



The Increasing Need for Less-Lethal Weapons and Body-Mounted Cameras

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INTRODUCTION

The Arkadelphia Police Department is a proactive law enforcement agency tasked with providing law enforcement services within the city of Arkadelphia, Arkansas. Arkadelphia has a population of 10,714 residents (State & County Quick Facts, 2014) and is the location of two (2) four-year universities with an estimated enrollment of approximately 6,000 students combined. The police department is comprised of twenty-three sworn officers and seven non-sworn employees. The sworn officers are assigned to specific divisions, all working under the supervision of the Chief of Police. One officer is assigned as a code enforcement officer, one is assigned to a multi-jurisdictional drug task force, two officers are assigned to criminal investigation, and two officers are assigned to the public schools as resource officers. The remaining sixteen officers are assigned to the patrol division and are responsible for responding to all calls for service taken by the department. These officers are tasked with the vast majority of the department workload and are usually the first point of contact for any interaction with the department. The patrol officers are each issued a marked patrol car, with two-thirds of the cars equipped with in-car video recording equipment that was purchased in 2010. Currently oleoresin capsicum (OC) spray and expandable or straight batons are authorized by the department for use as less-lethal weapons. This paper is intended to research the growing need for expanded less-lethal options, specifically Controlled Energy Devices (CED's), and body mounted cameras for not only the Arkadelphia Police Department but for all law enforcement agencies.

CHANGING TIMES

Over the last twenty years technology has grown exponentially, allowing people instant access to untold amounts of information through internet and cellular networks. Advances in cellular technology have made communication faster and piggybacked photographic and video recording capabilities along with it. Whereas twenty years ago very few people had immediate access to encyclopedic information, cameras, or video equipment; now virtually every person in the country has all of those capabilities in the cellular phone in their pocket. As the public has become accustomed to instant access to information they have become more insistent on faster releases of information. The public expects government entities to utilize available technology to protect their constitutional rights and the courts are becoming more insistent on police activities being recorded. In 2012 the Arkansas Rules of Criminal Procedure added Rule 4.7, stating that whenever practical, custodial interrogations SHOULD be recorded and providing for relief if specific exemptions are not in place and recordings are not made (Arkansas Judiciary - Court Rules - Rule 4.7, 2013).

With the recent media attention generated by the officer-involved shooting in Ferguson, MO, record numbers of agencies have suddenly expressed interest in body-mounted cameras (Parrilla, 2014). This shooting also illustrated the effects of public outcry when events are not recorded and result in a person's death. Countless riots, arrests, and violent encounters have occurred as citizens have protested the shooting of Michael Brown by Officer Darren Wilson. The cost of this incident has easily exceeded millions of dollars spent in damages, police man-hours, and arrests. While it is

impossible to say whether Officer Wilson would have had time to activate a body mounted camera, it is certain that a video of the incident would have allowed for a much faster release of information and either prevented or supported the allegations of police misconduct. This incident has captured national attention and, in my opinion, has renewed racial tension across the country similar to the Rodney King incident of 1991, which resulted in over 50 deaths and 2,000 people being injured.

As law enforcement actions are more closely monitored, the use of force is at the top of the list for scrutiny. Law enforcement is tasked with apprehending offenders, preventing violent crime, and is authorized to use force against suspects to accomplish those tasks. Force is authorized as long as the force applied is appropriate, necessary, and justified by the offense committed. In *Graham V. Connor*, the US Supreme Court held that three factors determine whether a use of force is lawful or not; the severity of the crime at issue, the suspect's threat level to officers or others, and the active resistance or flight by the suspect to evade officers. (*Graham V. Connor*, 1989). Perhaps the biggest obstacle for the public and law enforcement to overcome jointly is the lack of public understanding about the implementation of force. Because a large percentage of the population has never been required to use force against another person, whether physical or weapon-based, they have no personal experience to familiarize them with the dynamic nature of a force incident. A second factor contributing to this misunderstanding is that because of the speed of internet-based news reporting, incidents are often reported haphazardly long before any credible gathering of the facts. The result is a perfect storm of public doubt and mistrust of law enforcement which is made stronger not only by a lack of personal experience and sensational media coverage, but also by the rare instances

when an improper use of force does occur. Collectively, those of us in law enforcement must be the first ones to scrutinize our actions and to take corrective action immediately and transparently to the public when applicable. Agencies also must not downplay the use of force in deadly force incidents by mandating less-lethal force attempts that result in officers getting hurt or killed, simply because of a lack of public understanding.

Less-lethal technology has changed rapidly in law enforcement over the last twenty years, which is illustrated by the implementation and usage of Conducted Energy Devices (CED's) such as Tasers, and bean bag or OC ammunition. Bean bag and OC projectiles are both designed to offer distance extensions of existing uses of force, impact (physical striking), and chemical agents. These two weapons greatly enhance officer safety in specific situations but may increase the percentage of suspect injury because of the increased delivery velocity. While both projectile types are an immensely valuable force option their application is so specific that very little or no data is compiled beyond the standard delivery methods.

Consideration of the type of weapon, the amount of damage inflicted, and the likelihood of serious injury, are applicable to every level of force used by law enforcement and the public has come to expect more and more use of these alternative weapons. These factors are putting immense pressure on agencies to record their activities and to utilize the most up-to-date equipment available to minimize injuries and protect the public. Numerous lawsuits are filed against departments annually for violating citizens' civil rights, whether it be unlawful search and seizure, false arrest, or excessive force. More and more often the public is asking why there is no video

available of an incident or why officers used deadly force instead of a less-lethal alternative. For officers, these tools are needed not only to protect themselves physically but also themselves and their agency civilly.

CHANGING VIDEO

While in-car video systems have been widely used in prosecuting law enforcement cases since the 1990's, the systems are expensive and often troublesome to maintain. The current Arkansas state contract price for an in-car video system is \$6,395 per unit (Video Camera - Law Enforcement In-Car System, n.d., p. 2). These systems record video from a static position inside that patrol car and utilize wireless microphones worn by the officer to transmit audio via radio waves to the recording unit in the patrol car.

Several manufacturers have begun marketing small cameras to be worn by the officer on their person, and vary in cost from \$399 to \$999 per unit depending on the manufacturer. On-body cameras allow video recording from the officer's viewpoint, instead of limiting the recording to a static position inside a patrol car. State-level law enforcement agencies conduct the vast majority of their citizen contacts as a result of traffic stops, and in-car video systems are perfectly adequate to record those contacts. County and municipal agencies also conduct traffic stops, but a far higher number of their citizen contacts occur away from the patrol car, whether it be inside a building answering a disturbance call or taking a theft report from a business. The in-car video system may or may not record audio in those situations because of the physical barriers between the audio microphone and the car, and will almost never capture video footage because of the

same barriers. Officers may be able to position their patrol car to face towards the incident location if outdoors but this may also limit their tactical approach to the situation because the parties involved will be able to view the officer's arrival and approach.

Taser International currently markets their Axon Flex body mounted video camera for \$599 per unit, and was selected for this research project because of its mid-range cost and continuity with less-lethal research. The Axon Flex camera units have a cellular phone-size control panel which mounts to an officer's belt and is attached by a small cable to a remote camera mounted near the officer's head or shoulder. The units have an audio microphone mounted within the camera and record both audio and video to the control panel.

The Axon Flex camera system places the remote camera mounting position high on the officer's body. Other on-body systems use a camera mounted within the control panel, resulting in the entire unit be mounted high on the body, usually on the front of the officer's shirt. In personal testing and evaluation of a camera of this type, I observed that the test unit was unable to be securely attached to my satisfaction and moved around noticeably during normal activity. I also noted that while using the camera mounted near the center of my chest, that every day patrol activities like taking notes while taking a report would often result in my hands blocking the camera view. With a shoulder mounting point or higher, not only are most obstructions eliminated but the recording would be more closely associated with what an officer was actually viewing through his eyes. In court, events are judged after the fact on how an involved officer perceived an event to occur and the closer a camera is to the viewpoint of perception, the easier it will

be to understand that perception. The small size and light weight of the remote camera also allow the unit to mount more securely to an officer's uniform, thereby eliminating much of the camera shake of a camera mounted within the control panel.

Body-mounted cameras have proven to protect both citizens and officers as well. A study by the Rialto Police Department showed that use of force by officers against citizens immediately declined when body-mounted cameras were issued. The Rialto study, conducted from February 2012 to February 2013 revealed a 59% reduction in use of force by officers wearing a body camera. The study also revealed an 87.5% reduction in complaints against officers during the same time. (Parrilla, 2014)

CHANGING WEAPONRY

When I began my law enforcement career in 1996, OC spray had just recently replaced CS and CN tear gas as the preferred chemical agent for law enforcement. While OC spray was relatively new, it had already garnered interest from the ACLU, Amnesty International, and other public interest groups, who alleged that OC spray was causing in-custody deaths of arrested persons that had been exposed to OC. The National Institute of Justice (NIJ) funded several studies about in-custody deaths and the use of OC spray and released those findings in published reports. A 2004 study by Charles S. Petty, MD, investigated 63 in-custody deaths nationwide of suspects who had been subjected to OC spray. Petty found that in only two of those cases was OC spray the single contributing factor to death, and in both cases, the deceased had asthma. (Charles S. Petty, 2004)

Taser International was still in its infancy, having been founded in 1993, and did not begin to see widespread law enforcement use until 1999. In that year, Taser began manufacturing the M26 model and marketing it specifically for law enforcement use in addition to civilian models. In 2003 Taser upgraded the law enforcement model to the X26, which is currently being phased out and replaced by the X26P. Relying on completely different technology than the “stun guns” of the 70’s and 80’s, Taser products rely on high voltage with very low amperage charges to disrupt the electro-muscular system. As with OC spray, Taser use generated interest from the ACLU and resulted in numerous studies by the National Institute of Justice. Two studies of in-custody deaths after CED exposure presented to the NIJ investigated a total of 52 in-custody deaths. Of those 52 cases, five listed the CED as a contributing factor but also noted that all five had heart disease factors and high risk for sudden death from other factors. (Michael R. Smith, Robert J. Kaminski, & Geoffrey P. Alpert, 2010)

One of the biggest considerations for police executives in whether or not to implement CED’s within their agency is liability. Improper or illegal use of a CED by an officer could be detrimental to an agency’s relationship with its citizens and to an agency’s budget in civil litigation. Agency policy and close monitoring of all CED deployments should be required; with detailed training in use of CED’s and the related policies revisited regularly through in-service training. Taser International has revised their own policies and their suggested policies after successful civil litigation, identifying the use of CED’s to a higher level of force than before. While Taser International once advocated the use of CED’s against persons displaying passive resistance that is no longer the case. After several court battles and a review by the Police Executive Review

Forum, updated guidelines were published by the US DOJ in 2011. (Forum, 2011) The updated guidelines included many changes to when the use of CED's (referred to as Electronic Control Weapons, or ECW's in the guidelines) is justified and the steps that should be taken to insure the weapons are not used in violation of those guidelines. Those guidelines also provide instruction that in every incident totality of the circumstances must be examined, following the precedent cited above in *Graham V. Connor*. Exigent circumstances may void the application of any of the individual guidelines as long as an officer can articulate the circumstance that required going outside of policy. Another highlighted point in the guideline is that prolonged or continuous exposure of a person to a CED increases the risk of death or serious injury. This basic tenet of any use of force seems obvious to me as prolonged or continuous exposure is not what any less-lethal weapon is designed for, nor would such practice seem to fit into the requirement of only using the force needed to stop the violent or dangerous actions by a person.

The major advantage to CED's is the increased ability of officers to control violent or potentially violent offenders while decreasing the likelihood of injury. The NIJ and US DOJ have done extensive studies of several large agencies both before and after CED implementation that proved both officers and offenders receive less injuries than with other force options (Alpert, 2011). Multiple large agencies submitted data with over 25,000 uses of CED force examined. I have prepared the following table from a report published by NIJ, showing the reduction of injuries after CED implementation in two large departments. (Michael R. Smith, Robert J. Kaminski, & Geoffrey P. Alpert, 2010)

Agency	Suspect Injuries (%)	Officer Injuries (%)
Austin (TX) Police Department	-30%	-25%
Orlando (FL) Police Department	-50%	-60%

The data gathered from just these two agencies compared over 10,000 use of force incidents by examining data from equal amounts of time prior to and post CED implementation. Their results are consistent with the findings in almost every study, though the percentages may be slightly different depending on the independent variables submitted by other agencies. Another interesting trend shown in the studies of use of force is that the use of OC spray provides less reduction of injuries than CED's. My personal observation and experience agrees with those statistics. I have personally observed that when OC spray is used, offenders will continue to actively resist and be aggressive while their ability to do so is diminished. I have also observed that same exposure of officers to the OC spray may also diminish the officer's ability to meet those aggressive actions, though usually to a lesser degree than that of the offender.

CONCLUSION

As technology continues to advance in the future, the public and the courts will expect more use of technology by law enforcement. Currently GPS trackers and drone-mounted cameras are on the leading edge of these technologies and are being closely monitored by both the public and the courts to weigh the value of their use against the possibility of abuse.

Body-mounted cameras have already been implemented by many large agencies with positive results, and numerous others are following that example. The New York Police Department has recently announced a pilot program set for January of 2015 to evaluate use of body-mounted cameras in six different precincts within the city. (Harshbarger, 2014) Less-lethal weapons have been sought by law enforcement for as long as there has been law enforcement, and weapons have progressed from riot batons and billy clubs to OC spray and CED's. The search for the ability to "Set phasers to stun" will always continue in the hope that better, less-lethal, or even true, non-lethal force can be obtained. When accompanied by strong agency policy and training procedures, body cameras and CED's have proven to be great assets to law enforcement, and I believe that will continue to expand as more agencies implement these tools.

ADDENDUM: APD APPLICATION

As part of this research I contacted Taser International to obtain the cost of equipping each of the sixteen patrol officers at the Arkadelphia Police Department (APD) with both an X26P Taser and Axon Flex camera system. Taser International also markets video management software, storage, and docking stations for multiple cameras; as well as their “Taser Assurance Program,” which provides financing plans for total replacement CED’s on a five year plan. Estimates were obtained for each of these programs and analyzed to determine which method would be the most cost-effective for APD. APD has utilized in-car video systems and has an existing video policy and storage plan in place, though it would require a thorough review to include on-body camera usage. The department use of force policy would also require expansion to include CED’s. I have prepared the following spreadsheet from Taser International’s estimates, and will retain

<u>Taser X26P</u>		<u>On-body Camera</u>	
Taser, cartridges, and holster	\$1,083.75	Taser Axon Flex camera system	\$599.00
Initial purchase for 16 patrol officers	\$17,340.00	Initial purchase for 16 patrol officers	\$9,584.00
Download kit, shipping, and extra cartridges	\$787.85	Shipping	\$124.59
Sales tax (9%)	\$1,631.51	Sales tax (9%)	\$873.77
Total initial purchase	\$19,759.36	Total initial purchase	\$10,457.77

Cost to equip APD patrol division with both items \$30,217.13

the estimates for later comparison.

I also analyzed the cost of additional purchases yearly and APD maintaining video in-house as opposed to Taser International’s yearly subscription costs for the TAP program

and video management software. Additional yearly purchases allow for annual evaluation of both units and condition of the equipment without obligating the department to continued financing. The comparison is based on APD annual purchase of four units per year, which would result in all 16 Tasers and cameras being replaced by the fourth year. Assignment to other APD divisions would occur as units become available within the department inventory. Based on the expectation that the units will have a longer service life than a four-year replacement cycle would create, it is anticipated that the yearly cost would quickly decrease even with expanded usage beyond the patrol division. Taser International does not offer the TAP program for the Axon Flex camera systems so the table below only compares TAP to annual purchase of the X26P CED.

Annual purchase (4 of X26P @ \$988.90)	\$3,955.60	Taser Assurance Plan yearly price per unit	\$185.00
Sales tax (9%)	\$356.00	Sixteen unit TAP cost yearly	\$2,960.00
Annual yearly purchase	\$4,311.60	Sales tax (9%)	\$266.40
APD four year replacement cost	\$17,246.42	Yearly total cost	\$3,492.80
		TAP program five year cost	\$17,464.00

The table shows that annual cost of APD purchase is more costly per year but cheaper than the total cost of the TAP program. APD purchase would also allow for complete replacement one year sooner than the TAP program and expanded usage to other APD divisions in a shorter amount of time.

Taser International included quotes for their Evidence.com software and video storage for use with the Axon Flex cameras. This package offers cloud-based video storage, which can be retrieved online for easier dissemination. Taser International recommended 20GB of storage per officer at an annual cost to the department of \$11,040. Because the department has previous video management policies and procedures in place, it is my recommendation that a dedicated video server with an external hard drive for

storage be purchased, with additional hard drives purchased annually. The estimated cost of an in-house server and external hard drive is \$2,500 and would require annual hard drive purchases of less than \$500. This procedure will not allow for cloud-based retrieval of video evidence, but also eliminates the possibility of the system being accessed by unauthorized individuals. The initial purchase of 16 Axon Flex systems and video server would cost the city approximately \$12,500. Following the four-year replacement model used above, the annual cost to purchase four additional Axon Flex cameras would be \$2,611.64.

The initial cost of equipping the patrol division with both the Taser X26P and Axon Flex camera systems is approximately \$32,600, with a recurring yearly cost of \$6,900 for four additional years. Currently six of the department's sixteen patrol cars are not equipped with video recording capability. At current state contract pricing of \$6,395 per unit, the cost to purchase in-car video for those six patrol cars is \$42,000, and does not include installation. I believe this would be an unwise expenditure of our funding and that the purchase of both X26P's and Axon Flex system would be much more beneficial to our department.

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