

**The Bill Blackwood
Law Enforcement Management Institute of Texas**

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**The Effectiveness of Tasers When Compared to Other Non Lethal
Weapons and Where They Belong on the Use of Force Continuum**

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**By
Michael Kester**

**Harlingen Police Department
Harlingen, Texas
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ABSTRACT

Taser guns are becoming more prevalent in the law enforcement industry and have inspired a lot of discussion and controversy. This research will focus on whether or not taser guns are more effective than other mainstream, non-lethal force options (impact weapons and oleoresin capicum spray). The research will also examine where tasers should be placed on a departments' *Use of Force Continuum*? A survey of several Texas Law Enforcement agencies was conducted. Additionally, a review of law enforcement literature was examined and results from other national police agencies were considered for this research. It was found that tasers and OC spray are basically equivalent in effectiveness when dealing with the majority of persons being arrested. However, when used in violent situations with mentally ill or highly intoxicated persons on drugs or alcohol, the tasers were much more effective than OC spray. Tasers should be placed in the same area as other non lethal weapons on police departments' *Use of Force Continuum*, although they are not appropriate for all situations and should not replace other non lethal force options.

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INTRODUCTION

More and more today, police officers are given additional options of non-lethal force to use in dealing with violent and combative persons. Advancements in technology and training have made current non-lethal options more effective and safer for law enforcement. Injuries sustained by officers and suspects have also been reduced by non-lethal force options and this has caused law enforcement agencies to spend millions of dollars on non-lethal technology and training. This has, in turn, led to reduced civil liability. Law enforcement agencies vary on where these non-lethal force options fall in the “Use of Force Continuum,” and which one should be deployed first before moving to a different option.

The definition used by the Author for a “non-lethal weapon” is derived from the Department of Defense. They define “non-lethal weapons” as “...weapons that are explicitly designed and primarily employed so as to incapacitate personnel or material, while minimizing fatalities, permanent injury to personnel, and undesired damage to property and the environment...” (Galvan and Kang, 1; cited Department of Defense Directive 3003.3). Even though the term “non-lethal” is used there is always the possibility of death depending on how the weapons are used; it is that the intended uses of the weapons are to gain compliance and not cause death.

Police use of force continuums have been modified and updated over the years and they vary for department to department based on the actual weapons available and policy. Agent John C. Desmedt of the United States Secret Service created the initial use of force continuum in 1984. (Honings, 1996). For a basic explanation, a use of force continuum states that the level of force that can be used by a police officer in

response to the level of resistance of a subject. As a subject increases his level of resistance the officer will increase his level of force.

Tasers are a non-lethal option that has been around for years. Advancements in technology made by Taser International, Inc. have made modern tasers more effective and safer than the original prototypes. When deployed, tasers fire metal probes into the body of a suspect and a surge of 50,000 volts render the suspect incapable of resisting against the officer. With the exception of small cut where the probes enter the body there is no injury to the suspect. Other non-lethal options impact weapons, for example batons and beanbag shotgun rounds may cause injury to the suspect.

This research will focus on the question: Are tasers more effective than other mainstream non-lethal force options? If so, where should tasers be placed on the Use of Force Continuum? The non-lethal force options to be considered are tasers, oleoresin capicum (OC) spray and baton/asp or other impact weapon. The methods to be used in conducting this research will be a review of current law enforcement literature, periodicals and other research along with a survey of Texas law enforcement agencies. It is anticipated that the research will show that tasers are more effective and safer than the other non-lethal force options and result in fewer injuries to Law Enforcement Officers and suspects.

Law enforcement will benefit by having a better understanding of how tasers save money by reducing injury leave, Workmen's Compensation and Civil Liability. This research will deduce that tasers may be a first option in many non-lethal uses of force situations.

REVIEW OF LITERATURE

In terms of the use of force continuum, it is not any specific model referred to for this research. Almost all law enforcement agencies have standards set in their policies referring to their departments standards for use of force. This study will not recommend a change to any department's current policy but will recommend at what level to incorporate tasers into the current policy, should they decide to add them to their non-lethal options.

Unsurprisingly, Taser International, Inc. is the main authority on taser weapons. Tasers have sparked a lot of controversy lately in that many suspects have died after being shocked by a taser weapon. Amnesty International reported "More than 150 people in the USA have now died after being struck by tasers since June 2001, 61 in 2005 alone" (Amnesty International, 2006, p. 1). They go on to state that "Most of those who died were agitated and/or under the influence of drugs...", and Amnesty International's report shows that only 23 of the coroners report listed the taser as a "contributing" factor (Amnesty International, p. 1). There is a definite lack of independent research on the modern tasers and due to the number of deaths connected (not attributed) to them, it is likely the federal government will conduct their own testing.

What is a taser gun? A taser gun is a conducted energy weapon that deploys probes into the body of a person with a charge of 50,000 volts of electricity. While that amount of voltage seems high it is amperage that makes electricity dangerous. The taser model X26 has an output of 0.0021 amps and 0.36 joules per pulse. For comparison, cardiac defibrillators are greater than 150-400 joules per pulse (Taser

International, Inc., 2004). The charge causes electro-muscular disruption and overrides the sensory and central nervous systems. The result is the uncontrollable contraction of the muscles and as a result, incapacitation of the person. Taser International reports that there are currently over 6,000 law enforcement agencies that use tasers.

According to Taser International (2004), "Conducted energy weapons use propelled wires to conduct energy that affects the sensory and motor functions of the central nervous system" (p.15). However, when a non-lethal weapon can be highly effective and reduce injuries to officers and suspects it needs to be seriously considered by all law enforcement agencies.

This research gathered information from the Chandler, Arizona and Seattle, Washington Police Departments taser use of force reports. Leon Forcum of Chandler, Arizona reported a 97% success rate for all taser incidents for the period of April 1, 2004 to December 31, 2004. "A successful use of the taser is defined as: when the suspect stops their aggressive behavior, complies with the officer(s) commands and/or submits to the arrest or is incapacitated by the taser itself, allowing officers to control the subject" (Forcum, 2003, p.3). The taser successes may include incidences where the taser was only displayed and not actually deployed. The Seattle Police Department reported an 84% success rate from December 2000 to November 2002 (Seattle, p.2).

Oleoresin capsicum (or OC spray) is very widely use by law enforcement agencies. Even though the affects of OC spray may last 15 to 60 minutes, it will not cause any injury to suspects. However, "when the agent is inhaled, the respiratory tract is inflamed and breathing is restricted..." (Onnen, 1993, p.2). "The use of OC on

persons with respiratory problems could, in rare instances, cause death” (Onnen, 1993, p.3). Research by the National Institute of Justice found that there were no respiratory problems among the people tested but that there were increased heart rates and blood pressure in the subjects. (Vilke, Clausen, Schmidt, Clark, Chan, Snowden, & Neuman, 2001).

In a 2004 study, Charles S. Petty, MD looked at 63 incidences of subjects that died after having OC spray deployed on them. In this research, he studied the cause of death and the effectiveness of the OC spray. Dr. Petty found that OC spray was only effective on one out of five violent suspects. This left the other suspects to be restrained, controlled or arrested by other means or force.

METHODOLOGY

This research will focus on the question: Are tasers more effective than other mainstream non-lethal force options? If so, where should tasers be placed on the Use of Force Continuum? The research will show that Tasers are more effective than other non-lethal use of force weapons and in the majority of the incidences can be the first option for officers. It will also show that there are significantly less injuries that occur to officers and arrestees by the use of the tasers.

A survey (*see appendix A*) of a wide range of Texas law enforcement officers was conducted to determine which non-lethal weapons they are authorized to use and how much confidence they possess based on prior experience. The survey also addressed questions on policy issues about their department Use of Force Continuum and whether some options are required to be used first. It will obtain numbers of times each non lethal force has been used and whether the officer witnessed any failure on

the part of the non-lethal weapons. The survey, which was provided to officers during training encounters with the author, will also obtain if other available options were used.

The results will be compared with data from other agencies and information will show the major reduction in officer and suspect injuries. It is the author's belief that there is a higher rate of arrest by use of the taser (as opposed to other non-lethal options) and once officers are properly trained, they have much more confidence in the effectiveness of the tasers as opposed to the other non-lethal options available to them. This does not alleviate the need for the other non-lethal options because the taser is not ideal for 100% of the officer encounters that require some form of force beyond their hands.

For tasers, some positive factors include that it is immediately incapacitating for the suspect; it causes very minimal injury if any can be deployed from up to 21 feet away and it reduces officer and suspect injuries. The negative aspects are as follows: the probes can become dislodged; requires accurate deploying to avoid sensitive areas of the suspect and that the suspect can not comply with commands while the taser is activated.

The positive aspects of OC spray, it causes no injury to the suspects and it is very effective at gaining compliance; while the negative contributing factors are: that it can take several seconds to begin to take affect; the affects can last up to an hour; the suspect must be decontaminated; suspects may become enraged and more violent due to the burning sensation and many times there is cross contamination to the officers.

The positive aspects of a baton are that the display of it may attain suspect compliance; the strikes may "stun" the suspect and allow for the arrest before the

suspect retaliates and it is an excellent tool for holds and escort positions. The negative things are that the strikes will cause injury; it is not always effective; it requires a lot of training to make officers proficient in its techniques and it may cause suspects to become more violent.

FINDINGS

The survey conducted had the following findings: The non-lethal weapons the departments are authorized to carry: 87%-OC Spray, 87%-Baton, 39%-Beanbag shotgun, 22%-Taser. For the officers, the percentage of time these non-lethal weapons failed: 11.5%-OC, Spray 35%-Baton, 4.5%-Beanbag, shotgun 4.8%-Taser. In personal confidence, the officers ranked Taser #1, OC Spray #2, Baton #3, and Beanbag shotgun #4. There were 8.7% of the agencies that do not have policies providing guidelines on the use of non-lethal weapons and 91.3% of the agencies do have the non-lethal weapon policies.

The Chandler, Arizona Police Department report showed a 97% success rate for all their taser deployments. They also show that 86% of the deployments were used at a level of "physical/active resistance" or higher. The other 14% were at the "verbal non-compliance" level and 83% of those were in display mode only. Display mode is when the taser is shown to the suspect and may even be tested but not actually deployed. This results in compliance without actually using the taser on the subject.

The Seattle Police Department reports an 84% success rate in their taser deployments. There were either no injury or dart/stun abrasions to 62% of the suspects. "Officers sustained no injuries in 85% of the deployments" (Seattle, 2002, p. 2). However, it is important to note that in 12% of the incidents the officers were injured

before the taser was deployed. It is reasonable to infer from this that the taser was deployed in response to the officer being injured.

“There is no evidence that O.C. as used by law enforcement officers in confrontational situations is a total or contributing cause of death, except when preexisting asthma (or disease narrowed airways) is present” (Petty, 2004). However, in the Vilke et al. study “researchers found no evidence that OC spray inhalation and exposure resulted in respiratory compromise in subjects with a history of lung disease, asthma, smoking, or respiratory inhaler medication use” (2001, p.4). In all 63 cases that Dr. Petty studied he found other reasons for the cause of death including drug intoxication and positional asphyxia. These cases were described as “violent” or “confrontational” and OC spray was only one of the methods of force used. When the OC spray became ineffective the officers escalated their use of force but not to deadly force. Also noted was that the officers involved reported only 30% of the time the OC spray was effective or partially effective. The other 70% of the time the OC was reported as ineffective. Dr. Petty compared that with a 1997 study in which officers reported the OC spray was 92% effective. The difference is believed to be due to Dr. Petty only studying deaths as opposed to all encounters. However, as shown in the Seattle report the majority (64%) of subjects the taser was deployed on were impaired by either alcohol, drugs, both or mental illness. (Seattle 2002, p.5). This observation may suggest that the more violent and intoxicated (by alcohol or drugs) the less effective the OC spray is. The problem is these are the confrontations that may most likely lead to injury of the suspect or the officer. While OC spray and tasers are equally

as effective in many situations it seems reasonable to infer that the taser is a better choice when dealing with a highly intoxicated and or violent subject.

A survey of 216 taser carrying law enforcement agencies around the nation about their use of force continuum, revealed that 4% put it on the same level as impact weapons (baton, asp, beanbag shotgun); 9% put it after OC spray and 87% put it on the same level of OC Spray. (Taser International, 2004).

CONCLUSIONS

This research analyzed the question: Are tasers more effective than other mainstream non-lethal force options? If so, where should tasers be placed on the Use of Force Continuum? The research was believed to will show that Tasers are more effective than other non-lethal use of force weapons and in the majority of the incidences can be the first option for officers.

The findings will prove the Taser and OC spray are virtually equal in effectiveness when dealing with the majority of subjects that the police use force on. The reports from Forcum and Seattle Police Departments reflect the results from the Dr. Perry study. The main difference is that OC spray may not be as effective on highly violent, confrontational and/or highly intoxicated subjects as shown by a low 30% effectiveness. (Perry, 2004). The other problem with OC spray is the decontamination of the suspect (15 minutes-1 hour) and the cross contamination of other officers. Suspects who have been shocked by a taser tend to recover quickly if not immediately. Although just based on effectiveness, the OC spray and tasers are equally effective. Batons and other impact weapons when used in a strike mode almost always cause injury. Batons are also undesirable due to the close proximity to the suspect when

deploying them. There are still many instances where a baton is useful and should not be discarded as a non-lethal option.

With the large number of deaths related to the tasers still being investigated, society needs more independent studies to determine the safety of the non lethal weapons. It was interesting to note that many subjects have died after being exposed to OC spray which is similar to the taser. Most of the incidences were attributed to factors other the OC spray just like the taser with a large number blamed on drug intoxication/over dose. It seems that the major identical factors between the OC spray and taser related deaths are the violent or confrontational encounter with police and the presence of a contributing agent like drugs or disease, which may be another area for future studies. It is not recommended that tasers be used in non violent encounters, but OC Spray or batons used in escort positions may be more acceptable in those types of situations.

OC Spray "...is usually ranked just above hands-on pain compliance and immediately below the use of impact weapons." (Onnon, p.4). This represents a step up on the use of force continuum based on the resistance of the subject. It is not as simplistic as taking each non-lethal weapon in a planned step sequence. Each situation and incident requiring force is different. For example, if gasoline is present where the subject is the taser is not an option, regardless of the condition or state of the subject. A taser spark could ignite fumes and cause a fire.

Based on the similar percentage of effectiveness between OC spray and the taser, it is recommended that police department's use of force continuums start the taser, baton and OC spray at the same level, right after open hand pain compliance

techniques. Non-lethal weapons should be grouped together in the same policy for the use of force continuum because each situation or encounter will dictate what kind of force may be necessary. No department should become solely reliant on any one non-lethal weapon. The taser also causes minimal or no injury; similar to OC spray. This coincides with the survey showing that 87% of taser carrying agencies place it on the same level as OC spray in written policies.

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Appendix A

A Survey of Non-Lethal Weapons

Captain Michael Kester
Harlingen, Texas Police Department

I am conducting research on Non-Lethal Weapons used by Law Enforcement as part of the requirements for The Bill Blackwood Law Enforcement Management Institute of Texas. I would greatly appreciate you taking a few minutes to fill out this survey. Thank You.

Agency Name _____ Sworn Personnel _____

1. What Non-Lethal Weapons are the Officers of your Department authorized to use or carry?

Check all that apply.

OC Spray _____ Taser _____ Other _____
Asp/Baton _____ Beanbag Shotgun _____

2. Have you used or been present during the use of any of these Non-Lethal Weapons? List approximate number of times.

OC Spray _____ Taser _____ Other _____
Asp/Baton _____ Beanbag Shotgun _____

3. How many, if any, of these deployments were failures? Meaning they failed to gain compliance.

OC Spray _____ Taser _____ Other _____
Asp/Baton _____ Beanbag Shotgun _____

4. Rank the Non-Lethal Weapons in order of your personal confidence in them in gaining compliance. 1-most confident and 5-least confident

OC Spray _____ Taser _____ Other _____
Asp/Baton _____ Beanbag Shotgun _____

5. Do your Departmental Policies give you guidelines on the use of Non-Lethal Weapons? Yes or No

Comments?