

THE FUTURE USE OF LESS-LETHAL TECHNOLOGIES

Article

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Introduction

The use of less-lethal technology and weapons has risen to a national level of interest as a result of recent terrorist attacks on America. Airlines, military, and national security interests have intensified research and testing of various technologies in response to the increased call for public safety and security. The airlines industry has been pressed to quickly implement much higher levels of safety, weapons, and technology than in the past. Those used by local law enforcement over the past several decades are being examined and tested for use in today's broader environments. As these weapons and tools are more broadly used, and the public becomes more aware of their capabilities, we wonder what will be the expectations of police agencies to use them instead of traditional weapons?

Recent significant events, such as the Rodney King incident motivated law enforcement to find ways to control physically combative individuals with a level of force that reduces potential for injuries to both officers and subjects.¹ In the Rodney King incident, Los Angeles police officers deployed a variety of less-lethal options against King, including physical force, impact weapons, pepper-spray, and a taser stun-gun; however, they were relatively ineffective. The public's reaction resulted in massive riots, ousting of the Chief of Police, permanent damage to police and community relations, and major reforms within the Los Angeles Police Department.

In 1998, police officers in Riverside, California responded to a report of an unresponsive woman sitting in a locked car, with the engine running and a gun on her lap. Four officers surrounded her car and attempted to break out a window to revive her. Reportedly, the woman reached for the gun on her lap, and was subsequently shot and killed by officers.² This event also ignited major unrest within the Riverside community, which ultimately led to termination of four officers, an investigation by the California Department of Justice, and a stipulated agreement between the City of Riverside and the California Attorney General's Office. Though the officers were eventually reinstated, the damage had been done.

In February 1997, Lorenzo Collins, a mental patient, fled from the University of Ohio Hospital, dressed in pajamas and armed with a brick. He was chased by Cincinnati and University Police Officers, and eventually surrounded by fifteen officers who repeatedly ordered him to drop the brick. Two officers fired four rounds, killing Collins, because they felt their lives were in danger. The officers sprayed OC spray on Collins several times, with no effect. They requested a supervisor to respond to the scene with a taser stungun, as only supervisors were allowed to carry tasers. Collins was killed before a supervisor arrived on scene.³ This incident led to large and frequent citizen demonstrations and protests. The Cincinnati City Council requested the United States Attorney General's Office investigate the shooting. This, and several other police shootings in Cincinnati, led to large-scale riots and a widespread call for reform within the police department.

Terrorist attacks on America on September 11, 2001, have significantly accelerated an interest in less-lethal technology and weapons. As the country began to regroup following the attacks, an apparent major issue was how could airlines be made more secure. The airline pilots' union demanded approval for airline pilots to be armed with firearms. The United States legislature quickly assembled a bill that would, in fact, allow pilots to be armed. President Bush vetoed the bill.⁴ During the debate, United Airlines chose to train and arm their 13,000 pilots with taser guns as a means of cockpit defense.⁵

There are three conditions developing within society that may accelerate the future use of less-lethal weapons by law enforcement. These include police-assisted suicides, assaults against police officers, and the number of unrestricted mental-health patients in society.

A police-assisted suicide incident, or "suicide by cop," refers to an event in which a subject engages in behavior that poses an apparent risk of serious injury or death to others, with the intent of precipitating the use of deadly force by law enforcement personnel.⁶ A recent study suggests that nearly eleven percent of fatal shootings by officers of the Los Angeles Sheriff's Department are provoked by suicide. The study examined 437 officer involved shootings that occurred in Los Angeles County between 1987 and 1997. In twenty-four percent of the shootings, officers initially used less-lethal weapons that were unsuccessful in preventing the subsequent shooting by a police officer. The study could not determine how many incidents in which less-lethal methods were used were successfully ended, but concluded that less-lethal weapons were most effective

when used as a diversionary device and followed by immediate apprehension efforts.⁷

On the average, police officers are not being assaulted more frequently than in the past. In California, approximately 6,849 assaults on police officers occur each year. Of those assaults, about five percent involved a firearm. The remaining assaults involved the use of knives (2.5%); other deadly weapons (13.6%); and hands, fists and feet (79%).⁸ Although such assaults do not appear to be increasing, there is a strong perception among police officers that assaults against them continue to increase.

Mental health treatment issues will impact the future use of less-lethal weapons by law enforcement. Before 1967, many of the mentally ill were institutionalized and generally kept hidden from the public. In California, The Lanterman-Petris-Short Act was signed by then Governor Ronald Reagan which took effect in 1969. The legislation restricted the time a patient could be confined and prohibited forced medication. This measure effectively emptied mental institutions and transferred previously incarcerated mental patients to community treatment facilities or other forms of housing within regular communities. These individuals generally responded well with intense supervision; but without such, these patients often quit their medications and/or turned to using street drugs.⁹ The effects of this legislation spread to a national level as the federal government eventually adopted standards similar to California. This condition has contributed greatly to a greater number of interactions between police and mentally ill subjects, often ending in violent confrontations.

Historical Perspective

Over the years, officers have been armed with a variety of less-lethal weapons. The most common have included batons, billy-clubs, and weapons designed to use kinetic energy to disable and subdue a suspect. Over the past thirty to forty years, chemical agents have become a popular alternative to blunt force weapons; and most recently, electrical stimulation weapons have generated significant interest.

Law enforcement has experimented with less-lethal weapons developed by the military, and over the years, have converted them to civilian use. An interesting event occurred during the United Nations Peacekeeping Effort in Somalia in 1993. The military was faced with hundreds of unarmed civilians and was unprepared for large scale crowd control. Several Marine Reserves who were also Los Angeles Police Officers, introduced less-lethal weapons they were using in law enforcement, to their military commanders. The commanders later acquired the less-lethal weapons; trained soldiers to use them; and effectively deployed a variety of weapons, including stingball grenades, plastic and rubber bullets, soap foam barriers, and sticky foam laced with irritants.¹⁰ The successful use of these weapons prompted the military to commission the Joint Non-Lethal Weapons Program (JNLWP).

The purpose of the JNLWP was to provide the most current and accurate information relative to non-lethal technologies, to the Joint Services and other government activities, which required the use of restrained measures in the performance of their mission. They also provided the Joint Chiefs of Staff and

other responsible agencies, with recommendations regarding the application of non-lethal technologies on a global basis through a lifecycle perspective, including research, development, production, and their deployment.¹¹

Research indicates there are three primary classifications of less-lethal weapons commonly used by law enforcement. A weapon's effect and/or the tactical advantage the device gives an officer are primary considerations. The three types include pain compliance and kinetic energy devices, distraction weapons, and weapons that override a body's neurological system.¹²

Pain compliance weapons, as their name implies, gain compliance through direct or perceived pain. They are normally deployed to control individuals and groups; and include batons, billy-clubs, beanbag rounds, and rubber and plastic bullets.

Distraction weapons are designed to incapacitate a subject through confusion, sensory impairment, and/or physical distraction. While a subject is temporarily distracted or entangled, officers can move in and physically control the subject. These weapons are often deployed for crowd control, and include chemical sprays, teargas, sticky-foams, flash-bang grenades, nets, net-guns, and other similar physically overpowering devices.

Weapons that override the body's neurological system include two varieties: 1) Chemicals and drugs, and 2) Electrical stimulation through conducted-energy (CE) weapons. Nerve agents, drugs, and chemical weapons are inherently unsafe and difficult to administer. For law enforcement use, CE devices include stun-guns, hand-held stun devices, and a variety of devices

currently being developed and tested. The taser is the most common existing CE weapon deployed for law enforcement use. Currently, two primary companies, Taser Technologies and Taser International, produce taser weapons.

History and Development of the Taser

In the mid-1960s, as a result of civil unrest in the United States, President Lyndon B. Johnson formed a Blue Ribbon Commission on Crime to review various ways of quelling increased violence in our country. The Commission recommended police evaluate possible non-lethal methods of controlling violent behavior. When the Commission presented its recommendations to national media, a gentleman named John Cover, who had read an article about a hiker who grabbed onto a high voltage wire, became frozen to it for several hours and lived to tell his story, began developing an idea of a high-voltage, low-amperage, pulsed weapon that could knock a person down without inflicting injury. In 1970, Cover built his first prototype electrical weapon, which he called the TASER, an acronym for the Thomas A. Swift Electrical Rifle, named after the Tom Swift fantasy stories of Cover's childhood.¹³

The taser, however, lacked popularity because it used gunpowder in its delivery system and was similarly shaped like a flashlight; and was, therefore, classified as a weapon similar to a machinegun. Also, the low-wattage of the electrical pulse (five watts) was ineffective. Government regulations restricted the weapon's use to only military, law enforcement, and individuals who had special permits. In 1980, the LAPD purchased and deployed 700

tasers. Although this event boosted the popularity of the taser, it remained relatively obscure.¹⁴

In 1993, brothers Tom and Rick Smith, motivated by the shooting death of a close friend, founded Taser International and set out to develop an alternative weapon that could debilitate a subject without killing him/her. The brothers teamed up with Cover to redesign his original invention. They changed the cartridge propellant from gunpowder to a nitrogen gas system, which eliminated the classification of the weapon as a firearm. This new weapon had a high failure rate, primarily because of its seven-watt design; and because of a legal decision, could not be sold to law enforcement until early 1998.

In December 1999, Taser International introduced the Advanced Air Taser M26. This new model had been increased to twenty-six watts and was shaped like a handgun, increasing its accuracy and appeal to law enforcement. The increased wattage significantly improved the weapon's incapacitating ability.¹⁵

Today's taser works by short-circuiting the body's electrochemical receptors. It sends an electrical current through the individual's body, which interferes and overrides the body's neuromuscular system, and voluntary muscle control is lost. As a result, the subject will usually fall to the ground or freeze in place.¹⁶ Low amperage prevents the electrical current from causing significant injury, with only a very small irritation/burn resulting from the electrical contacts and removal of the darts from the body. The electrical summary of the Advanced Taser M26 is:

* High Voltage = 50,000 Volts

- * Power = 26 Watts
- * Low Amperage = .162 Amps
- * Safe Energy = 1.76 Joules Per Pulse (Medical Defibrillators have more than 150 Joules Per Pulse).¹⁷

The Advanced Taser has several limitations. To be effective, the weapon must deliver an electrical charge through two thin wires to the weighted darts that must make contact with the target. Currently, the maximum range of the weapon is twenty-one feet. The most common reason for a failed deployment is lack of a good contact with the targeted subject.¹⁸ The taser was not developed or intended to replace deadly force, but there may be misperceptions among the public and law enforcement relative to its capabilities and applications.

There are misperceptions that tasers can:

- * Ignite blasting caps or explosives.
- * Damage nerve tissue
- * Cause serious burns
- * Cause urination or defecation
- * Harm a fetus
- * Affect a pacemaker

These are all misperceptions and, furthermore, no deaths have been directly attributed to the use of a taser.

Although tasers may seem to be an ideal less-lethal weapon for law enforcement, some civil rights groups would like to see them banned. Following several in-custody deaths that have occurred after a taser weapon was used,

Amnesty International and the Pennsylvania Chapter of the American Civil Liberties Union have called for a moratorium on the use of Tasers as a less-lethal police weapon until their affects can be further studied.¹⁹ In each of the incidents investigated, the subjects who had been subdued with a taser, later died due to some other cause; however, because a taser was deployed prior to the death, media and others have capitalized on negative public misperceptions.

In an interview with Patrick Smith, Co-Founder of Taser International, the historical development of less-lethal weapons, eventual development of the Advanced Taser M26, and future implications of taser-like weapons were explored.²⁰ The following is a synopsis of the facts and opinions expressed.

Smith reported that approximately 25,000 Advanced Tasers M26 units are currently being used by over 1,500 law enforcement agencies, primarily in the United States and Canada. According to Smith, the taser is a new tool and opportunity that, in many cases, can avoid a situation where an officer must use deadly force to defend his or someone else's life. The first true generation of non-lethal weapons includes impact weapons and munitions. A baton and blunt physical force have been used as an alternative to a firearm. The second generation of weapons included chemical sprays that have come on line over the past thirty to forty years. The third generation of weapons included the taser, which attacks the sensory nervous system.

The September 11, terrorist attacks brought recognition of tasers to a new level of awareness. United Airlines bought 1,300 units, which included 2 for every flight deck, and spent over \$16 million on training its pilots and crews on

how to use the taser. This was much more economical than providing weeks of training and ongoing re-certification necessary to arm pilots with firearms. Prior to this event, law enforcement agencies have been quickly deploying M26 units in response to the highly publicized police shootings and alleged beatings. The public outcry from these events has pushed law enforcement agencies to seek out alternative weapons and tools to arm their officers with for handling physically aggressive subjects. The baton and chemical sprays have their place, but there is a need for weapons that have the ability to quickly and effectively control subjects without the appearance of violence on the part of officers. The Taser fits this need and is the most effective knock down weapon currently available, short of deadly force.

Furthermore, Smith explained that though there are some experimental conducted energy weapons being developed, unless there is a quantum leap in technology, the Taser would be the standard for several years to come. For the next five to ten years, wire conductors will continue to be the only viable delivery system. Future Taser weapons will include multiple shot capabilities, longer range, and better portability. Smith believes every officer should be equipped with a conducted energy weapon, but until the technology gets to the point where a Taser can fit on an officers duty belt, like a radio or flashlight, field deployment will remain limited. This is unfortunate because of the spontaneous nature of police shootings, Taser weapons will not only reduce injuries to officers, but more importantly they will reduce the number of police shootings.

Use of Force Doctrines

There are two primary use of force doctrines common within the law enforcement environment. The most doctrine is often referred to as the use of Force Continuum. The more contemporary doctrine is referred to as the Use of Force Paradigm. A continuum is a stair-stepped approach to applying the proper amount of force to overcome resistant force. Essentially, a continuum requires officers to escalate progressively from one level to another until they have control of the suspect. Then, once the suspect decreases resistance, officers must de-escalate their actions to an appropriate level.²¹

Unlike a continuum, which implies a successive progression through steps, the use of force paradigm is a set of parameters in which an officer has options to respond appropriately, which includes reasonable application of force. The officer must be able to evaluate and recognize the problem or potential threat, then apply the appropriate tool for the situation rather than the sliding scale of the use of force continuum.²²

Regardless of the use of force doctrine a law enforcement agency subscribes to, the questions that must be answered are where do less-lethal weapons fall within the continuum and what are their parameters for use. In this regard, there is much disparity. Some agencies have placed the use of tasers at a higher level than using a baton or kinetic energy weapon. Most agencies tend to set parameters which place the use of a taser at a higher level than chemical sprays, yet lower than that for the use of a baton. Captain Sid Heal, less-lethal weapons expert with the Los Angeles County Sheriff's Department has

expressed that the use of tasers should be placed lower on the use of force scale than even chemical sprays, if not for the minor injuries caused by the darts.²³

Summary

Numerous high profile incidents of alleged police brutality incidents have pushed law enforcement to reexamine the types of tools, weapons and use of force policies that have existed in the past. Traditional less-lethal weapons which include pain compliance and distraction weapons still have a legitimate place in daily police operations. However, the technology of conducted energy weapons has evolved rather rapidly in the last few years and the idea of using electricity to overcome violent offenders is quickly proving to be a safe and effective alternative to traditional weapons and tools. There are serious limitations to these weapons and much misperception about their capabilities. However, conducted energy weapons will likely evolve to be the most versatile tool available for line level police officers.

In order to forecast the future use of less-lethal weapons in law enforcement, we must first identify trends that may influence such use. These trends were identified as follows:

- 1) Number of mental illness patients in society - More mental-health patients create more opportunities for police officers to encounter individuals who exhibit abnormal, and often violent, behavior.
- 2) Level of community partnerships between law enforcement and social service agencies - More partnerships with social service agencies will

broaden the scope of police officers' duties and make them more aware of resources available in their community.

3) Level of public awareness due to media exposure - As more less-lethal weapons are deployed and incidents arise where such weapons could or should have been used, media scrutiny will increase, thereby raising the public's awareness.

4) Level of violent crime committed by youthful and female offenders - There is an inherent non-acceptance of police officers using deadly force against women and youthful offenders.

5) Level of funding for police services - Economic trends will have a significant effect on the amount of funds available for new equipment.

6) Law enforcement training in the handling of mentally-ill and/or violent individuals - The panel discussed the ongoing need to provide an adequate level of police officer training to deal with the changing environment; specifically, mentally- and emotionally- disturbed individuals in society.

7) Socio-economic level of the community - The lower the economic health of a community, there is less positive interaction between the public and law enforcement.

8) Use of designer and prescription drugs - The development and use of designer drugs could lead to many more people self-medicating themselves for depression and other forms of mental illness.

9) Amount of community events requiring crowd control

10) Level of assaults on police officers - If the level of assaults on police officers increases, we can expect to see an increase in less-lethal technology used as a defensive weapon.

A Desirable Future

For all outward appearances, David Graham seemed to be a normal man. He earned a modest living owning and operating a small convenience store located in a middle-class neighborhood. Over the past five years, business had not done well. Approximately one-half mile away, the "City" had allowed the building of a large shopping center that included a twenty-four-hour convenience store, part of a national chain. Graham opposed the development of the center and made a presentation at the City's Planning Commission meeting; however, the development was passed and has slowly pushed him out of business to the point of filing bankruptcy.

Graham did not have any children, but had been married to his wife, Rose, for nearly sixteen years. Their relationship had become rocky in recent years, and Graham blamed it primarily on financial problems. More recently, Graham had been drinking heavily, and Rose had moved out because of her husband's frequent episodes of rage and violence. Rose told Graham she wanted a divorce.

Officer Larry Dean reported for duty at 1700 hours, his normal shift. Dean was a three-year member of the Stockton Police Department and had career dreams of becoming a detective and possibly a SWAT member. Dean and his partner Bob Lewis cleared the station after briefing; and within minutes, they

heard a call dispatched of a man armed with a gun, threatening to shoot himself. Making this situation even graver was the fact the man was perched on a busy overpass that spans Interstate 5. The officers responded code three to the incident.

Both Dean and Lewis, along with the whole Patrol Force, had recently attended twenty hours of training on dealing with mentally disabled persons. During the course, many aspects of dealing with people under extreme situations were discussed. Of special note was the instruction on making initial contact with potential suicidal individuals. Without deliberately thinking about it, both officers took inventory of the weapons and tools they had on their person and in their vehicle, and felt confident in them.

As the officers arrived at the scene, several other officers and a sergeant were getting into position and surrounded Graham in a loose semi-circle. The closest officer was approximately seventy-five feet from Graham. Graham paced back and forth, a distance of about ten feet, and held a small revolver to his head and occasionally to his neck. He appeared to be talking to himself, but would not respond to the officers who were telling him to drop the gun. Making this situation extremely dangerous and confusing was the massive rush-hour traffic-jam caused by the incident. Two news station helicopters hovered overhead in a circular pattern and beamed live shots to their respective news stations.

Dean and Lewis immediately took up a position behind their car and armed themselves. Lewis instinctively took up a cover position and aimed his .40 caliber pistol at Graham, keeping as low a profile as possible. Dean retrieved the

newest “tool” in their arsenal, the Taser M99, long-range, neuromuscular debilitator, more commonly referred to as the “99.” The “99” looked very much like a shoulder-aimed gun and fired a small self-contained cartridge which imbedded itself in the target and delivered three five-second bursts of electrical shock. From their training, the officers knew the weapon had an effective range of fifteen meters and if accurately deployed, could override Graham’s nervous system, rendering him incapacitated for fifteen seconds. This would be plenty of time for surrounding officers to physically take Graham under control.

Dean moved to the corner of his patrol car, with Lewis at his side. Both officers were relatively shielded. Sergeant Ross attempted to talk with Graham via a loudspeaker; but Graham would only respond by waving his free hand and yelling that he didn’t want to hurt anyone else, but would if police tried to rush him. Sgt. Ross repeatedly assured him that the officers would not pressure him, and he repeated demands to put down the gun. As Graham continued pacing, he turned his back and was instantly hit in the back by a “99.” Before he realized what had happened, Graham was on the ground and could not control his own hands and legs. Graham did not even know what happened to the gun he had in his hand less than a second ago. Almost just as instantly, three officers surrounded him and placed him in handcuffs.

Graham was transported to San Joaquin County Mental Health for a psychiatric evaluation and kept for a seventy-two-hour observation. He was also cited and released for a misdemeanor violation of brandishing a firearm. Graham received expert psychiatric care and was diagnosed as depressive. He was

prescribed medication, which, along with ongoing counseling, helped him deal with the stress in his life. One month after his suicide attempt, the local newspaper published a letter to the editor, written by Graham. Graham publicly thanked the officers for saving his life. He added that he had every intention of killing himself; but because of the officers' quick and decisive response, he has a new lease on life.

Findings

Until recent events brought this issue to the forefront, less-lethal weapons have received little media and public attention. In a sense, "The cat has been let out of the bag," and the public and media are intrigued by these relatively new technologies. Law enforcement can anticipate an increase in public expectation to utilize these new technologies and rely less on the use of deadly force. Public and political scrutiny of police shootings will increase significantly. Community leaders will readily ask, "Why didn't officers use a Taser or other less-lethal device?" Conversely, there is significant misperception regarding conducted energy weapons and electricity in general. Unless, the media and public are adequately informed and involved with their local law enforcement agency, these misconceptions can easily lead to the banning of such technologies.

As law enforcement officers become more comfortable with these technologies, there will likely be a tendency to overuse such weapons. Though our society is technologically advanced, the basic nature of police work is not. The nature of law enforcement is to deal with people who are in a crisis situation. Officers who are quick to apply new technologies, in lieu of interacting with

people at their basic level, will only work to distance law enforcement agencies from the communities they serve.

Implications On Leadership

The optimistic scenario detailed earlier presented a win-win situation where field officers were equipped with the right tools under the right conditions, with a very desirable outcome. In reality, police high-risk situations are increasing, and the outcomes have often become a political and media free-for-all. Permanent damage to a department's credibility and standing is often the result. In the future, departments will face the routine question, "Why wasn't a less-lethal technology used?"

Law enforcement leadership will continue to face these pressures. Public awareness, and media involvement, will minimize public misconceptions about new weapon technologies. Visionary and participatory leadership will bring the organization to a voluntary, desirable future state where employees properly and effectively utilize less-lethal weapons and are enthusiastic about new and emerging technologies. Law enforcement leaders will need to embrace new ideas and technologies; trust employees; reinforce the organization's mission, vision, and goals through actions; and encourage participation in the decision-making process.

Recommendations

The following are specific recommendations law enforcement leaders should consider when developing a strategic plan and influencing trends and events that will create the future:

- Liaisons should be established with entities that are currently conducting research and development on less-lethal technologies. These entities include the military and its contractors; universities and colleges; and professional organizations, such as the National Institute of Justice, Police Executives Research Forum, etc.
- A comprehensive public awareness plan should be developed and implemented. This plan should include establishing programs designed to inform and engage stakeholder groups that might affect public policy regarding the use of less-lethal technologies. Examples include:
 - Media training and demonstrations
 - Citizen Academy programs and demonstrations
 - Presentations for community action and Civil Rights groups
 - Speaker's bureau for social service organizations
 - Presentations for mental-health organizations
 - Specialized officer training, including:
 - Recognition and handling of mental-health patients
 - Suicide-by-cop/police-assisted-suicide response
 - Cultural diversity, particularly with new immigrant groups

- Development of organizational policies which clearly establish where the use of less-lethal weapons fall within the use-of-force continuum.
- An accountability system established to track every use of force within a law enforcement organization. The use of less-lethal force is often not accounted for, as there is usually little or no injury to offenders. However, an accountability system will provide Management with an ability to monitor overall use and emerging-trends.
- On-going assessment. Law enforcement leaders must actively solicit feedback from the public through a variety of forums and sources. Statistics should be routinely collected on arrests, incidents of resisting arrest, officers injured on duty, and deployment of less-lethal weapons. This will allow managers and leaders to measure the effectiveness of organizational policies and practices relative to the use of less-lethal weapons and technology.

Conclusion

This article asks the question of how public opinion will affect the future use of less-lethal weapons in a large municipal law enforcement agency. The literature research and futures forecasting indicate that the public supports the expanded use of these weapons and technologies in law enforcement. Yet, less

than ten percent of all law enforcement officers have weapons such as tasers immediately available to them in the field and the obvious question here is, “Why is this so?” If there is public support for the increased use of these weapons, why is it not happening? To arrive at the desirable future state where less lethal weapons, specifically, conducted energy weapons are commonly and effectively used in law enforcement, several basic barriers must be overcome. These obstacles include misperceptions by both police leaders and the public, cost, and the development of the technology itself.

Law enforcement leaders must actively support the future development of less lethal technologies and be inclusive with the public and media in the general evaluation of their use. An expansion of their use will stimulate further development of technology, particularly delivery systems and portability. With more successful and safe deployments, in lieu of fatal police shootings, political and financial support can be expected. So, it becomes obvious that the primary obstacles are inter-related and must be approached systematically and collectively. Law enforcement leaders may not be able to directly affect technology development and cost, but can directly affect public perceptions and their own potential misperceptions. Therefore, the priorities in addressing these obstacles begin with law enforcement leadership.

The effective and widespread future use of less-lethal weapons and technology in law enforcement will require police leaders to be innovative, risk-takers, and informed supporters. Within the next five to ten years, we can expect to see an increase in the number of tasers and other conducted energy weapons

being deployed in law enforcement. However, the full potential for widespread acceptance will not likely come about until law enforcement leaders take an active role in pushing for the technological development of the weapons and engage in an awareness effort to gain public support and financing. The expanded use of less-lethal weapons in law enforcement will require law enforcement to intensify police training; stay abreast of new technologies; increase public awareness; and develop and maintain media support.

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