did not allow the researcher to verify that multiple responses from the same agencies were not obtained. In addition the basic assumption of truthfulness was made for both survey respondents as well as interviewees.

Results

In order to understand where the fire service in general is in regards to dealing with ASI's as well as whether or not the CFD is in line with or behind other departments the first research question must be answered: What are other fire departments doing in response to ASI's? This

question was answered by the use of a survey (see Appendix B) to answer a number of supporting questions. These questions will allow an answer to how SOG's are being utilized. What type of training is being conducted? How personnel are being equipped, and whether or not fire service agencies are taking an active role in operations or staging. As well as how agencies experiences with ASI's have impacted their current operations. A total of 116 persons responded to this survey. Of these individuals 35 work for organizations which closely resemble the CFD. These are career departments which serve populations of over 500,000. These respondents will be separated by a filter and referred to as the target audience while analyzing this survey (see Appendix B).

Table 2 shows that almost twice as many organizations that have experienced an ASI have SOG's for this type of incident as those who have not. However, still only 42.9% of those agencies have SOG's. This demonstrates that very few department give formal guidance to their personnel on how they are expected deal with ASI's.

Table 2: Survey Question #3 Results

Has your organization ever responded to an active shooter incident?		
Answer Options		% That Currently have SOG's
Yes	63.8%	42.9%
No	36.2%	22.5%

Table 3 demonstrates that within the 35 agencies that are considered target agencies most have experienced what has been defined as an active shooter incident (80%), however, only 50% of

those have SOG's in place. This percentage is even lower for agencies that have not experienced an ASI (16.7%).

Table 3: Survey Question #3 With Target Audience Filter applied

Has your organization ever responded to an active shooter incident?		
Answer Options	Target Audience	% That Currently have SOG's
Yes	80.0%	50.0%
No	20.0%	16.7%
<i>answered question</i>		35

An even more disturbing trend is shown Table 4 and Table 5 where Table 2 percentages are compared to Table 3 percentage for the same questions. In this comparison you can see that of those who have experienced ASI's the majority did not have SOG's in place before the incident. Of those same respondents many still do not have SOG's in place. This shows that the CFD is not operating outside the norm for fire service agencies at ASI's.

Table 4: Comparison between Table 2 and 3

Did your department have a written procedure for active shooter incidents before you experienced this type of incident?		
Answer Options		Target Audience
Yes	32.1%	42.9%
No	67.9%	57.1%

Table 5: Comparison between Table 2 and 3

Do you have a written procedure for active shooter incidents at this time?		
Answer Options		Target Audience
Yes	42.9%	50.0%
No	57.1%	50.0%

When agencies are questioned about the training that they conduct it can be determined that those agencies that conduct training for this type of incident are in the minority. Table 6 shows a comparison between agencies that have experienced ASI's and those that have not. This comparison shows that agencies that have experienced ASI's are less likely to train for them. While the percentage of agencies training for ASI is still low this comparison for the target audience is reversed in Table 7 with those that have experienced ASI's providing more training than those that have not.

Table 6: Survey Question 7 and 18 Comparison

Has your department conducted training for this type of incident?		
Answer Options	Agencies who have not experienced ASI's	Agencies who have experienced ASI's
Yes	42.5%	31.7%
No	57.5%	68.3%

Table 7: Survey Question 7 and 18 Comparison with Target Audience Filter Applied

Has your department conducted training for this type of incident?		
Answer Options	Target Agencies who have not experienced ASI's	Target Agencies who have experienced ASI's
Yes	16.7%	39.3%
No	83.3%	60.7%

In the training realm it can be said that the CFD is ahead of many agencies. In the recent past the CFD has conducted drills and other training (which will be addressed later in this research) which have allowed it to identify weaknesses in the comprehensive ASI response system. This has placed the CFD ahead of the curve when it comes to training.

When it comes to providing personnel with equipment that respondents would consider designed for use at ASI's, the same lack of action can be said to be taking place. Table 8 demonstrates that of those respondents that have not experienced ASI's most do not supply specific equipment for these operations. This is similar for those who have experienced these types of incidents. These replies are mirror almost exactly by target agencies in Table 9

Table 8: Survey Question 9 and 20 Comparison

Do you provide equipment to your personnel that is designed for active shooter incidents?		
Answer Options	Agencies who have not experienced ASI's	Agencies who have experienced ASI's
Yes	12.5%	23.1%
No	87.5%	76.9%

Table 9: Survey Question 9 and 20 Comparison with Target Audience Filter Applied

Do you provide equipment to your personnel that is designed for active shooter incidents?		
Answer Options	Target Agencies who have not experienced ASI's	Target Agencies who have experienced ASI's
Yes	16.7%	25.0%
No	83.3%	75.0%

Replies to training and equipment questions are closely related to the question regarding whether companies are required to stage or not. Responses to the question in Table 10 show that the vast majority of agencies require their companies to stage upon arrival. Once again these responses very closely mirror by the responses from target agencies in Table 11.

Table 10: Survey Question 5 and 16 Comparison

Does your department take an active role in the incident or does your department require companies to stage?		
Answer Options	Agencies who have not experienced ASI's	Agencies who have experienced ASI's
Active Role	12.8%	12.0%
Stage	87.2%	88.0%

Table 11: Survey Question 5 and 16 Comparison with Target Audience Filter Applied

Does your department take an active role in the incident or does your department require companies to stage?		
Answer Options	Target Agencies who have not experienced ASI's	Target Agencies who have experienced ASI's
Active Role	16.7%	18.5%
Stage	83.3%	81.5%

Whether this is a lack of training and equipment causing agencies to allow less risk in the actions taken by personnel or the lack of providing equipment in order to prevent personnel from accepting a higher level of risk cannot be determined. However it can be said that the fire service in general operates in risk aversion mode when it comes to ASI's.

The one thing can be said about the impact that experiencing an ASI has on the respondent agencies is that it is minimal at best. This is demonstrated by the percentages in Table 12 which show that only around half of agencies change the way they deal with these types of incidents after the fact.

Table 12: Survey Question 13 Comparison with and without Target Audience Filter Applied

Has your department's experience with this type of incident created changes in the way you respond to these types of incidents?		
Answer Options	Agencies who have experienced ASI's	Target Agencies who have experienced ASI's
Yes	54.7%	50.0%
No	45.3%	50.0%

By dissecting this survey the conclusion can be drawn that of those agencies who responded the majority do not operate within an SOG framework for ASI's. In addition most agencies have chosen to take the staging approach to this type of incident. This is further evidenced in the lack of training and equipping of companies for ASI's. These findings give a strong inference that fire departments are doing little in response to ASI's.

While the Fire Service is doing little in response to ASI's, Law Enforcement agencies have experienced an evolution of sorts in their responses to these types of incidents. By understanding how they have evolved the Fire Service can better prepare its response so that a comprehensive approach can be taken. In order to answer the second research question: What is the Charlotte Mecklenburg Police Department's plan of action at ASI's, an interview was conducted with Major Dale Greene of the CMPD. Major Greene is the Special Operations commander who manages the active shooter response program as well as the SWAT program. During this interview 18 questions were asked (see Appendix C) which allowed a picture to be painted showing the history and philosophy behind the methods utilized by CMPD for this type of incident. This interview also explored the current SWAT medic procedures and how they impact the department's response to ASI's incidents.

Shortly after the school attack at Columbine in April of 1999 the leadership at CMPD recognized the shortcomings of their plan of action for this type of incident. This placed them in the front of the evolution of police responses for this type of incident along with many other agencies throughout the nation. They and many other North Carolina law enforcement agencies began a collaborative effort along with the North Carolina Justice Academy to train their officers in the new IARD tactics. The CMPD developed its own response program entitled Rapid Emergency Deployment System (REDS). This program follows the lesson plan for rapid

deployment training developed by the North Carolina Justice Academy. This mode of action is taught in the North Carolina Basic Law Enforcement (BLET) curriculum for new law enforcement officers throughout the state. It is administered to new recruits during the rookie school at the CMPD training academy by in house instructors. In addition annual training is administered to all CMPD officers in either a classroom setting or during scenario based training. The department's philosophy in dealing with ASI's is demonstrated by the REDS program and is evidenced by its total commitment to delivering training, both initially and continuously, to every officer on the force.

The CMPD shares the same basic philosophy that many other law enforcement agencies now formulate their ASI policies on. According to Major Greene they believe that officers are sworn and paid to protect the public from harm. With this lies the responsibility to protect the public by either removing the public from harm's way or by removing the harm for the public's way. They acknowledge that the previous philosophy of contain and wait on SWAT does not work and that innocent lives are lost unnecessarily when this method of operation is used in ASI's. As an organization they have accepted the fact that there is a certain level of risk associated with putting a police badge on your chest. As a law enforcement officer you are expected to operate in a dangerous environment which may bring injury to yourself if it is needed to protect the public who cannot protect themselves. They have come to accept the same risk benefit mantra that the fire service has adopted; risk a lot to save a lot, risk a little to save a little. With the acceptance of the mantra they have begun indoctrinating new recruits as well as veterans with the REDS principle that contact must be made with the shooter as quickly as possible in order to neutralize the threat and stop the killing.

In the REDS mode of operation officers are taught that first arriving officers must make the determination of what type of incident they have. Similar to a fire service size up they must expeditiously gather information by using their senses as well as information from victims and bystanders and form a basic assumption of the type of incident they have. (Researchers note; the term assumption is used with the acknowledgment that forming action plans on the basis of an assumption is generally considered not ideal for emergency operations. However, in the fog of war when there are many more unknowns than known's it is unrealistic to plan or train to plan for decision making based upon absolutes). In REDS training officers are taught that the differentiation between an ASI and an incident which they should contain and wait on SWAT can be made by two observations. First arriving officers should listen for shots being fired. The sounds of shots being fired should lead to the assumption that citizens are still being shot at and possibly killed. With this sound the officers should signify that this is a REDS incident and a rapid deployment is being initiated. In the event that shots are no longer being fired or if the assailant makes contact and communicates that if they approach he will kill or begin killing then a method of containment should be established and SWAT should be activated. This is unless or until shots are once again fired. At the time of renewed hostile actions the REDS protocol should be enacted and rapid deployment should be initiated.

During the interview it became apparent that CMPD has given a great deal of thought to the actions that must be taken to neutralize any assailants. They have trained each of their employees in how to conduct operations in this type of environment. However, it did become clear that there is a void in the response to ASI's which includes the administering of medical aid during the initial stages of this type of incident. Currently there is a mindset within the Charlotte Mecklenburg first responder community that non-law enforcement personnel should stage

outside of the area of hostility until CMPD gives the all clear. Once the all clear is given then first responders will move in and provide care to the injured. However the all clear, according to after action reports from previous ASI's around the country and to CMPD's experiences, does not come for an extended period of time. This is due to the amount of time that it takes to clear a building. This will place the beginning of medical intervention well outside the golden hour.

Within the CMPD response framework for ASI's there is only one mechanism for providing emergency medical care in the ASI environment. Currently the CMPD SWAT program utilizes Tactical Swat Medics from the Mecklenburg County EMS Agency called Medic. These Tactical Medics operate at the Paramedic level and are trained in combat medicine as well as tactical operations in a hostile environment. There are 6 personnel in this program. Medic makes every effort to have one of these individuals on call at all times, however, they all have pagers and can respond while off duty if needed. These medics are typically only called out on traditional SWAT operations which involve command and control operations for tactical entries. However, if on scene these personnel could provide aid to injured citizens if not engaged with entry teams. It should be noted that according to Major Greene the Tactical Medics are "only focused on providing care to CMPD officers" (Greene, personal communication, April 29, 2009). They are trained to quickly assess any injured and then move forward with the entry team. Major Greene admits that in an ASI this mechanism of providing emergency medical care will not provide adequate medical care to injured civilians. It should be noted that planning for medical care delivery is outside CMPD's realm of responsibility.

During the interview a candid discussion was had about the CFD's role in this type of incident. Major Greene spoke of a drill that took place on March 13, 2008 in which an ASI was played out with CMPD, CFD and Medic. During this drill it became apparent to him that while

CFD and Medic wanted to take action there was a hesitancy to do so until the all clear was given. According to Major Greene this will not happen until well into the incident, depending upon the size of the building or area. According to Major Greene this hesitancy to operate without an all clear creates a gap in the response to this type of incident. The existence of this gap dictates the need for an assessment of fire department operations which will allow for the answer to research question 3; what can be done to better the response of the CFD to ASI's?

In order to answer this question effectively operations will be split into three categories; 1) Administrative/Operating Procedures, 2) Training and 3) On Scene Operations. This will enable each portion of the department's response mechanism to ASI's to be analyzed.

The CFD responds to many shootings every year. While at some of these incidents gunfire continues after companies arrive the CFD has never experienced an ASI as defined by this research. Of those departments who responded to the survey which have never experienced an ASI 77.5% do not have a written procedure in place for operations at an ASI. This is the same for the CFD which currently has no Standard Operating Procedures that deal with ASI's within the CFD's operations manual. In addition the All Hazards plan for Mecklenburg County, which defines roles and responsibilities for responding agencies, does not address ASI's specifically whether terrorism based or non-terrorism based. The lack of written procedures is compounded by the fact that there has been no guidance from the administration either written or verbal as to what is expected of company officers in dealing with this type of situation.

The culture within the CFD lends itself to the concept that company officers are expected to observe each situation for what it is and base their decisions on these observations. The SOP's that are utilized within the department do not spell out step by step what officers should do in

different situations. Instead company officers are given the leeway and autonomy to handle situations as they see fit. While this may lend itself to creating an organization in which company officers feel free to base their decisions on the situation at hand and not try to force every incident into a cookie cutter format it does leave officers in a precarious situation. Without clear guidance as to the expectations that the department places upon its officers they are left to decide and ultimately defend their actions based upon ambiguous guidance from the administration.

While this in itself is not wrong it can lead to companies taking the easy way out and not performing in situations where the level of danger is borderline between acceptable and unacceptable. In these situations the victims are once again the ultimate losers. According the United States Fire Administration “some fire departments and rescue teams choose to function without SOP’s, but SOP’s are vital to have a safe and organized rescue operation” (USFA, 1995, pg. 3-10). The need for SOP’s in possibly violent situations is further exemplified in research conducted by the International Association of Firefighters entitled *Contributing factors to firefighter line of duty death in the United States*. In this research issues with SOG’s and SOP’s are shown as contributing factors in firefighter deaths. It further recommends that departments develop SOP’s specific to “potentially violent situations” (Fisher, E., McDonald, S., Moore, J., Moore-Merrell, L., 2006 pg. 51 line bb).

While SOP’s in-and-of themselves do not save lives, SOP’s such as OM 202.08, Standard Company Operations at SWAT Operations (see Appendix D) from the Orange County Fire Authority of Orange County California allow every employee to know and understand what is expected of them at SWAT incidents. In this SOP the standard types of SWAT operations are spelled out and the department’s expectations of its personnel on these incidents gives clear and

concise guidance to company officers. While this particular SOP may not recognize the unique variables impacting an ASI, the same variables that it has taken many years for law enforcement to recognize, it does give personnel guidance on the actions that they are expected to take. This research has demonstrated that no matter what stance is taken by a department ASI's are a clear and present danger that must be planned for.

In many localities this type of planning is conducted by the Emergency Management agency for that jurisdiction. These agencies create documents such as All Hazards Plans. These plans formulate the roles and responsibilities of those agencies responding to emergencies within that county. This type of plan is in place for the city of Charlotte and Mecklenburg County (Charlotte Fire Department, 2008). Even though this plan addresses terrorism it does not specifically address ASI's either terrorism or non-terrorism based. In the search and rescue annex of this plan fire departments from the jurisdiction effected are given the primary leadership role in conducting rescue operations (Charlotte Fire Department, 2008). However, this document does not address the specifics behind rescue operations at ASI's or what mode of operation is acceptable for agencies with the primary responsibility of rescue.

In order to better respond to ASI's the CFD must determine the course of action that it wants its personnel to take as well as the level of risk that it considers acceptable. These expectations should be made official in the form of SOG's dealing with all SWAT operations and specifically with the ASI threat. Without this standardization responses will be inconsistent and inadequate to deal with these types of situations. In addition there is a need for county wide planning to ensure that there is a coordinated approach to ASI style incidents. This should become a part of the Mecklenburg County All Hazards plan. By expanding the Terrorism annex to differentiate between the ASI style of incident (such as many school shootings as well as

Mumbai style attacks) and those types of terrorism activity traditionally planned for (bombings and WMD attacks) all departments involved will be certain of their role in the operation.

During the summer of 2008 CMPD conducted ASI training based upon their REDS program throughout the city at various schools. This training was scenario based in which responding officers were required to deal with an ASI situation. During this training Battalion Chiefs from the CFD were required to attend and observe. According to many of these Chiefs the observation of this training was very beneficial in that it exposed the leadership of the CFD to how the CMPD plans to react to this type of incident. During the interview with Major Greene of CMPD this training was discussed. According to Major Greene the need for the inclusion of CFD personnel became obvious during the ASI drill which took place in March of 2008 in which CFD and Medic crews were hesitant to get involved due to the fact that the all clear had not been given. The training given in the summer of 2008 gave a great deal of exposure to the Battalion Chiefs by demonstrating how these types of events will transpire. According to Major Greene there is a definite need to extend this training to the company level. By showing company officers how CMPD will react to these situations they can create a situation where company officers will not be reacting blindly to a situation they are unfamiliar with. Company officers will go into the situation knowing what to expect from other responding agencies.

The majority of respondents to the survey who have not experienced an ASI also have not conducted training in this area (57.5%). In addition 68.3% of those respondents who have experienced an ASI have not conducted training at the company level. It may be difficult for many departments to conduct this type of training especially without the assistance of their local law enforcement agencies. There are however many outside agencies that can conduct non-

scenario based training for ASI's. "In North Carolina, active-shooter training became part of the state's law enforcement academy curriculum in 2001. Last month, a rampage at a Carthage, North Carolina, nursing home that killed a nurse and seven elderly patients was cut short when 25-year-old Officer Justin Garner entered the facility alone and wounded the gunman with a single shot. Garner had undergone active-shooter training" (Associated Press, 2009). This shows that once a mode of operation is decided upon and a training program is developed positive outcomes can be achieved. In order to better the response of the CFD to ASI's a response policy should be established and then a training program which gives training at a company level which supports this policy should be conducted. This training should be scenario based and include CMPD, thereby exposing companies to CMPD's mode of operation as well as allow companies to operate within the response structure defined by the CFD.

Emergency incidents can be responded to and mitigated without SOG's and departments all over the country respond daily to incidents that they have not trained for which end positively. While each of these areas is very important in the response mechanism for a department, actions on scene are what make a difference. The CFD prides itself on meeting the needs of its citizens no matter what they are. The mission statement for the CFD states that;

The mission of the Charlotte Fire Department is to minimize the risk of fire and other hazards to the citizens of Charlotte. To accomplish this mission, the Department provides response to and mitigation of fires, medical emergencies, hazardous materials incidents, aircraft emergencies, high angle and confined space rescues, and other emergencies as they arise. These services are

provided immediately to any person who has a need anywhere within the corporate limits of the City of Charlotte. (CFD, 2009)

This mission statement proclaims the department's willingness and self proclaimed responsibility to minimize the risk of other emergencies and to respond to and mitigate other emergencies as they arise. This mission statement coincides with the All Hazards plan which places the responsibility for providing rescue services to the fire department within the effected jurisdiction both in terrorism and non-terrorism related incidents (CFD, 2008, sec IV).

The responsibility to perform rescue operations and the self-proclaimed mission of the CFD to minimize through mitigation the hazards from other emergencies as they arise should aid in the determination what level of response the CFD provides to ASI's. When this is combined with the documented gaps in the community's response mechanisms for ASI's a strong case is built for the CFD to take a more aggressive approach in responding to these types of emergencies. In order to fill the gaps in response as well as to better the CFD's response to ASI's a comprehensive framework should be developed which will provide guidance, training and equipment in order for companies to play a more active role in extracting and treating victims of ASI's.

In order to better the CFD's responses to ASI's a comprehensive approach must be taken which provides a number of things. First, guidance must be provided to company officers that defines what the department's expectations are of them and their company. This should also dictate what the acceptable level of risk is for these companies as well as strategies which can be utilized to mitigate the incident effectively. Second, the department must provide training which supports the mode of operation established by the department as well as complements CMPD's

response through its REDS procedures. In order to highlight inefficiencies as well as efficiencies in the response this training should be conducted through scenario based evolutions that involve all response agencies. Third, the CFD should create and adopt a comprehensive response framework which allows companies to operate at a commensurate level with CMPD officers on the scene.

Any increase in the operational capabilities of CFD companies at ASI's will require companies to take an active role in tactical operations. This is an area that the department is not accustomed to operating within. In order to do this it is imperative that the department answer the fourth research question: How can the CFD take a more active role in tactical operations during ASI's without assuming an unacceptable level of risk for its personnel? This question will be answered by analyzing the fire services approach to dealing with operational risk in order to determine what the definition of the term unacceptable level of risk should be. It will also be answered by looking at both equipment and tactics which will allow companies to safely operate in this type of environment.

Webster's defines risk as "possibility of loss or injury" (Risk, 2009). In relation to ASI's risk is a very real concept that must be taken into consideration. The fire service has for many years utilized the mantra of "risk a lot to save a lot-risk a little to save a little". This can be described as the Fire Service's method of qualifying acceptable levels of operational risk. Operational risk is a concept derived from the banking industry which describes the risks arising from a company's business functions (Operational Risk, 2009). It is further defined by the Bank for International Settlements in its Basel II publication as "the risk of direct or indirect loss

resulting from inadequate or failed internal processes, people and systems or from external events” (Basel, 2001, page 2 sec II subsec 6).

The fire service deals with operational risks through a three tiered approach. This is done first by providing direction and guidance to personnel on how the department expects them to mitigate certain types of emergencies. These expectations are defined through SOP's, SOG's and Tactical Orders provided by the department for its personnel. The second tier used by departments is the provision of necessary equipment to mitigate these incidents, of which many are technical in nature. Through the proper funding of programs along with the testing and evaluation of equipment departments are able to provide the means to mitigate emergencies to their employees. Proper policies and procedures as well as adequate equipment serve no purpose without the training necessary to put them to use. This is how departments provide the third tier to complete this approach to the minimization of operational risk. Departments provide this training by developing training programs that meet the needs for specific types of incidents. These training programs must combine operational policies and procedures with equipment use in order to prepare personnel to deal with the risks created by external events.

Through this three tiered approach departments are able to minimize any losses due to inadequate or failed internal processes, people and systems. However, even with these process departments are unable to totally prevent the risks resulting from external events. At ASI's this means the risk of being shot or otherwise injured by assailants. These are the same risks that the victims personnel are trying to protect are exposed to, therefore, in keeping with the fire service mantra of Risk a Lot to Save a Lot-Risk a Little to Save a Little these risks (from external events) are acceptable. Therefore, this concept implies that any risks associated with inadequate or failed internal processes, people and systems are unacceptable.

In order to take a more active role in tactical operations without placing themselves in unacceptable risks companies must receive guidance from the administration. This guidance must be set forth through SOG's, SOP's, and Tactical Orders. As noted in earlier research for question two, currently there is no guidance within the CFD in regards to these types of policies and procedures. Therefore in order to minimize this type of unacceptable risk the administration must determine what level of response by the CFD is warranted for this type of incident. As mentioned earlier in this research this type of guidance is necessary in order to assure consistent levels of service across the city and across the three shifts.

To begin with the department must decide if we are going to continue to stage and wait on CMPD to give an all clear. If this is the case then we must be willing to accept that we will not play a role that directly impacts the safety and survival of civilians until well into the incident. This was the course of action chosen in the Columbine school shootings (Jefferson County Sheriff's Office, 2000, Fire/Emergency Medical Services Response section) which changed how the Law Enforcement community responds to ASI's. This was also one of the deficiencies pointed out by CMPD in the March of 2008 combined drill (Greene, personal communication, April 29, 2009). As pointed out earlier in this research this method of operation is not cohesive with the current REDS format for CMPD operations.

The other choice is for the department to take on the role of providing trained personnel to follow CMPD officers and extract wounded and non-wounded civilians from areas as they are initially cleared. This operational method will require the building of a system of SOP's, SOG's, and Tactical Orders that will clearly spell out what expectations are and how operations are expected to be conducted. In order to operate safely in this mode the department must be clear

and concise in its expectations and everything must be developed taking into account that this is a new area we are exploring and there will be many unanswered questions.

No matter which operations mode the department chooses to operate in training must be provided in order to prepare personnel for future operations. If the standby mode is chosen then, as pointed out by Major Greene, the training that Battalion Chiefs went through over the summer of 2008 should be extended to the company level. This will allow all personnel to be exposed to CMPD's method of operation. If the choice to provide tactical capabilities is chosen then training must be conducive to this level of operation. Typical Tactical Medics like those from the Colorado Springs, Colorado Fire Department (CSFD) go through rigorous training courses. Battalion Chief Anthony Cerrone of the CSFD Some of these courses are 40 hours for the tactical operations and 80 hours for medical training (Cerrone, Personal Communication, May 7, 2009). The CSFD has 4 tactical medics on duty at all times protecting 414,658 people within 194.5 square miles (Colorado Springs 2009 Budget at a Glance, 2009). This service is provided by an engine company that cross staff's a tactical response vehicle for SWAT incidents. This amount of training is also attended by the tactical medics from MEDIC which are currently utilized by CMPD for its SWAT operations.

Just as ventilation training serves no purpose without the tools necessary to ventilate, tactical medic training must be supported with the proper equipment to operate. This includes personal equipment such as ballistic protection, helmets, shields, BDU's, tactical communications gear, gas masks and lights. This also expands into team equipment such as medical gear designed for operating in this environment, stretchers, rappelling equipment, and forcible entry equipment. The primary concern in ASI's for first responders is the risk of being

shot. It is this risk that must be minimized through the use of proper equipment designed specifically to protect personnel from ballistic injuries.

As with any operations in a new rescue discipline start up equipment expenditures can be the most costly part of the program. It is imperative that if this mode of operation is chosen proper funding is provided for training and equipment. Drug seizure money is a common source of funding and is utilized by departments such as the CSFD (Cerrone, Personal Communication, May 7, 2009) to fund their programs. These types of expenditures are also approved for purchase under Department of Homeland Security grant programs. Even with the best guidance and training personnel will be placed in an unacceptable level of risk if the proper equipment is not provided on a consistent basis.

Discussion

This research has shown that Active Shooter Incidents are a clear and present danger to all communities (see Appendix A). Whether they happen in non-terrorism related attacks such as the Virginia Tech attack or the Luby's Cafeteria attack in Killeen Texas or in terrorism related attacks such as the Beslan school siege, the attacks in Mumbai, India or the foiled attack on Fort Dix they must be planned for. These attacks have taken place in workplaces, schools, churches and public gathering places throughout our country in small towns, large cities and rural communities. When looking at the history of these types of attacks one thing can be consistently said; no community is untouchable when it comes to ASI's.

Over the past 50 years law enforcement agencies throughout the U.S. have evolved in how they deal with ASI's. For many years these incidents were handled with "a healthy dose of commonsense and testosterone" (Armellino, 2007, Different Eras, Different Tactics sec. ¶ 2). However, after the Austin, Texas bell tower attack by Charles Whitman on August 1st, 1966 an

evolution began in how these incidents are handled. This evolution changed course after the attack at Columbine High on April 20, 1999. This attack instigated the development of the Immediate Action Rapid Deployment (IARD) plan by the LAPD's SWAT program developers (MACKO, 1999) which has changed the way that police departments handle ASI's throughout the country. Dealing with the situation by taking immediate aggressive action in a way that halts the shooting has become the normal operating method for many law enforcement agencies. This type of operation increases the survivability for civilians by creating an environment where medical care can begin without waiting for the scene to be totally secure. In this type of scenario many law enforcement agencies operate in a manner which uses contact teams followed by rescue teams (Douglas, 2002). The inclusion of these rescue teams allows for the rapid extraction of victims so that medical care can begin in a more secure area.

The CMPD uses this concept and has trained all of its patrol officers to operate in this manner. However, the CMPD currently does not utilize the rescue team function (Greene, personal communication, April 29, 2009). This means that while they may be able to confront the shooter or shooters very quickly there is no mechanism in place to triage, extract and treat patients quickly. This void in response abilities was demonstrated in the drill which took place March 13, 2008. During this drill it became apparent that CFD and Medic wished to take action but were hesitant to do so until the all clear is given by CMPD (Greene, personal communication, April 29, 2009). This is in part due to the lack of training and lack of proper equipment to do so and in part due to the lack of knowledge of how the CMPD is going to operate on these incidents.

The current way that CMPD operates means that an all clear will not be given until well into the incident and only after secondary searches are conducted. This means that crucial

minutes will be lost out of the golden hour which will lessen the survivability of patients. This is the situation that occurred in the Columbine attack and which many critics say contributed to the death of David Saunders (Macko, 1999). This situation can be dealt with by the inclusion of Tactical Medics in the response mechanism. These medics travel with the entry teams and can render aid when needed. Many departments utilize these medics but with the primary mission of rendering aid to injured law enforcement officers. For CMPD's tactical unit these medics are provided by Medic. Currently medic has six tactical medics in their program (Greene, personal communication, April 29, 2009). These medics respond when on duty or are called in from home for incidents, if none are on duty. Their primary responsibility is to provide care for the CMPD officers and they will assess but not render aid to victims as the team moves through the building (Greene, personal communication, April 29, 2009).

Over the years these types of medics have been successfully used to provide care to tactical officers throughout the country. The benefit of their use at ASI's was demonstrated at the Virginia Tech attack on April 16th, 2007. During the response to this attack tactical medics were part of the entry teams and provided care while rooms were still being cleared. "Of the more than 30 surviving trauma patients- only one died after the scene was secured by SWAT" (Finegan, 2008, Tactical Medics Save Lives section ¶ 1). This incident shows that a coordinated response to ASI's which includes triage, minimal treatment and rapid extraction from within the hot zone allows for a higher survivability for victims. However, there are limitations with this system, mostly based upon the number of victims compared to the number of trained medics who can make entry.

Historically fire service organizations have not taken action at these types of incidents until the scene is secured. This is evident in the fact that of 116 respondents to the survey

conducted for this research 80% of agencies who have experience ASI's and 87.2% of agencies who have not experienced ASI's require their companies to stage. In addition to this, while 63.8% of respondent's agencies have experienced an ASI 68% of respondent's agencies do not have a written procedure in place for handling these types of incidents. The CFD currently operates from within this majority.

The organizational implications of this research dictate that in order for the CFD to respond to and constructively assist with the mitigation of an ASI this must change. Current methods of operation do not provide guidance, training or equipment to personnel in order to operate on these or any other violent scenes. When a search was conducted in order to find any SOP's or Tactical Orders which would pertain to company operations at ASI's none were found (CFD Operations Manual, 2009). In addition the only training that has been conducted was an ASI drill in March of 2008 and CMPD training at which all Battalion Chiefs were required to only observe. With no guidance and no training in these areas one would be safe, and correct, in making the assumption that no equipment is provided to personnel either. In order for CFD personnel to safely operate on these types of scenes improvements must be made in each of these three areas.

No matter what operational mode the department wishes to operate in guidance should be given to personnel so that they are aware of the level of service they are expected to provide. Without this guidance equitable levels of service will not be provided across the city or across the shifts. This lack of guidance will lead to some companies failing to take action due to a hesitancy to assume these types of risks or companies may assume an unacceptable level of risk for their level of training and equipment. Clear and concise guidance on departmental objectives is the only way to prevent either of these two situations from occurring.

There is a noticeable void in the city of Charlotte's response mechanism for ASI's and the CFD is in a position to fill this void. Whether or not the department decides to fill this void is a tremendous decision that should not be taken lightly. In addition, no matter whether the department decides to fill this void or not training is needed for personnel. If the department does not decide to take on the tactical medic discipline then training should be conducted that exposes personnel to the methods currently employed by CMPD (Greene, personal communication, April 29, 2009). This training should include exposure to new SOP's and Tactical Orders which dictate the level of service they are expected to provide. If it is decided that the tactical medic discipline is one that the department feels the need to provide then extensive training must be provided to those personnel involved as well as the remainder of the department. This training should encompass the level of service they are expected to provide and the skill sets necessary to provide it.

Personnel cannot be expected to operate in violent environments without the proper equipment. This type of equipment is not currently possessed by the CFD. Therefore a list of equipment as well as a source of funding must be established in order to provide this service safely. There are many agencies out there that can provide guidance in the purchase of equipment for this type of operation. CMPD, Medic, The Tactical Officers Association and the Colorado Spring Fire Department are only a few of these organizations. There are also many sources of funding including drug forfeiture money as well as federal grants. In order to provide this service, especially as a new service, a consistent stream of funding must be established from the start.

The implications of this research show that there is a void in the response to ASI's that is not being filled by the current method used to provide tactical medic service within the city of

Charlotte. In order for this void to be filled a method of providing tactical medics in a force large enough to have an impact at mass casualty shooting incidents 24 hours a day 365 days a year must be developed. The CFD is the only agency capable of providing this service at this level. Even if this course of action is not taken the CFD must provide its personnel with the guidance necessary to operate safely and consistently in violent environments such as this. This type of event has become more prominent in our society and in order for the CFD and the fire service in general to operate safely in this environment these issues must be addressed.

Recommendations

This research has demonstrated that not only the CFD but the fire service in general is not prepared to respond to ASI's and take action beyond the standby mode. While the law enforcement community has evolved in the way it handles these types of incidents the fire service has not. This holds true within the city of Charlotte also. The CMPD has adopted this new method of operation with its REDS program (Greene, personal communication, April 29, 2009). However, the CFD has not changed its operational mode to support this program or the opportunities to save lives that it creates. With the data gathered and interviews performed for this research the researcher makes the following recommendations.

In order to provide a level of service that is cohesive with the CMPD REDS program the CFD must develop a program of its own that enables the department play an active role at ASI's. It is the researcher's opinion that this program should have the characteristics of a traditional TEMS program but in a format which will enable department personnel to respond to and operate effectively in force at ASI's. In continuing with the manner that special operations disciplines are delivered by the CFD it is recommend that this concept be developed as a

program and not a team. By developing concepts as programs the department has been able to provide specialized services system wide. This is done by addressing what the needs of the entire department are in order to provide the services at a systemic level and not just the needs of the specific personnel conducting the operations. This is done by addressing administrative, training and operational needs on a continuous basis at all levels of the department. By establishing a clear chain of command for the program as well as a continuous funding source the department can ensure that the program is capable of evolving as the specific discipline evolves. The process of program development and management is a direct contrast to the way that teams are developed and managed. The team concept typically implies that only the group or individuals that provide the service require training and equipping in order to handle incidents involving the specific discipline. This methodology typically creates pockets of capabilities that can very easily become alienated from the remainder of the departments capabilities and lead to incidents in which operations are not cohesive and do not flow effectively.

This program should consist of select TEMS companies throughout the city which are trained and equipped to provide tactical medical services to CMPD SWAT officers as well as patrol officers. In order to put this program in service program development should be conducted in regards to SOG's, the determination of what companies will provide this service, the purchasing of equipment, the training of personnel and operational agreements with CMPD.

The first area that must be developed is the SOG portion of the program. Within this area of the program attention should be paid to the equipment and training requirements for personnel as well as the operational procedures necessary to operate in a tactical environment. These guidelines should also address operational considerations for non-TEMS companies operating on the scene of an ASI or other tactical incident. By providing guidance as to what the departments

level of expectations are for both personnel and the program, company officers can develop their personnel in a manner which will make the program both work and also be responsive to the changing needs of the tactical environment. These guidelines should be consistent with the SOG's currently utilized by the CFD in that they should be specific enough that personnel are always aware of what they are expected to accomplish but also ambiguous enough that personnel are allowed the flexibility to deal with issues as they arise.

Once the guidelines for the program are developed the department should determine which companies will provide this service. Depending upon funding this program could be put in place in steps. This would allow companies to be equipped, trained and put in service as funding becomes available. However, the final staffing goal of the program should be determined at the onset of development. Most ASI's begin and end very quickly. In half of the ASI's there were only 20 minutes (Clumpner, Personal Communication, May 23, 2009) between the beginning of hostilities and the end (however many minutes typically pass before the scene is declared safe by law enforcement agencies). This means that in order to capitalize on the life saving opportunities provided by the REDS program companies must be on scene quickly. Mapping conducted by the CFD GIS division shows that creating TEMS companies at stations 22, 12 and 19 the department can place at least four Tactical Medics on an ASI scene with 10 minutes for approximately 95% of the city (see Appendix E). This level of service increases, depending upon response times, in various sections of the city due to overlapping areas of service (see Appendix F and G). These companies along with first due companies could begin extraction, triage and treatment of victims in time for transport to begin well within the Golden Hour.

After the identification of the companies providing this service equipment must be purchased. This equipment should include personal protective equipment (PPE) as well as company equipment. The PPE should be consistent with the equipment issued to CMPD SWAT officers in order for personnel to assimilate into their tactical program. It is imperative that this equipment be of sufficient quality that it provides the level of protection needed to operate in this environment. In addition to PPE, provisions must be made to provide the necessary equipment for companies to make access, provide the necessary level of care and extract patients from the hostile environment.

The estimated equipment cost (Brochu, Personal Communications, May 3, 2009) for placing one TEMS company in service is \$30,774 (Appendix H). These costs consist of PPE, medical equipment and ancillary equipment needed to make access and extract patients from the hostile environment. While the majority of this equipment can be purchased and remain in the equipment cache for a number of years there is specific equipment which has a shelf life. Ballistic protection may only be used for approximately 5 years. After this amount of time this type of equipment must be replaced. With the cost of a heavy ballistic vest being \$2,200 an efficient way of managing this equipment issue must be developed. By limiting the number of ballistic vest provided to 6 per company (these vests must be purchased in sizes that allow for the personnel on that company to have a vest that fits), the extended cost of providing this equipment can be limited to \$13,200 per company. However, it must be noted that this will be a recurring cost every 5 years for the program. There is one promising prospect for purchasing this and other types of equipment. According to Larry Markham who works within the Department of Homeland Security's Buffer Zone Protection program there is an agreement being developed which will allow first responders to buy certain equipment from manufacturers at the Department

of Defense price. According to Mr. Markham this will go a long way in reducing the cost of some equipment for first responders (Markham, Personal Communication May 23, 2009).

In addition to PPE the companies will need medical equipment for both themselves and the patients they will be treating. Due to the fact that CFD operates at a basic life support (BLS) level the equipment needed will be minimal. The cost of this equipment will be approximately \$3,342 per company (see Appendix H). This equipment will consist of hemorrhage control devices and equipment for airway management as well as carrying cases designed for the tactical environment. We must bear in mind that there will be a minimal amount of specialized equipment due to the fact that extracting the victim from the hostile environment is one of the first priorities. This is an additional type of equipment that must be provided. This equipment includes ladders designed for tactical deployment as well as patient carrying devices at a cost of \$2,162 per company (Appendix H). The last type of equipment that must be provided is communications equipment. This equipment must be compatible with the current radios used by the department and each team member must have one. The cost of the communications equipment will be approximately \$2000 (see Appendix H).

The next step will be the training of personnel. There are two areas that each team member must receive training in. These are the basic tactical skills necessary to operate in this discipline and the specialized medical training required to provide care in this environment. This training can be completed in a number of ways. The first priority should be the tactical skills training. According to CMPD this training can be completed in approximately 40 hours. This would consist of the basic training course that they deliver to each of their new SWAT members without the weapons qualification. TEMS companies will receive render safe training which gives them the knowledge in how to disarm and render most firearms safe. In addition they will

receive training on how to utilize each of the weapons used by the CMPD SWAT team in the event that a TEMS member must defend themselves or their teammates. The cost of this training would be minimal due to the fact that the instructors are CMPD staff members who teach this discipline as a normal part of their jobs.

The next section of training required will be specialized medical training. This training could be accomplished by three different methods. The first possible method would be to create a partnership with MEDIC and utilize the skills and abilities already possessed by them to develop an in house program. By doing this the cost could be minimized and a program would be developed that would allow this service to be provided in a cohesive manner which would assimilate the CFD TEMS program into the already established SWAT MEDIC program of MEDIC.

The second possible method of conducting this training could be the utilization of the federal Counter Narcotics and Terrorism Operational Medical Support (CONTOMS) program. According to Denis Fitzgerald of the U.S. Dept. of Health and Human Services, in this program team members would travel to Washington D.C. to attend a 56 hour EMT-Tactical (EMT-T) course at a cost of \$860 per team member (Fitzgerald, Personal Communication, June 2, 2009). This price does not include lodging or meals. While this would be the more expensive method this is a well established course that is utilized by many agencies throughout the nation including MEDIC.

The last possible method of conducting this training would be to utilize CFD Captain Mike Clumpner who is founder and co-owner of Archangel Consulting LLC. This company delivers training in homeland security, public safety and tactical medicine. This would give the

CFD the ability to develop an in-house training course that fits the needs of a TEMS program which has a primary function of responding to ASI's.

Once the training portion of the program is completed and the TEMS companies are operational there will be a need for operational agreements with CMPD. Due to the unique nature of this program the need for cooperation with and assimilation into their SWAT and REDS programs will be a high priority. In order for this program to succeed training must remain a priority. This training should be conducted with both SWAT and patrol officers in order to ensure that TEMS members are accepted and trusted by CMPD officers. Due to the fact that the CMPD REDS program does not take action to rescue victims changes must be made in their way of operating in order for officers to be available to provide security for TEMS members to locate and extract patients. This is an absolute necessity for this method of operation to work.

These recommendations will not ensure a positive outcome for all ASI's. However, by addressing the issues shown in this research the CFD will be able to better respond to some of the most horrific events that a city could experience. By addressing the issues put forth by this research the CFD can create a comprehensive system of responding to ASI's which will greatly increase the survivability of these events for the Citizens of Charlotte.

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