

The Bill Blackwood  
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Less Lethal Response for Patrol Officers  
Evaluating the 12 Gauge Specialty Impact Munition

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An Administrative Research Paper  
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## ABSTRACT

Today many police officers are required to deal with unconventional situations such as armed, non-compliant violent individuals that refuse to comply with officers' orders. Many agencies rely on specially trained S.W.A.T. officers to handle these unconventional situations. The problem lies with the nature of these calls and the response time of specially trained officers. A delay in response could prove fatal to the officer, subject, and innocent bystander and result in costly litigation, and poor public perception.

One option used by many departments is issuing 12 gauge specialty impact munitions (SIMs) to specially trained patrol officers. SIMs provide officers with valuable standoff distance and allow the officer to bridge the gap between talking and deadly force from a safe distance. In order to determine if these 12 gauge SIMs are safe and effective in a patrol environment, a survey was sent to 50 police departments in the State of Texas with a population of 40,000 to 200,000 inhabitants along with a review of current literature.

The results of the research indicate that there are many factors that determine if a 12 gauge SIMs will be a safe and effective intermediate weapon for officers in a patrol environment. These factors include accuracy, munition selection, and availability. Accuracy is the most important factor that officers are able to control. The research found that all 12 gauge SIMs are not created equal. Many SIMs were found to be inconsistent in laboratory tests measuring kinetic energy and accuracy. Availability was also found to be an important factor. Those agencies that do not allow officers in a patrol environment to carry 12 gauge SIMs were found to have an median response time of 30 minutes for SIMs as compared to 6 minutes for SIMs for agencies that do allow SIMs in a patrol environment.

The survey indicates that 21 (55%) of the 38 agencies have used SIMs on an individual at least one time. Twenty-one (100%) of the twenty-one respondents that have used SIMs on an individual report that they feel SIMs are effective weapons for officers in their agencies. The research and review of literature confirms that 12 gauge SIMs, when used correctly, can be a safe and effective intermediate weapon to provide officers in a patrol environment and have been in use in a patrol environment in many police agencies with favorable results.

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## INTRODUCTION

Within the past 40 years law enforcement has seen a dramatic change in how the public views law enforcement and the use of force. Excessive use of force claims, unjustifiable shootings, civil rights violations, civil suits, and criminal suits have all lead to this intense scrutiny and costly litigation for law enforcement. Many of these claims stem from how law enforcement organizations equip and train their officers to deal with unconventional situations.

Unfortunately, police officers are responding more frequently to unconventional encounters involving armed or noncompliant violent subjects who are not an immediate deadly force threat, but are too dangerous for conventional police weapons such as pepper spray or asps. In these situations an officer has limited choices. One choice is to establish a perimeter and attempt to prevent the subject from escaping and wait for the S.W.A.T. officers and negotiators to arrive and attempt to peacefully resolve the situation. One example of these type situations is commonly referred to as Suicide By Cop. Suicide by cop is a phrase used to describe incidents in which individuals, bent on self-destruction, engage in life-threatening and criminal behavior with a lethal weapon or what appears to be a lethal weapon in order to provoke the police to kill them (Hutson, Anglin, Yarbrough, Hardaway, Russell, Strote, Canter, and Blum, 1998). In these situations, patrol officers with many police departments do not possess the intermediate weapons that could prevent the subject from realizing his goal and bridge the gap between verbal force and lethal force while maintaining a safe distance for the officers.

A recent study reviewed 437 officer-involved shootings by the Los Angeles County Sheriff's Department between 1987 and 1997. The study indicates that more than one in ten fatal shootings by officers of the Los Angeles County Sheriff's Department between 1987 and 1997 were provoked by a suicide by cop situation. Of these cases, 13 suicide by cop shootings occurred in 1997 alone (Hutson et al., 1998). The controversies caused by these shootings, public perception, as well as expensive lawsuits, and moral dilemmas have encouraged more police departments to turn to specialty impact munitions (SIMs). SIMs are less lethal devices designed to be shot out of a weapon, usually 12 gauge shotgun, 37 mm gun, or 40 mm gun, and intended to strike a suspect on a specific part of the suspect's body. Upon striking the

body, most SIMs are designed to deliver between 120 and 160 foot-pounds of kinetic energy that will cause blunt trauma resulting in pain. Some have compared the event as being equivalent to being struck by a baseball being thrown by a major league pitcher. The idea behind a SIM is to overcome a suspect's will to resist by inflicting pain to the body while allowing officers the ability to react to a suspects actions and possibly stop a suspects action from a safe distances (Ijames, 2001). In addition to blunt trauma, SIMs can have a tremendous mental effect on a subject such as anxiety, fear, and panic along with the physiological effect of blunt trauma, which is the maximum desired effect of an impact munition (The Training Academy Armor Holdings, 1999).

There are many types of SIMs and less lethal devices on the market today. These devices include pepper balls, electronic tasers, 37 mm, 40 mm, and 12 gauge SIMs. However, the standoff distance of the taser and the cost associated with equipping all patrol officers with the 37 mm or the 40 mm weapons are prohibitive to many departments. The 12 gauge SIMs are reasonably priced and require only a 12 gauge shotgun to deliver the device.

Currently many medium sized police departments do not provide patrol officers with SIMs, but rely on the expertise of specially trained S.W.A.T. officers to deal with these unconventional situations. The problem lies with the nature of these unconventional calls and the response time of specially trained officers. Many times the suicidal subject will attempt to force an officer's hand with fatal consequences or a violent/deranged individual will attempt to go mobile and breach the perimeter. A delay in the response of a SIM alternative could prove fatal to not only the officer or subject, but also an innocent bystander and result in costly litigation, and poor public perception.

The focus of this paper will be to investigate the feasibility of the 12 gauge SIMs in a patrol environment in a medium sized department. Have 12 gauge SIMs performed safely and effectively in a patrol environment in other departments? Would these 12 gauge SIMs be a safe and effective intermediate weapon to provide to patrol officers? What are the costs associated with implementing this program in a patrol environment?

To arrive at the answers to these questions a survey will be developed and sent to police departments in cities ranging in population from 40,000 to 200,000 inhabitants along with a current review of literature and recent case law.

It is hypothesized that the research will support the need of 12 gauge SIMs in a patrol environment. It is also hypothesized that these 12 gauge SIMs will be a safe and effective intermediate weapon to introduce into the patrol environment and would reduce the use of lethal force in certain situations. Additionally, it is hypothesized that if a 12 gauge SIM program is implemented, law enforcement agencies as well as law enforcement officers will benefit from fewer injuries to officers, improved public perception, fewer complaints on officers, and fewer damages awarded in civil litigations.

This research is intended to give law enforcement administrators as well as governmental administrators information needed to evaluate the effectiveness and the cost associated with the implementation of the 12 gauge SIM in a patrol environment.

## REVIEW OF LITERATURE

Impact weapons have been utilized for hundreds of years by police officers. These weapons were hand held and designed to be used within close proximity of the officer. Today, impact weapons such as the ASP baton and the PR-24 baton continue to be important intermediate weapons for police officers (The Training Academy Armor Holdings, 1999).

As early as the 1960's law enforcement recognized the need for an impact weapon that would allow officers to remain a safe distance from a perpetrator and allow the officer to bridge the gap between verbal commands and lethal force. During the 1960's law enforcement began experimenting with and using SIMs. Wood batons were used to quell riots and bean bag rounds began to appear (The Training Academy Armor Holdings, 1999).

The popularity of SIMs has increased appreciably over the past ten years among law enforcement agencies and they continue to be one of the hottest topics in law enforcement today. Currently SIMs are produced in a variety of calibers, classifications, and ranges such as 12 gauge, 37mm, 40mm, flexible, non-flexible, close, standard, and long range. The most popular and widely used SIM used by law enforcement is the 12 gauge flexible baton round (bean bag round) (Breedlove, 2000).

The frequent use of the SIMs within recent years by police has demonstrated that these munitions are both effective and capable of causing death and or serious injury and has lead to debate in the law enforcement community concerning SIMs. On one hand you have large sums of money being awarded to plaintiffs involving civil suits against police officers and agencies after officers were forced to use lethal force without using SIMs. On the other hand you have a number of documented fatalities and serious injuries resulting from the use of SIMs. With numerous serious injuries and eleven reported deaths in the United States and Canada since 1971 attributed to these munitions, it is important for law enforcement to evaluate the use and effectiveness of these munitions.

According to Steve Ijames, death and serious injuries from the use of SIMs are rare, but have occurred. Eleven deaths involving actual SIMs striking an individual have occurred in the U.S. and Canada since 1971. In all eleven cases the chest was the aiming point (personal communication March 4, 2002).

Death occurred in at least nine of the cases as a result of penetration, fracture or cardiac interruption (Ijames, 2001). Similar circumstances have been documented and include thirty-two children having died after being struck in the chest by thrown baseballs (Viano as cited in Ijames, 2001). In two other fatality cases a 12 gauge SIM caused the death of an individual after the SIM impacted the throat of an individual, and another death was caused by a blood clot due to blunt trauma to the head after an individual was shot several times about the head, neck and chest with 37mm SIMs (Hubbs and Klinger, 2000). According to Steve Ijames, it is not the caliber or the type of SIM rounds per se that are causing the fatalities, but it is where the subjects are being struck (personal communication March 4, 2002). The same principal applies for other impact weapons available to police officers. An officer may be justified in using his ASP on a combative subject but if the officer is inaccurate with his strike or the subject suddenly moves and the officer hits the subject in the head or neck, the subject may sustain serious injury or even death.

In order to prevent deaths or serious injuries Mr. Ijames recommends police agencies clearly understand the factors that cause death and/or serious injury, ammunition selection and shot placement (Ijames, 2001). Ammunition selection is important due to the amount of kinetic energy the SIM delivers to the suspect. If the kinetic energy is too high the munition could prove fatal or cause serious injuries. If the kinetic energy is too low the munition may be ineffective. Shot placement is the most important aspect of a SIM. It is dependent on the munition selected and the officer's shooting skills. If the SIM does not go where it was intended to go you risk the chance of hitting an area of the subject that is vulnerable to injury or even miss the subject.

According to an article titled *IACP's Less Lethal Force Options Course* one out of six flat standard square bean bag SIMs strike a target correctly (Sanow, 2001). As a result, these types of 12 gauge SIMs have been linked to deaths caused by penetration of the munition into the subject's skin and accuracy issues. However, a new design, usually referred to as drag stabilized SIM, involves a 12 gauge sock type bean bag SIM that strikes the target correctly and is stabilized in flight by a cloth tail that improves the accuracy of the munition (Sanow, 2001).



Accuracy and kinetic energy have long been a concern when selecting SIMs but there has been little independent documentation concerning these factors. Recently, the Pennsylvania State University's Institute for Emerging Defense Technologies and the Los Angeles Sheriff's Department published a report. The report titled *The Attribute-Based Evaluation of Less-Than-Lethal, Extended-Range, Impact Munitions* provides law enforcement officers with information concerning accuracy, imparted momentum, price, configuration, and manufacture of each type of munition (Heal, 2001).

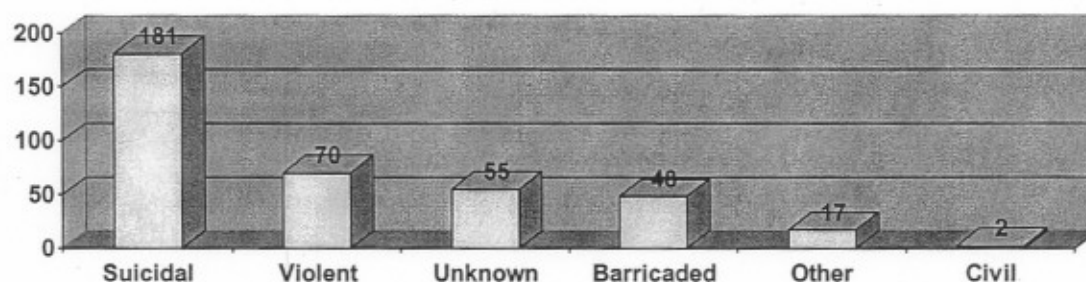
Within the past 20 years police departments have experienced an increase in officer involved shootings that have been attributed to "Suicide by Cop" incidents. Suicide by cop is a term used by law enforcement officers to describe an incident in which a suicidal individual intentionally engages in life-threatening and criminal behavior, with a lethal weapon or what appears to be a lethal weapon, toward law enforcement officers or civilians to specifically provoke officers to shoot the suicidal individual in self-defense or to protect civilians (Hutson et al., 1998).

Throughout the United States, on average one person per day is killed by law enforcement officers. Some individuals who are shot or killed by law enforcement officers during an officer involved shooting are actually attempting or committing suicide. A study published in the *Annals of Emergency Medicine* was conducted of all the officer involved shootings investigated by the Los Angeles County Sheriff's Office between January 1, 1987 and December 31, 1997. The researchers examined 437 officer involved shootings and found that "suicide by cop" accounted for forty-six (11 %) of the documented cases with thirteen of them occurring in 1997 alone. In order to be considered a "suicide by cop" each case had to show evidence of the individual's suicidal intent, evidence they specifically wanted officers to shoot them, evidence they possessed a lethal weapon or what appeared to be a lethal weapon, and evidence they intentionally escalated the encounter and provoked officers to shoot them. The time from arrival of officers at the scene to the time of the officer involved shooting ranged from one minute to six hours twenty-five minutes, with a median time of fifteen minutes. Sixteen (37.2%) shootings occurred within five minutes of arrival of officers at the scene, and thirty (69.8%) occurred within thirty minutes of arrival of officers at the scene. In eleven (23.9%) of the cases officers initially used less lethal force, which included rubber bullets, bean bags, pepper

spray, police dogs, taser, tear gas, and in one case an officer attempted to physically disarm the suicidal individual. In all eleven cases, the use of less lethal force were unsuccessful (Hutson et al., 1998).

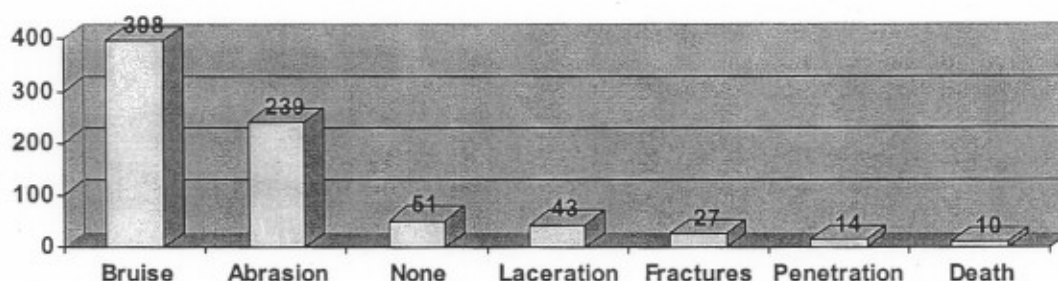
Although these cases of less lethal force were determined to be unsuccessful, there was little independent information available to law enforcement officers concerning SIM deployment and the effects SIMs had on the citizens against whom they were used.

In 1998 a study was initiated by Ken Hubbs and David Klinger concerning the use of SIMs. Requests were made to all law enforcement agencies asking for information about any and all incidents where members of their agency fired SIMs. The study concluded in early 2000. The earliest incident reported occurred in 1985 and the latest occurred in early 2000. A total of three hundred-seventy-three incidents were reported with nine hundred-sixty-nine total projectiles being used during the reported incidents. The study indicates one hundred-eighty-one incidents involved emotionally disturbed persons who exhibited signs of suicidal intent. Seventy incidents involved armed individuals in open places who refused to comply with officer's orders to surrender, but did not appear to be suicidal, forty-eight incidents involved non-suicidal persons who barricaded themselves in a structure or a vehicle, seventeen were listed as other and two were civil disturbances. Fifty-five of the incidents submitted did not indicate what type of situation was involved (Hubbs and Klinger, 2000). Figure one reflects the findings for incident types.



**Figure 1.** A breakdown of incident type for 373 incidents reported in study (Hubbs and Klinger, 2000).

The injuries received from these SIMs ranged from bruising and lacerations to death. In fifty-one cases, no injuries were reported. Three deaths were caused by 12 gauge flat bean bags SIMs, five were caused by 37mm SIMs, and two were caused by miss-loaded lethal munitions. According to the study, over 80% of the eight hundred-twenty-two total documented distances were fired between ten and thirty-nine feet (Hubbs and Klinger, 2000). Figure two summarizes the injuries received in these incidents.



**Figure 2.** Type of injuries for 782 SIM strikes (Hubbs and Klinger, 2000).

Recent court cases involving police shootings of suicidal individuals in which plaintiffs have been awarded large sums of money in civil suits against police officers and agencies have caught the attention of law enforcement administrators around the country. Two of the cases involve how departments train their officers in dealing with unconventional situations such as suicidal individuals. In *Wallace v. Estate of Davies*, 676 N.E. 2d 422 (Ind. App. 1997), officers responded and were confronted by the deceased (Davies) who was intoxicated, suicidal, and carrying a shotgun inside of his residence. After Davies began to lower the weapon he was shot in the chest by an officer and died. The suit claimed the city had failed to adequately train its police officers in dealing with suicidal persons. Davies' widow sued the police department and officers and was awarded \$1,400,000 in civil rights damages and state claims. The case was later appealed and was upheld by an Indiana appeals court.

In *Quezada v. County of Bernalillo* (944 F.2d 710 10<sup>th</sup> Cir. 1991), a district court found the officer negligent and the 10<sup>th</sup> Circuit Court of Appeals affirmed a judgment against the deputy, sheriff and county

that employed him. The deceased (Greigo), who was suicidal, was armed with a pistol, had been consuming alcohol, and was sitting in her vehicle in a shopping center parking lot during early morning hours.

Deputies located the vehicle and contacted Greigo. Greigo eventually pointed a handgun in a deputy's direction and was shot two times by the deputy. The plaintiffs suit claimed the deputy violated Greigo's Fourth and Fourteenth Amendment rights by using excessive force and claimed the sheriff failed to train his deputies and accused the County of tolerating excessive force by its deputies. The plaintiff alleged the sheriff and the County also violated the Fourth and Fourteenth Amendments. The courts found the deputy was negligent when he placed himself in danger by leaving cover and standing approximately five feet away from Greigo, causing a confrontation that resulted in the shooting of Greigo.

The 10<sup>th</sup> Circuit Court of Appeals affirmed the district court's finding that the deputy was negligent and affirmed the judgment against the sheriff and county on the Plaintiff's New Mexico claim. The 10<sup>th</sup> Circuit Court of Appeals reversed the judgment on the 1983 claim because of insufficient factual findings or conclusion of law and remanded it for further proceedings.

Today, officers fear they are faced with a no-win situation. If less lethal weapons are not used the officer can be sued and if an officer has less lethal weapons but chooses not to use it, the officer can also be sued. In the past, a representative of the deceased would claim that the use of deadly force was not justified. Now, in many cases, when it is determined that an officer was legally justified in using deadly force, plaintiffs claim that less lethal alternatives should have been used or been available to officers trained to use them (Sifling-Aardema, 2000).

One of the first cases to consider a law enforcement agencies duty regarding less lethal weapons was *Plakas v. Drinski* (19 F.3d 1143 7<sup>th</sup> Cir.1994). Plakas, who was handcuffed, was being transported to the sheriff's department to be tested for intoxication. Plakas escaped from a patrol car and ran to his fiancée's house. Officers pursued Plakas to the house where he picked up a 2 to 3 foot poker with a hook on the end. Plakas, who was now handcuffed in front of his body, began swinging the poker at officers and commented that either he or Officer Drinski was going die. After approximately 15 to 30 minutes Plakas raised the poker over his head and charged Officer Drinski. Officer Drinski fired one shot and killed Plakas.

A representative for Plakas filed a civil rights action against the county and Officer Drinski. The suit claims that Drinski had a duty to use other non-lethal methods of force to resolve the situation such as the CS repellant, that was carried by another officer, and a canine unit that was offered approximately ten minutes before the shooting. The United States District Court for the Northern District of Indiana decided in favor of Officer Drinski and the county. The case was appealed to the United States Court of Appeals, Seventh Circuit, which affirmed the lower court's decision. The Seventh Circuit correctly ruled, in situations where deadly force is justified under the Constitution, there is no constitutional duty to use non-lethal methods of force first.

Deorle v. Rutherford (242 F.3d 1119 9<sup>th</sup> Cir. 2001) is another case involving less lethal munitions that was recently reviewed by the Ninth Circuit Court of Appeals. The case involved Deputy Rutherford that used a 12 gauge SIM on Deorle who had earlier threatened deputies with a 2X6 board and two hatchets but had dropped the weapons when instructed to do so. Deorle later picked up a plastic crossbow and a can of lighter fluid and began advancing on deputies. After Deorle ignored commands to stop and drop the crossbow, Deputy Rutherford shot Deorle with a 12 gauge SIM striking him in the eye resulting in the loss of Deorle's eye. Deorle sued and the Ninth Circuit ruled in Deorle's favor stating the force used was excessive and unreasonable. The Ninth Circuit also ruled that Rutherford was required to give a warning of the imminent force to be used before using it, thus violating clearly established law. The Ninth Circuit has since reconsidered its opinion and changed the ruling to a recommendation to give a warning, if feasible, of imminent force. The Ninth Circuit ruled the use or nonuse of a warning will be a factor in determining whether or not force is excessive (Ford, 2002).

These cases demonstrate the importance of proper officer training concerning potentially violent police-citizen encounters. In September 2000 members of the Seattle Police Department submitted a report concerning officer training and the use of less lethal weapons within their department. The report titled *A Less Lethal Options Program for Seattle Police Department, A Report with Recommendations* was undertaken following the April 2000 incident that resulted in the shooting death of a former mental patient, David Walker. The report provides officers with less lethal alternatives for containing and defusing

situations involving potentially violent police-citizen situations (Kimerer, Clavedetscher, Eddy, McDonagh, Geoghagan, Stockwell, Ward, Poort, and Walsh, 2000).

The report addresses legal and training issues involving police use of force and recommendations to enhance the less lethal force options available to Seattle police officers. These issues include and are not limited to: the legal authority of police officers to use force to protect themselves and/or others; the concept of the continuum of force which guides officers in the application of reasonable and necessary force to resolve situations with the least amount of risk of death or injury to all involved; the role of less lethal force options within the police response arsenal not as a substitute for deadly force, but as a supplement to it under appropriate conditions and circumstances. In addition the report addressed implementing expanded Crisis Intervention Teams (CIT) to include all patrol lieutenants and sergeants and to increase the number of CIT trained patrol officers so one CIT officer is available per squad per watch on a 24X7 basis. Also addressed were provision for refresher and skill building training for CIT officers, purchase and deployment of the M26 Taser and less lethal launchers (Remington 870 shotguns) using #23DS bean bag rounds to ensure that there is one qualified Taser and bean bag officer per patrol sector squad and patrol supervisors that are equipped with less lethal bean bag kits. Training issues were also addressed and include implementation of a training program for qualification and certification of officers in the use of less lethal munitions to include a four hour training program on the M26 Taser and an eight hour training program on the use of the #23DS bean bag rounds. Also addressed in the report were provisions for re-qualifications and skill-building training on the use of less lethal munitions to include mandatory, annual re-certification, and adoption of appropriate policy and directive governing the deployment of less lethal options and documentation of their use (Kimere et al., 2000).

Before a program such as this can be implemented, law enforcement administrators, as well as government administrators, will consider the cost of the program. Training will consume most of the expense of the program. Administrators must consider who they are going to train to control cost as well as liability. Administrators choosing to train all law enforcement personnel will quickly realize that the annual cost of the training will most likely prohibit the implementation of the program. Administrators must also



consider the liability before providing all patrol officers with 12 gauge SIMs. Since these munitions are designed to be less lethal one must consider several crucial factors that require a high level of decision making ability before deploying the SIM. These factors include but are not limited to the suspect's clothing, size, distance, or probable injury infliction, and target availability. One plan currently being used by many departments is training certain highly trained and experienced patrol officers such as supervisors, field training officers, firearms instructors, and S.W.A.T officers in the use of 12 gauge SIMs (Fourkiller, 2002). This would allow most departments to have SIMs readily available to first responders in the patrol division and would limit the training time, cost, and liability associated with training the entire patrol division.

In order to calculate the total expense of the program, the police administrator must consider how many times a year SIMs training will be conducted, the amount of officers to be trained, and the qualification course that will be required. Experts in the field, such as Ed Nowicki (2001), recommend initial training on SIMs should include both classroom and hands on training. Nowicki suggests that testing knowledge through a written test and of skill through a proficiency test are necessary during training to guarantee the officer possess the knowledge and skill necessary to safely utilize the munition. In addition to follow up training, Nowicki recommends that the training include shooting and team tactics and use of force concepts for both state and federal law in addition to departmental policy. For range training, the administrator should calculate approximately \$5.50 for each SIM round with a qualification course ranging from six to twelve shots.

To supplement this SIM training Larkin Fourkiller recommends force on force training to improve tactics and training. An article written by Larkin Fourkiller (2001) titled *Up in Smoke* considers training and cost issues with SIMs. In this article Fourkiller recommends the use of a 12 gauge Simunition kit for force on force scenarios and reactionary target training. This type of training would be cost effective and realistic and allow training officers to evaluate officer's accuracy and reactions in a high stress environment. A 12 gauge Simunition conversion kit cost approximately \$190.00 along with 500 rounds of Simunition ammunition that can be purchased for approximately \$240.00. In addition, administrators should consider implementing a dedicated SIMs weapon. This consists of a 12 gauge shotgun converted into a less lethal

only weapon. Two additional pieces of equipment are recommended for departments considering implementation of a SIMs program. A stock conversion kit that consists of changing the color of the forearm and stock of a 12 gauge shotgun to a specific color such as florescent orange, green, or blue. The noticeable color will notify all persons on the scene that a less lethal weapon is being deployed. The stock conversion kit can be purchased for approximately \$80.00 per weapon. The second piece of recommended equipment is some type of sighting system such as a battery free ACOG Reflex Sight by Trijicon. Since accuracy is the most important factor that an officer can control, it is important to have a sighting system that is dependable and accurate and allows for quick acquisition of a target with both of the shooters eyes open. This sighting system can be purchased for approximately \$320.00 a weapon.

After reviewing the research information there are many things that become apparent and will be very valuable to law enforcement administrators. First, officer selection, ammunitions selection, and training are the most important part of a SIMs program. Second, suicide by cop and unconventional situations appear to be on the rise in this country and most officer involved shootings involving suicide by cop occur within thirty minutes. As indicated by referenced case law, litigating wrongful death and excessive force claims arising out of unconventional encounters can be very costly. When considering the overall cost it is obvious that money spent on satisfying judgments would be better spent on implementing a SIMs training program for specially trained patrol officers.



## METHODOLOGY

Police officers today are responding more frequently to unconventional encounters involving armed or noncompliant violent subjects who are not an immediate deadly force threat, but are too dangerous for conventional police weapons such as pepper spray or asps. In the past decade many police departments have started equipping patrol officers with SIMs. Have SIMs performed safely and effectively in a patrol environment in other departments? How many agencies have implemented SIMs into their patrol environment? Would these munitions be a safe and effective weapon to provide to patrol officers? If so, what are the cost associated with implementing these weapons into a patrol environment? As stated, it is hypothesized that SIMs are a safe and effective weapon to implement into a patrol environment. Additionally, it is hypothesized that using SIMs would reduce the use of lethal force in certain situations, thus reducing litigation for excessive use of force claims and stress on officers.

Information was gathered from the Internet, law enforcement journals, and instructor manuals concerning the use of SIMs. A survey was developed and sent to 50 police department agencies in the State of Texas with a population ranging from 40,000 to 200,000 inhabitants. Since the 2000 Census information was not published at the time the survey was developed, population estimates were obtained from The Department of Rural Sociology Estimates of the Total Populations of Counties and Places in Texas for July 1, 1999 and January 1, 2000. The survey consisted of thirteen questions related to the use of SIMs. Out of the 50 agencies surveyed forty-two (84%) responded. The agencies were asked if they currently use SIMs, who was authorized to carry them, what calibers are currently used. In addition, issues concerning training were also covered in this survey. Questions concerning the amount of hours required to train officers in SIMs, if recertification is required, and if range qualification is required. For those agencies that currently use SIMs and have deployed them at an individual, the respondents were asked if the SIM caused death or serious injury, if the respondents considered the SIM an effective weapon for law enforcement, and what was the most common type of incident the SIM was deployed on.

## FINDINGS

The survey instrument used was a questionnaire sent to fifty law enforcement agencies in the State of Texas with a population ranging from 40,000 inhabitants to 200,000 inhabitants according to the Department of Rural Sociology Estimates of the Total Populations of Counties and Places in Texas for July 1, 1999 and January 1, 2000. The questions were specifically related to the use of SIMs (12 gauge, 37mm and 40mm) in either a patrol or tactical environment. Out of the fifty agencies surveyed, forty-three (86%) responded to either the first or second survey request. Of the forty-three agencies who responded, thirty-eight (88%) currently use SIMs of either a 12 gauge, 37mm, or 40mm caliber. Thirty-two (84%) out of the thirty-eight agencies use 12 gauge SIMs. Of those thirty-eight agencies using SIMs, twenty-four (63%) allow patrol officer and/or patrol supervisors to carry SIMs in patrol cars and fourteen (36%) allow only specially trained S.W.A.T. officers to use these munitions.

One of the most obvious and interesting facts learned from this research was that SIMs must be available as quickly as possible. When comparing the response time of agencies that currently issue SIMs to patrol and/or patrol supervisors compared to only S.W.A.T. officers it was learned that the response time for patrol personnel ranges from 2 minutes to 30 minutes with the median response time of 6 minutes and the response time for S.W.A.T. officers ranges from 5 minutes to 60 minutes with the median response time of 30 minutes.

Another important issue was the importance of training with SIMs. When each of the SIM fatality cases were examined by munition caliber it was found that 37mm SIMs and 12 gauge SIMs were involved. According to Steve Ijames, the chest was the aiming point of all of these deaths, therefore officers should be trained not to use the chest as an aiming point unless the circumstances dictate otherwise (personal communication March 4, 2002). The sternum and rib cage do an excellent job of repelling the impact energy and, on the rare occasion a SIM overcomes the resistance of the chest, death or serious injury is likely to occur (Ijames, 2001). It is important to note that even though the chest was the aiming point in all of the reported SIM deaths, the SIMs did not actually strike the intended target of the chest in at least two deaths. A 12 gauge SIM striking the throat of an individual caused one death, and another death was caused

by a blood clot due to blunt trauma to the head after an individual was shot several times about the head, neck and chest with 37mm SIMs (Hubbs and Klinger, 2000).

Shot placement is the most important, and most likely the only factor officers can control, and is therefore an important issue to cover in training. Of the thirty-eight agencies that currently use SIMs, thirty-seven (97%) currently require at least one training hour before equipping their officers with SIMs. The number of hours required for training ranged from 0 hour to 40 hours with the median required time being 8 hours of training. Further, twenty-seven (71%) of the thirty-eight agencies currently require yearly certification of their officers. In addition, thirty-four (89%) of the thirty-eight agencies currently require range qualification before an officer is certified to carry SIMs.

Twenty-one (55%) of the thirty-eight agencies that currently provide SIMs to their officers reported having utilized them. Of these twenty-one agencies that have deployed SIMs at individuals, two (9%) reported that the SIMs caused death or serious injury during deployment. When asked what was their most common situation SIMs were used in their agency, eighteen respondents reported suicidal situations the majority of the time, three respondents reported SIMs were used on violent non-suicidal situations, and four respondents reported both suicidal subjects and violent non-suicidal situations as most common. No respondents reported using SIMs on civil disturbance situations. Of the twenty-one agencies that reported deploying SIMs at an individual, twenty-one (100%) respondents reported that they feel SIMs are effective weapons for law enforcement personnel.

### Discussion/Conclusion

Within the past 40 years law enforcement has seen a dramatic change in how the public views law enforcement and the use of force. Excessive use of force claims, unjustifiable shooting, civil rights violations, civil suits, and criminal suits have lead to intense scrutiny and costly litigation for law enforcement. Many of these claims stem from how law enforcement organizations equip and train their officers to deal with unconventional situations. One step that the law enforcement community has taken to better train and equip its officers to handle these type situations is equipping them with SIMs.

The purpose of this research was to investigate SIMs used in other medium sized departments to determine if they were a safe and effective weapons to provide to patrol officers. In addition, training costs were also investigated to give law enforcement professionals an idea of how much money it would take to implement a program.

It was hypothesized that 12 gauge SIMs for patrol officers would be a safe and effective weapon to provide officers when dealing with certain armed non-compliant subjects. It was also hypothesized that 12 gauge impact munitions would save lives, decrease the use of deadly force, decrease stress on officers, and reduce the liability of officers and departments. The research revealed that 12 gauge SIMs are safe and effective if used properly. In addition the research indicates the most important factors that play a role in the outcome of a SIMs deployment are accuracy, training, time, munition selection, and the officer. Accuracy was discovered to be the most important factor of all. There are many parts of the human body that are vulnerable to impact munitions. If struck, these areas could result in serious injury or death to the individual. Accuracy depends on the munition selected and the officer in charge of deploying the round.

Time was also discovered to be a factor. When reviewing the Annals of Emergency Medicine article titled *Suicide by Cop*, the time of arrival of officers at the scene to the time of the officer involved shooting ranged from 1 minute to 6 hours 25 minutes, with a median time of 15 minutes. Thirty-seven percent of the shootings occurred within 5 minutes of arrival of officers at the scene, and almost seventy percent occurred within 30 minutes of arrival of officers at the scene (Hutson et al., 1998). This information in conjunction with the response time information learned from the survey indicates that ten (71%) of the

fourteen departments that do not provide SIMs to patrol officers would not have SIMs available prior to a shooting taking place in 70% of the shootings in the Suicide by Cop study.

The research and survey results support the hypothesis that 12 gauge SIMs in the patrol environment are a safe and effective weapon when used properly and will give officers an effective way to bridge the gap between verbal commands and deadly force while enabling the officer to maintain a safe stand off distance. The research also supports the hypothesis that lives could be saved if a SIMs program is implemented in a patrol environment, thus reducing stress on officers caused by the effects of having to use deadly force. However, there was no quantifiable way to determine if officer and departmental liability would decrease if officers used SIMs instead of deadly force, but it seems only logical that it would.

This research is relevant to all police agencies. With hundreds of documented cases, case law, munition evaluations, and price estimates, law enforcement professionals possess enough information to justify and support the implementation of a SIMs program in a patrol environment. Agencies that currently do not have a patrol SIMs program should strongly consider the implementation of one, if only for moral reasons.

Implementing a SIMs program into the City of Rowlett Police Department would consist of training all supervisors, firearms instructors, field training officers, and S.W.A.T. officers assigned to patrol. At the current patrol staffing levels, this selection would allow for twenty officers to be trained in SIMs. A total of seven weapons would be required for this program. In order to acquire seven dedicated less lethal weapons at the lowest price, 12 gauge shotguns currently owned by the Rowlett Police Department could be modified for approximately \$80.00 each. The modification would consist of changing the existing wood stocks to a clearly marked fluorescent orange, green or yellow forearm and stock. Using a clearly marked weapon will notify all involved that a less lethal SIM is being utilized instead of a lethal round. On average 12 gauge flexible baton rounds cost approximately \$5.50 each. Using six to twelve rounds per year for qualification, the Rowlett Police Department should estimate approximately twenty rounds per officer for the first year. This would ensure that all selected officer are properly qualified in the use of SIMs. With the current proposal of twenty officers the total ammunition cost for the first year is estimated at \$2,200. In all,

implementing a 12 gauge less lethal program for the selected patrol officers of the Rowlett Police Department would cost approximately \$5000 in training ammunition and initial equipment. After the initial purchase the yearly cost would be approximately \$2390 in training ammunition.

Death and serious injury are a major concern for law enforcement professionals especially when dealing with a munition that is not designed but is capable of causing death and serious injury. Through proper training officers will understand the proper way to deploy these munitions and minimize the potential for death and serious injury. The research and review of literature confirms that 12 gauge Sims, when used correctly, can be a safe and effective weapon to provide officers in a patrol environment and have been use in a patrol environment in many police agencies with favorable results.

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