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WHAT IS THE FUTURE OF
LESS THAN LETHAL WEAPONS IN LAW ENFORCEMENT?

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ACQUISITIONS

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EXECUTIVE SUMMARY

Law enforcement officers are constantly faced with the challenge of confronting violent and dangerous individuals. The officers who face these challenges everyday must be given the very best in equipment and technology.

Less lethal weapons are one tool which could be utilized by law enforcement. However, law enforcement must continue to seek out a more reliable and efficient less lethal weapon.

In forecasting the future, five emerging issues were identified. They were: 1. Increased liability in the use of force; 2. Public expectation that law enforcement utilize less lethal weapons; 3. Shrinking fiscal dollars; 4. Increase interest by law enforcement to use less lethal weapons; 5. Technological advances in less lethal weapons.

Five critical events were identified. They were: 1. Legislation limiting civil liability; 2. Highly publicized police confrontation; 3. Legislation or court decision abolishing lethal force; 4. Technological breakthrough in less lethal weapons; 5. Recession/Depression.

Through a cross impact analysis of the trends and events, three scenarios were developed. The most desired future state was identified and used to develop strategic, implementation and transition management plans to attain that future. The policy of California law enforcement taking an affirmative proactive supportive position, promoting the appropriate application of less lethal weapon technology was identified as the preferred policy.

A strategic plan was developed which recommended California law enforcement promote less lethal weapon /technology and create a partnership between civilian law enforcement, military and private sector manufacturers to insure appropriate development of technology.

Three strategies which will help California law enforcement develop effective less lethal weapon technology are to: 1. Promote and invest in the research and development of less lethal weapon; 2. Implement education and training of personnel; 3. Educate the public and news media concerning law enforcement's use of less lethal weapons.

A transition management plan is identified which will manage the planned transition from today's unacceptable less lethal weapon technology to the desired future of appropriate application of less lethal weapon technology in civilian law enforcement.

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I. INTRODUCTION

PROJECT BACKGROUND

Police have not always been armed with the capability for lethal force. While any weapon or object, can, under certain circumstances, become lethal, it was not until the opening of the American West in the mid-19th century, that sidearms became a standard issue for Lawmen. In most large metropolitan cities, the beat cop rarely carried a sidearm, but relied on a billy club or nightstick instead.

Traditionally, police have been armed to the same degree as that of the criminal or the populace they serve. In 19th century cities of Eastern America, the civilian population was not widely armed, and neither were the police. In the wild west, firearms were a necessary tool because most of the population was armed with firearms.

There was also a distinct difference in the make-up of the populations of the East and West. Most of America's large cities were in the east. The "indigenous" public was stable and civilized. The increasing immigrants were new, frightened, and for the most part easily controlled. The western pioneers were a different breed. Self sufficient and adventuresome by the very nature of their activities, many, if not most were veterans of the Civil War, trained and proficient in the use of firearms. In

addition, the American West became a refuge for those individuals that could not function in the evermore crowded cities of the east. Disputes between frontier men would quickly escalate to lethal force. Frontier justice was common, and a sheriff or marshal might be the only law for hundreds or thousands of square miles - help did not come by blowing a whistle or rapping a nightstick on the sidewalk. These lawmen of the west had to be prepared to deal with any situation. Thus the six-gun became the standard issue of the frontier police officer.

As the country grew, and its population became less homogeneous and therefore less concerned with national customs and accepted behavior, the need to protect the citizens of large cities, as well as the police themselves, became apparent. Slowly, the sidearm became standard equipment for all police officers.

It must be noted, however, that the arming of police has not been a continuing process. For the most part, the average patrol police officer today is armed identically to the sheriff or deputy of more than 100 years ago, a six-shot revolver and possibly a shotgun. In fact, the sheriff of 100 years ago probably was armed with a rifle or carbine in addition to his sidearm, actually giving him greater potential firepower than his modern counterpart.

A major difference, however, between the lawman of 100 years ago and the modern police officer is the use of deadly force. While no data exists on the number of officer involved shootings from 1860-1899, it probably is not outrageous to state that constraints on the use of deadly force by police officers in the American West during the late 19th century may have been limited to the conscience of the police officers. Today, public attitudes and concerns, liability questions, and court imposed restraints all narrowly limit when, where, and how a police officer may resort to deadly force.

In 1985 the Federal Supreme Court decision Tennessee vs. Garner, limited the use of deadly force against fleeing felons. The court held that the "use of deadly force to apprehend an apparently unarmed, non-violent fleeing felon is an unreasonable seizure under the Fourth Amendment". (1)

Escalation of Deadly Force Policy

The standard modern police philosophy and procedures taught at police academies nationwide states that deadly force will be used only when necessary, as a last resort, to protect innocent lives or the life of the officer. To codify this philosophy, most police departments have an "Escalation of Force Policy" that outlines the stages or levels of force appropriate in a given situation.

Briefly, such policies state that when officers are confronted with violence or the threat of violence, they should initially try to peacefully resolve the situation using human-resource techniques; listening, talking, or negotiating. Should these techniques prove ineffective, the officer may escalate his level of action to weaponless defense tactics such as hand-to-hand, baton techniques, special tactics (i.e., tear gas) and less lethal weapons. As a last resort, officers may use deadly force to protect themselves and the public.

Unfortunately, police/suspect confrontations rarely fall into textbook scenarios of escalating violence. Often, officers must make split-second decisions of whether to shoot or not. And as the United States as a society has become more violent, so has the criminal, forcing officers to make the shoot/no shoot decision more often.

The correctness of the decision, however may say more about the options that an officer has, than about the true danger of the situations. But in a split second decision, the officer must shoot his sidearm or long-gun because they are presently the only effective and reliable weapons, the only viable option police now have at their disposal. When there are no options, decisions are easy.

Law enforcement should have a viable option to the use of firearms in potentially life threatening situations.

Firearms by their nature and design are lethal weapons. Although different firearms can vary in such arcane measurements as stopping power, rate of fire, knock-down power, penetrating power or firepower, all traditional firearms must be considered lethal weapons; a .22 caliber revolver is just as lethal as a .44 Magnum.

No traditional firearms are presently available that can be used less-lethally. None are designed to "wound" or render a suspect incapacitated. A police officer who decides to draw his sidearm then must decide whether to shoot. If the officer decides to shoot, then a life or lives must be threatened, since the officer must shoot to kill. There is no halfway position, nor should there be. Firearms are reliable killing tools, but very unreliable "wounding" tools. An officer trying to wound a dangerous suspect may be successful, though wounding does not connote incapacitation. A wounded armed suspect may be extremely dangerous. Therefore, if the desire of a police officer is to incapacitate rather than kill, then a sidearm is the wrong choice of weapon. The officer should have the option of using a less lethal weapon.

Less lethal weapons are appropriate for two major classes of situations: Those in which an organized group of officers is

confronted with a large number of people who must be controlled. Channelized, or dispersed; and those in which one or more officers must apprehend one or more criminals or suspects or are confronted with people who must be controlled.

Less lethal weapons are not likely to replace firearms but they could fill a need in those situations in which the police cannot now effectively or legally use firearms and have no other means of physical apprehension. (2)

Although law enforcement has several less lethal weapons currently available for deployment, existing less lethal weapons cannot be considered totally non-lethal. Nor can the current less lethal weapons be considered totally reliable or efficient.

Official interest in less lethal weapons can easily be traced back to 1972 and a United State Department of Justice (DOJ) initiative to develop weapons that could subdue without killing. In 1986, the Department of Justice sponsored a two day conference, called The Attorney General's Conference on Less Lethal Weapons. This conference provided an international forum for the discussion of less lethal weapons. While consensus was reached on many levels, a vitally important area where agreement was reached was the definition of exactly what less lethal weapons are. According to the report of the proceedings, less lethal weapons were defined as:

.....devices or agents used to induce compliance with law enforcement personnel without substantial risk of permanent injury or death to the subject. (3)

Prior to the conference, less lethal weapons were commonly referred to as non-lethal. The conference decided on the phrase "less-than-lethal" rather than non-lethal to recognize the fact that any such weapon is potentially lethal if used inappropriately.

Also, in an attempt to quantify less-than-lethal, the conference decided on a level of 95 percent successful usage without a fatality in order to classify a weapon as less lethal weapon.

While there are many law enforcement tools that can be classified as less-than-lethal, most can be classified into three main groups: chemical, electrical and impact. Animals, such as K-9 Units, Mounted Units (crowd control) and other such uses, could be considered less lethal weapons. However the applicability for day to day police work for such systems is so specialized, that for this research, animal based less lethal weapons will not be discussed. (4)

Chemical Less Lethal Weapons

There are two types of chemical less lethal weapons now available to law enforcement agencies: those that affect the central nervous system, and peripherally acting chemicals. (5)

Chemical agents that act on the central nervous system interfere with the transmission of signals from the brain to other parts of the body. Such chemicals usually take 30-60 seconds to affect the target. These chemicals are usually delivered by injection of dart, ingested or inhalation. In this category are such compounds as fentanyl, ketamine, and stunning compounds such as BZ.

Very small doses of fentanyl are effective in immobilizing limbs, but can cause depressed respiration. Ketamine is a widely used

pediatric anaesthetic, but it can be dangerous to heart patients. Ketamine can also produce physiological manifestations such as hallucinations and delirium. Ketamine is least dangerous on children and elderly. BZ has been effectively used as a stunning agent that acts through mydriasis or dialation of the pupils. This affect is extremely uncomfortable. BZ can also cause short term memory loss.

Also, the broad category of tranquilizers also fits into the central nervous system category of chemical weapons. Tranquilizers have proved effective in specific applications.

It must be noted that while these agents are available to civilian law enforcement agencies, no such chemical compounds or weapons are presently used by any civilian law enforcement group in the United States. Potential danger and unpredictability of reaction of the target, have rendered present central nervous system chemical less lethal weapons undesirable for law enforcement use.

A factor in the lack of acceptance and use of central nervous system affecting chemicals is police concern regarding safety to the public as well as public acceptance of the use of such compounds.

Peripherally acting chemical weapons are commonly called tear gas. In fact, tear gas is a family of weapons consisting of CN, CS, and

CH gas. Tear gas has been a standard weapon of law enforcement for decades. It causes respiratory discomfort, coughing, heavy tear flow, and many other temporary localized problems to breathing and seeing.

Tear gas delivery systems include canisters that can be launched via a special rifle or thrown. Fogging devices are also used. In liquid form, sometimes called mace, it is sprayed via an aerosol can. Mace, although greeted with enthusiasm when it was first developed, has had mixed results in the field due to its ineffectiveness against aggressive or drugged subjects. (6)

A major drawback to the tear gas family is its area of effectiveness. Police and the public are often affected by tear gas intended to subdue suspects.

A minor weapon used by the military in counter terrorist action is the flash/bang grenade. This grenade creates a loud noise and huge white flash but causes no damage other than confusing the target.

Electrical Less Lethal Weapons

Unlike tear gas which has been in police inventories for decades, the 1980's saw the development of electrical less lethal weapons.

These weapons as a group can be called stun weapons as their function is to inflict an electrical shock to the target. The shock is extremely high in dc voltage, 50,000 volts, but extremely low in amperage, in the order of two millionths of an amp. When applied to a target, the high voltage causes extreme pain and muscle disfunction, that immobilizes the subject. (7) There are several types of such weapons now available to law enforcement.

The Taser is a device, designed to shoot two electrically charged darts. The range of the Taser is eight to ten feet, and it is considered somewhat inaccurate. The Taser's darts are connected to the pistol by wires. When the darts make contact, they complete an electric circuit, and deliver the shock to the target. Both darts must hit and penetrate the target's clothing to complete the circuit. Tasers are extremely effective when they are working; with user police departments recording a 60-85 percent effectiveness. Its effectiveness varies, however, depending on the subject's clothing and reaction of the target.

The Taser is difficult to reload, a major drawback in tactical situations.

The Taser looked promising when it was introduced in the late 1970's, but lack of a solid market, due to its being classified as a firearm and consequent regulation under the Munitions Act, reduced company sales. Taser has now filed Chapter 11, citing

high operating costs, market restrictions by the Bureau of Alcohol Tobacco and Firearms (BATF), and liability concerns.

The "stun gun" is a generic term for a hand-held electrical discharge weapon. Like the Taser, the stun gun produces an extremely high voltage, low ampere electrical charge. It differs from the Taser in that its two electrical contacts must be physically pushed against the subject by the officer rather than fired like the Taser darts. Thus, a stun gun has an arm's length effective maximum range.

There are several manufacturers of the stun gun. Unlike the Taser, which was sold to law enforcement only, stun guns are available to anyone. The general public has embraced stun guns as an alternative to handguns for self protection.

As the market for stun guns has grown, so has the number of manufacturers and models of stun guns. Types of stun guns now available include model akin to the industry standard Nova XR-5000, to such variances as the Talon Glove and Source Flashlights.

Police have reported both positive and negative experiences with stun guns. One police force considers them the most effective less lethal weapon in their inventory which includes lights, fire extinguishers, nets, water cannon, and dogs. (8)

Other police forces' experience is less than spectacular, with a reported stun gun effectiveness of 50 percent. Generally, stun guns are acknowledged as having the following limitations:

- * Arm's length range.
- * More effective on smaller people.
- * effectiveness diminished on excited subjects or those under the influence of drugs, or mentally disturbed individuals.
- * Potentially harmful to those persons wearing a pacemaker.

(9)

Impact Weapons

Impact weapons are defined as those deriving their effectiveness from kinetic energy impact. Included in this category are Less Lethal Weapons such as nightsticks/batons, non-penetrating projectiles, nets, water cannon, etc. (10)

The most common weapon in this category are the billy club, nightstick or baton. Nightsticks have been issued to police officers for a century or more, and are still almost universally issued by police departments. The nightstick remains the first line less lethal weapon in law enforcement's inventory.

An interesting less lethal weapon developed by the United States Army some years ago is the Sting-RAG, or Ring Airfoil Grenade (RAG). RAG is a combination Impact/Chemical less lethal weapon made of soft rubber. It is about 2.5 inches long and 1.5 inches in circumference. It is fired from a launcher that is attached to an M-16 rifle. When fired, RAG travels at 200 feet per second and 5000 rpm. It has little velocity decay and has an effective range of more than 60 meters. RAG is considered non-lethal at all ranges, and theoretically, will not kill even with a close range hit to the temple. Performance specifications compare RAG with the sharp jab of a professional boxer.

Considering its size and range, RAG is surprisingly accurate. It is however affected by wind. Other disadvantages include: possible target eye damage; effectiveness is reduced by heavy clothing; and the required M-16 launching device.

A variant of the Sting-RAG is the Soft-RAG. The Soft-RAG projectile holds CS powder. On impact, a 3-5 foot cloud of tear gas is released. Neither RAG system has yet been adopted for widespread police use.

Other rifle-launched "soft" projectiles include such projectiles as rubber and polyvinyl chloride bullets, small water balloons, splatt rounds, shot filled bean bags and rubber batons. The rubber baton must travel 60 feet before its velocity decays enough

to be considered safe for a head-shot. The water balloon is hazardous to lungs and liver until it has traveled 70 feet. Neither of these projectiles have aerodynamic airfoil design of RAG, and must be fired in a ballistic trajectory, and are considered inaccurate.

Rubber bullets have for some time been used in Northern Ireland by British Troops. They are 8-9 inch cylindrical rounds fired from special rifles. Rubber bullets have potential for causing serious injury or death. They kill about 1 in 5000, however, far below the 95 percent standard. The British have replaced rubber bullets with pvc rounds which are allegedly less deadly.

Water cannon, fire extinguishers, hand-to-hand techniques, nets and barricades round out the remaining less lethal weapons now available to civilian law enforcement. Effectiveness, cost, politics, resistance to change, training concerns, public perceptions have all worked to retard the acceptance and use of less lethal weapons.

In 1972, the Attorney General hosted the First Conference on the Future of Less Lethal Weapons. The report of the 1986 Attorney General's Conference on Less Lethal Weapons noted that most of the current weapons were available in 1972. Therefore, for nearly 15 years, there has been a significant lack of innovation in the area of less lethal weapon development.

Unfortunately, few developments are likely in the area of sub-lethal or less-than-lethal weapons. Mainly because very little work is being carried out in this area at this time. Impact weapons have been relatively unsuccessful and substantial improvements in lachrymators (tear gases) much beyond their present state, although possible, are unlikely. The various electrical weapons have not seen widespread use, due both to limited range and lack of public acceptance. (11)

A major issue in the development of less lethal weapons is making future systems acceptable to law enforcement. Present systems do not totally meet law enforcement needs.

All of these concerns make present less lethal weapons not fully acceptable to police officers. No officer can be expected to risk his life with an armed, dangerous suspect, who is probably trying to hurt or kill, to try a weapon obviously inferior to the traditional sidearm. Therefore, any future less lethal weapon must meet the various law enforcement requirements. Some that must be considered might include:

- * multiple shots
- * easy/fast reload
- * as accurate as a handgun
- * reliable and effective
- * uncomplicated

- * acceptable to officers and public
- * not prone to abuse
- * affects only intended target. (12)

Probably one of the most successful transfers of technology for law enforcement is the ballistic or bullet proof vest. A look at how the bullet proof vest came into existence might shed some light on how we can develop an effective less lethal weapon.

In the early 1970's the National Institute of Justice was attempting to develop a tire that could safely handle high speed police pursuits. You might recall law enforcement was having a difficult time with the steel belted radial tires coming apart in pursuits. While meeting with tire manufacturers, they discussed a new material for tires called Kevlar 29.

Members of the National Institute of Justice learning of the properties of Kevlar decided to apply the material in a bullet proof vest. To their surprise this lightweight material weaved in a certain manner did in fact stop bullets.

The Institute brought together the Federal Government providing research and development people, testing facilities,

private manufacturers and civilian law enforcement and working together developed an effective bullet proof vest.

A critical step in the process however, was that the Institute financially supported the development by guaranteeing the manufacturers they would purchase the first 5,000 vests. Thus providing the necessary profit margin for the private development of the vests.

The vests were purchased by the Institute and then given to civilian police agencies throughout the country. The rest is history. To date over 600 police officers have been saved by the use of bullet proof vests.

As a side note, Les Shubin, Program Manager for the National Institute of Justice, who is currently actively pursuing the development of less lethal weapons is the man who was instrumental in developing the bullet proof vest.

But more than encourage and help industry develop the systems, law enforcement and the military must also support industry in developing markets. One reason the Taser failed is that the police market did not support the weapon in large enough quantities. The military did not support it at all, and foreign and civilian markets were closed. Conversely, the stun gun, has found acceptance in the civilian market, and now there are dozens of manufacturers selling various stun gun types at all price ranges.

Presently there are 50,000 military police in the Air Force alone. In California, there are 50,000 civilian police and 100,000 private security officers. Based on those numbers, a solid market exists for less lethal weapons if a suitable weapon(s) can be developed. Furthermore, civilian ownership of Less Lethal Weapons for home protection would be a huge market. During the "Night Stalker" terror in 1985, handgun sales in California increased. Those handguns are still in the possession of California residents. As Les Shubin of the National Institute of Justice said, "Wouldn't it be nice to replace every handgun in every nightstand with less than lethal weapons."

Law enforcement throughout the country is concerned with the escalation of violence in our society and with the increase in the violent confrontations our police officers must face in the streets of our communities. The law enforcement personnel who face there challenge everyday must be given the very best in equipment and technology.

II. FORECASTING THE FUTURE

DEFINING THE FUTURE

Thus far, we have briefly reviewed what technologies are available today and what weapons are currently being deployed.

We will now look to the future and attempt to identify what trends that will influence the future use of less lethal weapons. Potential events that might occur in the next 15 years will be identified that would have a significant impact on less lethal weapons.

In the preparation of this paper a group of professionals were interviewed regarding the issue of less lethal weapons. The group consisted of one Police Officer, two Police Chiefs, one Lieutenant Colonel with the United States Air Force, one doctor, two members of the National Institute of Justice.

The group was interviewed using a modified delphi technique. This involved asking a series of questions concerning the issue of less lethal weapons and identifying future trends/events. The information was then collated and the feedback was shared with each member of the group. The five key relevant trends and events were then prioritized and established. Through a cross impact analysis, the interaction of events on events and events on trends was evaluated.

TRENDS

1. THE INCREASED LIABILITY IN THE USE OF FORCE.

The application of force or appropriate force in the performance of duty, and liability for excessive or inappropriate force is a major issue for law enforcement. In the litigious society that exists in the United States today, law suits are brought for far less frivolous reasons than officer involved shootings. Each time an officer fires a weapon, someone may sue. In the case of a "bad shooting" it is almost a forgone certainty. Even in justifiable shootings, liability suits are so routine, that each time an officer fires a firearm, the agency and jurisdiction he or she works for is at risk. A liability award may cost millions of dollars, and liability insurance often is too costly for cities to afford.

Juries consist of citizens. What a police shooting review board sees as a justifiable shooting, a jury may see as an over reaction by an officer to a stressful situation. Since officers have limited options when dealing with potentially life-threatening situations, police shooting boards evaluate how officers responded to the perceived threat with the options at hand. A jury often only considers that a trained, armed police officer shot someone.

In terms of cost, a city is better served if officers have less lethal options at their disposal. The costs, liability insurance, litigation, and jury awards can be huge, but the difference between lethal and non-lethal awards is staggering.

An officer involved shooting may cost thousands of dollars. Following a shooting, an officer must: go through an internal investigation; a criminal investigation; a District Attorney's investigation and possibly a Grand Jury/Coroner investigation. Not to mention the media attention. The costs associated with the above do not include any court costs or liability awards. Nor do they include the costs of lost time to all personnel involved or any counseling or stress related leave or lost time, including disability and/or retirement of the officer. An officer involved in a shooting who experiences the above, may wish he had never fired a shot and had an alternative weapon at his disposal.

An interesting situation regarding liability with less lethal weapons could just as easily occur in the near future. Law enforcement agencies, are regularly sued for excessive use of force. Recently, there have been numerous suits involving less lethal weapons, specifically regarding the misuse of stun guns. Such suits often dampen the acceptance management has for non-traditional weapons. This is a two-edged sword however. How long will it be before suits are brought by citizens claiming that police should have used a less lethal weapon rather than a

firearm? Police may be faced with the liability question of being sued for using a firearm or for using a less lethal weapon. Since the liability costs for lethal force is so much greater than for non-lethal force, it would seem obvious that law enforcement faced with this dilemma will move towards less lethal weapons. (Refer to graph on page 35).

2. THE INCREASED PUBLIC AWARENESS AND EXPECTATION THAT LAW ENFORCEMENT WILL UTILIZE LESS LETHAL WEAPONS.

The public expects, and has a right to expect well trained police that use lethal force only when necessary. An officer defending himself against a gun wielding suspect during an armed robbery will not be criminally prosecuted, or chastised by the press or the public. But a large percentage of officer involved shootings do not fall into easily defined areas of good or bad. Often, police shootings are in gray area, and the decision to shoot or not to shoot may be second guessed by non-involved parties, who are often not police trained. These people may not accept an officer's reasons for shooting.

In years past, the criminal was less prone to kill. The criminal of the last 20 years has been more inclined to kill than his predecessors. This inclination to violence puts officers in a frame of mind that expects violence. Police officers have no desire to die in the line of duty, therefore, they will defend

themselves with lethal force if necessary when they feel threatened. This is acceptable to the press and the public if the threat is found to be real. If in hindsight, the threat is found to be less than originally believed, both the officer, his department, and the entity they represent can expect sever scrutiny by the public and the press. And what might be termed "justifiable shooting" by a review board, could be considered a "senseless killing" by the public. "Senseless killings" may cause law enforcement agencies to find itself under siege and investigation.

As the public becomes more knowledgeable regarding less lethal weapons, they will expect that their home town law enforcement agency will begin using them. (Refer to graph on page 36).

3. THE INCREASE BUDGET CONSTRAINTS AND SHRINKING TAX DOLLARS.

Rising crime and violence have public screaming for more and better police protection. While at the same time, there are concerted efforts to reduce crime, be tough on criminals, but not over burden the tax paying citizenry.

Law enforcement management want the police to be professional, well trained and well equipped. But budgetary concerns often force decisions to be made on cost, rather than public and police safety.

The standard issue police handgun costs approximately \$300 and lasts many years. This means a one time city/police cost. Less lethal weapons costs are often as much as a handgun, but may not be as durable, or as effective. Similarly, new weapons or technology may require extensive training for officers, at additional cost to the city. Furthermore, less lethal weapon technology is new, and will change rapidly as the state-of-the-art changes. Can cities or police agencies afford to change less lethal weapons at each iteration? If they don't, will they be held liable by injured parties for not keeping abreast of changes in technology? (Refer to graph on page 37).

4. THE INCREASING INTEREST IN LAW ENFORCEMENT TO ACQUIRE LESS LETHAL TECHNOLOGY.

Across the nation, there is growing interest in less lethal weapons among police agencies, the military, and the public.

The military is continually testing such weapons. Due to budget constraints, civilian law enforcement has not taken an active research and development role. Law enforcement has not embraced less lethal weapons due to their inability to meet police requirements. (Refer to graph on page 38).

5. THE CONTINUED ADVANCES IN TECHNOLOGY.

The Firearms used by police have not changed appreciably in over 100 years. Presently, the military is investigating many new technologies that hold promise for meeting the need for less lethal weapons. Just as a cure for a deadly disease may be found at any time, a breakthrough in technology that would make less lethal weapons acceptable on a widespread nature could also happen. (Refer to graph on page 39).

EVENTS

Events locally, regionally, statewide, nationally and internationally have direct impact on how law enforcement operates. Several events which may occur in the next 15 years, have been identified that would have direct bearing on the development or abandonment of less lethal weapons. The following five events were identified by the group as being the most significant. Also projected was the probability that the event would occur in the next 15 years.

1. Legislation Limiting Civil Liability for Law Enforcement

Agencies: Legislation is passed which limits civil liability exposure for law enforcement agencies. This legislation is passed due to exorbitant judgements causing public outcry for limits.

2. Highly Publicized Police Confrontation: A highly

publicized negative event such as a Kent State incident, controversial police shooting, or the Philadelphia bombing of 1986, could cause an increased interest by the public and law enforcement to develop and use less lethal weapons.

3. Legislation or Court Decision: Through a law passed by a legislature or a court mandate, lethal weapons/force are abolished for police departments.

4. Technological Breakthrough: A technological breakthrough allows the development of a less lethal weapon that is effective, acceptable, affordable and deliverable to law enforcement.

5. Recession/Depression: A severe recession/depression either nationally or internationally would restrict research and development in less lethal weapon research, it would also reduce the budgets of law enforcement to the point that even if there were effective less lethal weapons available, they could not be obtained.

EVENTS	PROBABILITY BY THE YEAR 2002
1. LEGISLATION LIMITING CIVIL LIABILITY FOR - law enforcement agencies	73%
2. HIGHLY PUBLICIZED POLICE SHOOTING such as a Kent State incident or other controversial police shooting.	55%
3. LEGISLATION OR COURT DECISION abolishing the use of lethal/force by law enforcement.	5%
4. TECHNOLOGICAL BREAKTHROUGH ALLOWS the development of a less lethal weapon that is effective, acceptable, affordable to law enforcement.	55%
5. RECESSION/DEPRESSION either nationally or internationally would restrict research and development in less lethal weapons.	80%

CROSS IMPACT ANALYSIS

Cross impact analysis estimates the impact of one event occurring upon another event, or one event occurring upon a trend. The impact on an event can be an increase or decrease in the probability of the event occurring or no impact at all. The impact of an event on trend can increase or decrease the projected direction of the trend, or have no impact at all.

Below are the estimates of what the impact of one event occurring first would have on subsequent events. Followed by an estimate of the impact of events on trends. The change reflects a percentage increase or decrease in the direction and strength of the trend.

On page 34, is the cross impact analysis chart. This graph depicts the estimates of the impact of events on events and events on trends. Also depicted in the graph are P1, P2 and P3. These represent broad policy alternatives that California law enforcement could pursue in regards to less lethal weapon development. P1 represents the policy that California law enforcement could oppose and resist less lethal weapon development. P2 represents the policy that California law enforcement could do nothing either way towards this development. P3 represents the policy that California law enforcement could actively support and promote less lethal weapon development.

EVENTS ON EVENTS

1. If legislation occurs limiting civil liability...

THE PROBABILITY OF...

A. Highly publicized police confrontation	(55%)	No change
B. Legislation/court decision abolishing lethal force	(5%)	Increase 30%
C. Technological breakthrough	(55%)	Decreases 25%
D. Recession/depression	(80%)	No change

2. If a highly publicized police confrontation occurs...

THE PROBABILITY OF...

B. Legislation/court decision abolishing lethal force	(5%)	Increases 25%
C. Technological breakthrough	(55%)	No change
D. Recession/depression	(80%)	No change
E. Legislation limiting civil liability	(73%)	Decreases 45%

3. If legislation/court decision prohibits/abolishes the use of lethal force by law enforcement...

THE PROBABILITY OF...

C. Technological breakthrough	(55%)	Increases 80%
D. Recession/depression	(80%)	No change
E. Legislation limiting civil liability	(73%)	Increases 80%
A. Highly publicized police confrontation	(55)	Decreases 5%

4. If a technological breakthrough delivering an effective less lethal weapons to law enforcement occurs...

THE PROBABILITY OF...

D. Recession/depression	(80%)	No change
E. Legislation limiting civil liability	(73%)	Increases 85%
A. Highly publicized police		

	confrontation	(55%)	Decreased 30%
B.	Legislation/court decision	(5%)	Increases 30%

5. If a recession/depression occurs...

THE PROBABILITY OF...

E.	Legislation limiting civil liability	(73%)	No change
A.	Highly publicized police confrontation	(55%)	Increases 60%
B.	Legislation/court decision	(5%)	No change
C.	Technological breakthrough	(55%)	Decreases 30%

EVENTS ON TRENDS

1. If legislation limiting civil liability for law enforcement agencies occurs...

THE DIRECT IMPACT ON THE TRENDS WOULD BE...

A.	Liability in the use of force	-50%	(would decrease)
B.	Public expectation for law enforcement use less lethal weapon	5%	(would increase)
C.	Shrinking fiscal dollars	0	
D.	Law enforcement desires to have less lethal weapon	-10%	(would decrease)
E.	Advances in technology	0	

2. If a highly publicized police shooting occurs...

THE DIRECT IMPACT ON THE TRENDS WOULD BE...

A.	Liability in the use of force	20%	(would increase)
B.	Public expectation for law enforcement use less lethal weapon	40%	(would increase)
C.	Shrinking fiscal dollars	0	
D.	Law enforcement desires to have less lethal weapon	30%	(would increase)
E.	Advances in technology	0	

3. If legislation/court decision prohibits the use of lethal force by law enforcement...

THE DIRECT IMPACT ON THE TRENDS WOULD BE...

A. Liability in the use of force	-20%	(would decrease)
B. Public expectation for law enforcement use less lethal weapon	40%	(would increase)
C. Shrinking fiscal dollars	0	
D. Law enforcement desires to have less lethal weapon	50%	(would increase)
E. Advances in technology	30%	(would increase)

4. If a technological breakthrough occurs delivering an effective less lethal weapons...

THE DIRECT IMPACT ON THE TRENDS WOULD BE...

A. Liability in the use of force	-25%	(would decrease)
B. Public expectation law enforcement use less lethal weapon	30%	(would increase)
C. Shrinking fiscal dollars	0	
D. Law enforcement desires to have less lethal weapon	30%	(would increase)
E. Advances in technology	50%	(would increase)

5. If a recession/depression occurs...

THE DIRECT IMPACT ON THE TRENDS WOULD BE...

A. Liability in the use of force	0	
B. Public expectation law enforcement use less lethal weapon	0	
C. Shrinking fiscal dollars	30%	(would increase)
D. Law enforcement desires to have less lethal weapon	-20%	(would decrease)
E. Advances in technology	-30%	(would decrease)

CROSS IMPACT ANALYSIS

	EVENTS	EVENT PROBABILITY YEAR 2002	EVENTS					TRENDS				
			E 1	E 2	E 3	E 4	E 5	T 1	T 2	T 3	T 4	T 5
E 1	Legislation Limiting Liability	73		—	30	35	—	-50%	+5%	—	-10%	—
E 2	Highly Publicized Police Shooting	55	45		25	—	—	+20%	+40%	—	+30%	—
E 3	Legislation Eliminate Deadly Force	5	80	5		80	—	-20%	+40%	—	+50%	+30%
E 4	Major Break Through LLW	55	85	30	25		—	-25%	+30%	—	+30%	+50%
E 5	Recession Depression	80	—	60	—	30		—	—	+30%	-20%	-30%
P 1	Resist LLW Development		60	70	10	25	—	+20%	-10%	—	-50%	-25%
P 2	Do Nothing towards LLW Development		73	52	5	55	—	—	—	—	—	—
P 3	Promote LLW Development		80	40	2	75	—	-15%	+20%	+5	+20%	+25%

-34-

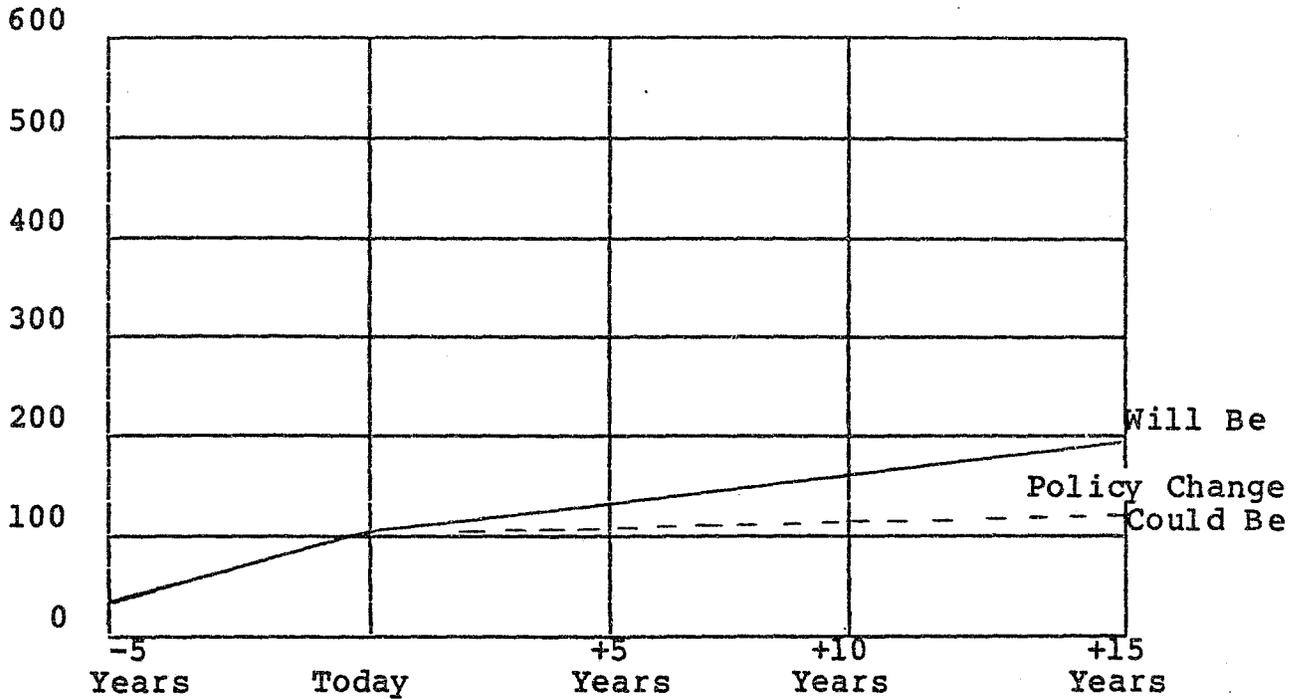
POLICY

P1=Resist LLW Development
 P2=Do nothing toward LLW Development
 P3=Promote LLW Development

TRENDS

T1=Increase Liability in the Use of Force
 T2=Public Awareness and Expectation
 T3=Increase Budget Constraints
 T4=Increase by Law Enforcement to LLW
 T5=Advances in LLW

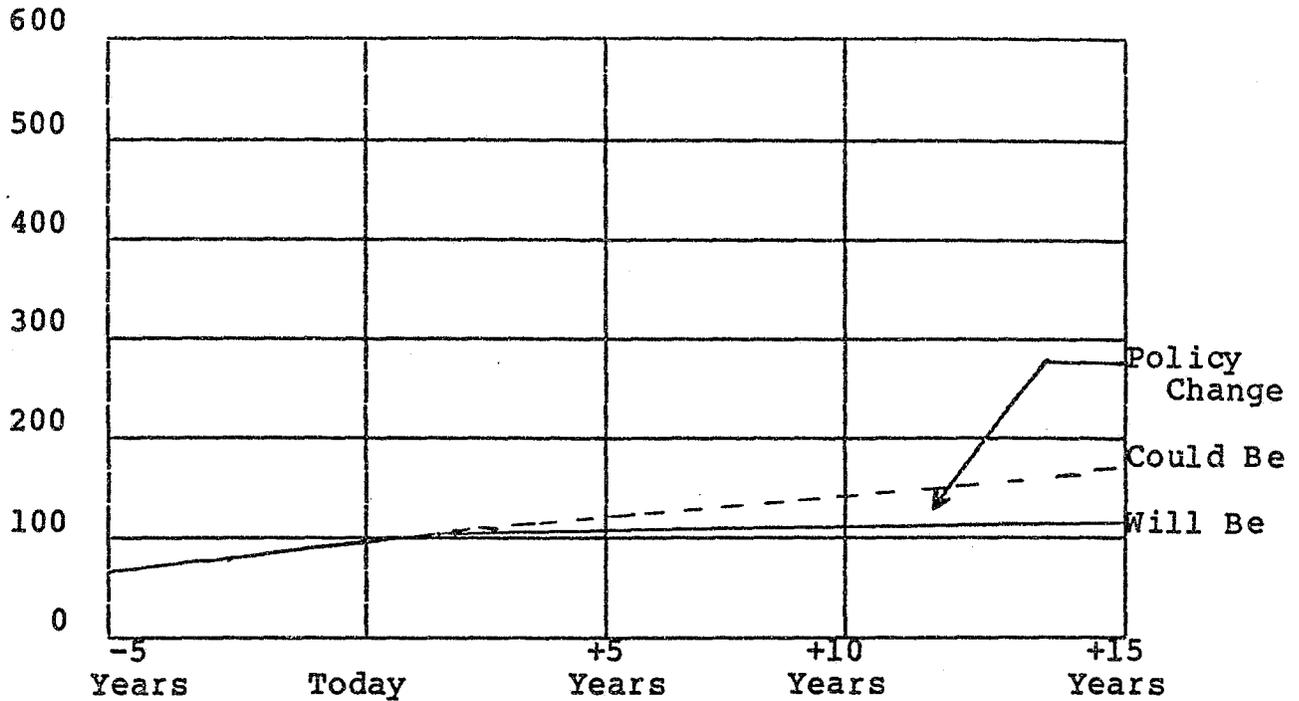
TREND #1



1. The Increased Liability in the Use of Force.

The group identified liability as a current trend that would continue to rise over the next 15 years.

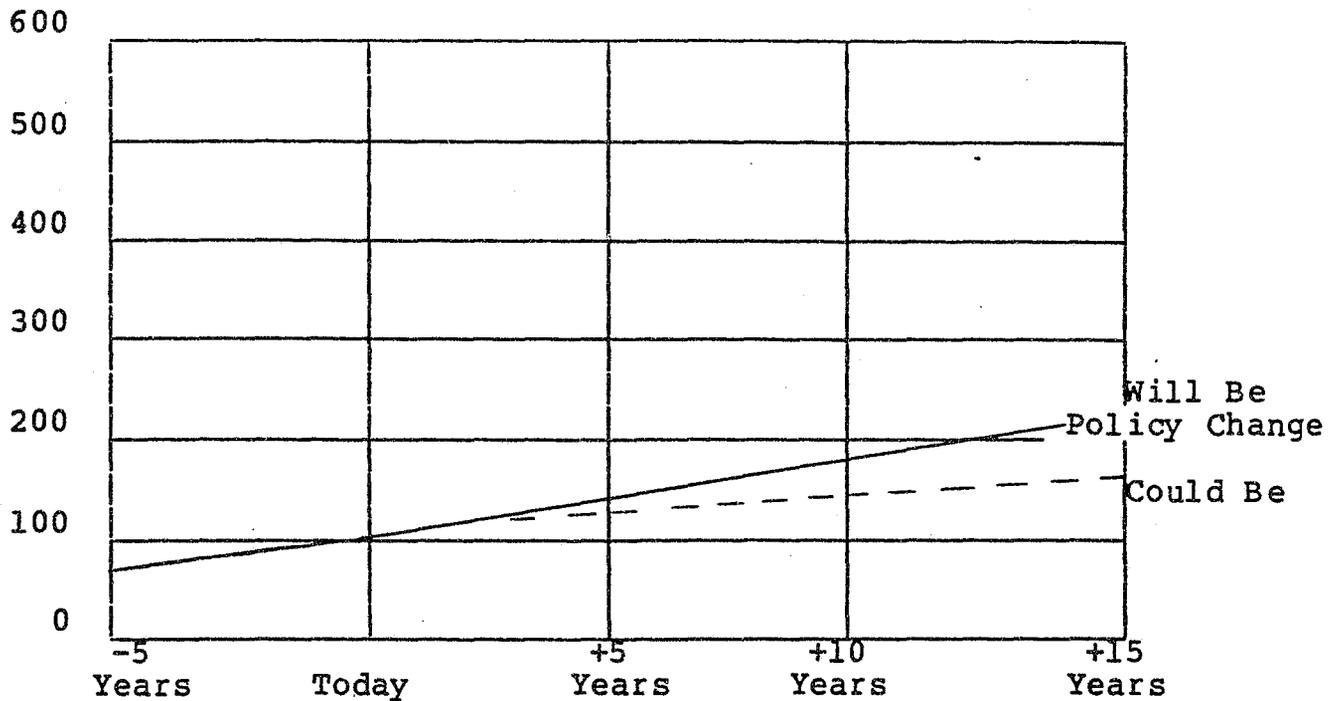
T R E N D #2



2. Public awareness and expectation that law enforcement utilize less lethal weapons.

The group identified this trend as rising slightly over the next 15 years. Also, through appropriate policy change this trend could be enhanced slightly.

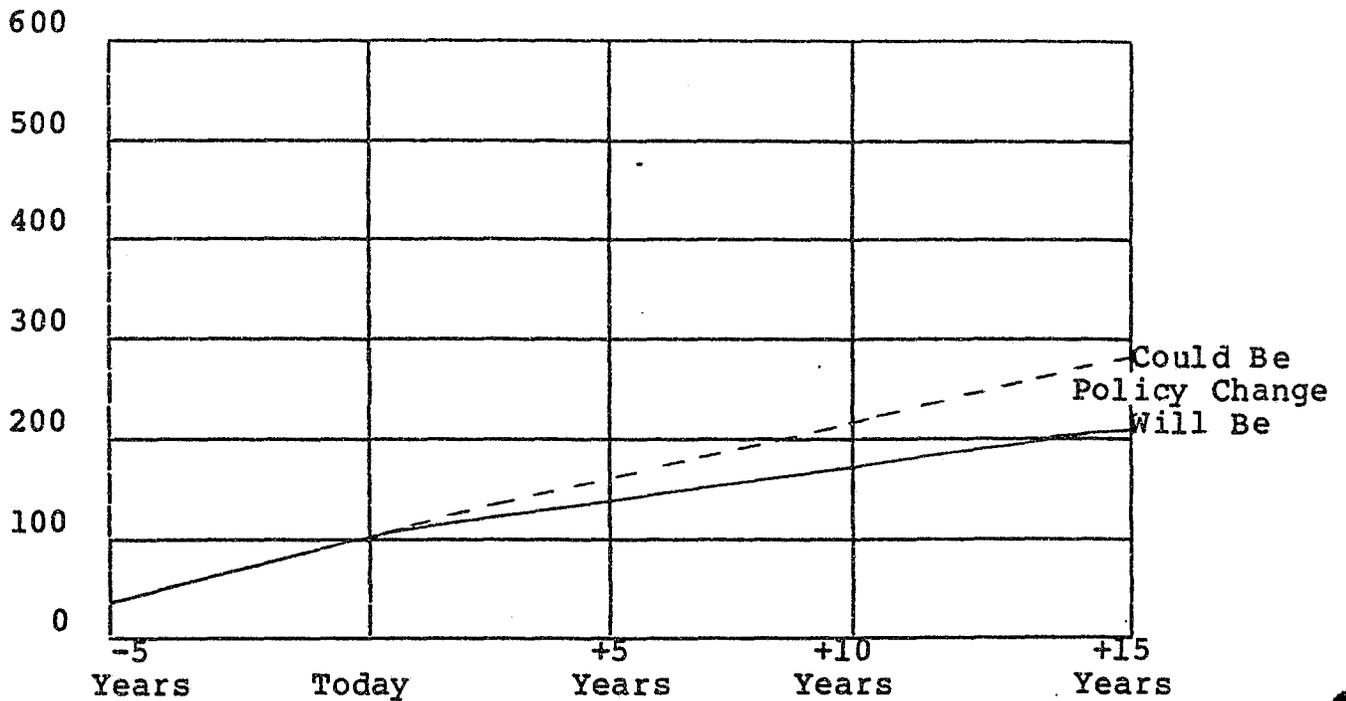
T R E N D #3



3. The increased budget constraints and shrinking fiscal resources.

The graph represents the groups projection that this trend will continue to rise. Through appropriate policy decisions the trend could be reduced.

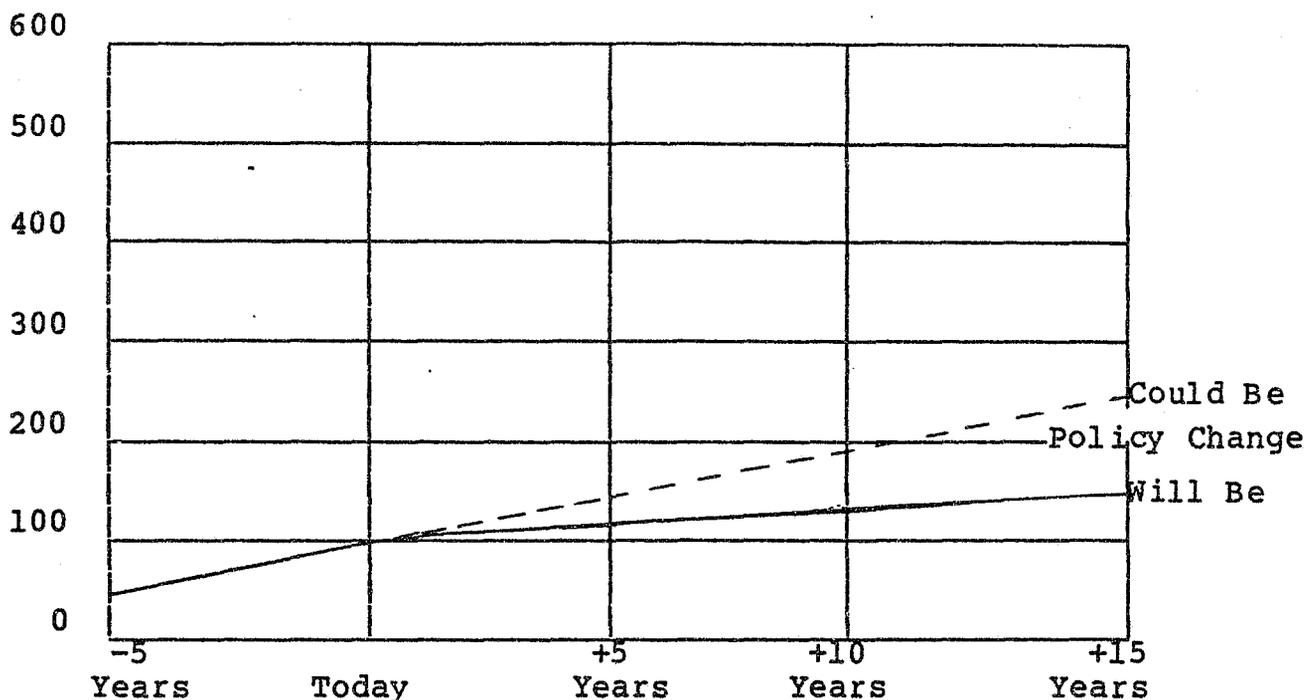
T R E N D #4



4. The increase by law enforcement to acquire less lethal weaponry.

The group felt that this would increase steadily over the next 15 years. Through policy decisions this trend could be increased.

T R E N D #5



5. The continued advances in less lethal weapon technology.

The graph reflects the groups feeling that technology would continue to advance. However, with appropriate policy decisions this trend could be increased.

SCENARIOS

The next step in forecasting the future is to develop 3 possible scenarios. The following scenarios were developed taking into consideration the identified trends and events forecasted, using the cross impact analysis.

SCENARIO 1 - WORST CASE

It is the year 2000. The world continues in the worst recession/depression since the 1930. The banking collapse due to Third World loan defaults in the early 1990's has yet to be repaired. The huge United States Federal deficit kept the United States from being able to absorb the shock of the defaults, and the United States economy reached record lows, with the Dow Jones Industrial Average returning to below 1000.

With the price of oil returning to \$40+ per barrel, the United States foreign trade deficit continues to grow. As the cost of electricity soars, the United States moves to increasing use of nuclear power as a means to reduce dependence on foreign crude oil suppliers.

The financial crash affected the Soviet Union terribly, destroying its ability to purchase food from producing nations. The United States continues to use food as a weapon of diplomacy.

The only sector of the economy that continues to boom is the aerospace/defense industry. With most world economies in shambles, localized civil wars are common. At the present time, the United States is involved in three major "police actions:" Egypt/Middle East, Indonesia, and Central America. Only the wrecked Soviet economy keeps that country from expansionist adventurism.

In the United States, food and race riots have become common. In more than one city, marshal law has been ordered with shoot to kill orders for looters.

Community support for police is high, as it is the last defense against barbarism. But judicial and community attitudes have changed towards suspects and criminals. Judges nominated and confirmed during the Reagan Presidency are likely to side with police in lethal force situations, and are much harder on violent criminals. The public, afraid of the lawless streets, continue to push for more tougher police, but in lean monetary times, police budgets are extremely tight. Any money available is spent on officers.

The less lethal weapons that made a strong showing in the mid-1980's have for the most part disappeared. The cost of such weapons in terms of training, maintenance, support, replacement and upgrade became more than most police departments could afford.

SCENARIO 2 - MOST LIKELY TO OCCUR

The year is 2000. Following the 1993 invasion of Nicaragua by the United States Marines in retaliation to Sandinista forays into Costa Rica and Guatamala, anti United States demonstrations at major universities became common. The hot spot, as usual, was Berkeley, where sit-ins regularly led to violent confrontations with local police. At one such violent demonstration, a mentally disturbed young man opened fire with a semi-automatic "assault" type weapon. Three police officers were killed before their colleagues could return fire. By the time the smoke cleared, the three police officers were dead, but so were seventeen innocent protestors. Although police shooting teams and coroners juries absolved the police of blame, civil liability awards nearly bankrupted the City of Berkeley, California.

Fearing a similar situation in the south, Los Angeles Mayor Michael Woo ordered the Los Angeles Police Department to train a special squad to deal with potentially dangerous demonstrators. The squad was armed only with an array of various less lethal weapons. This squad was backed up by conventionally armed officers. During a major demonstration at the University of California at Los Angeles (UCLA), the Los Angeles Police Department's Less Lethal Weapon SWAT Team disabled 43 rock and bottle throwing demonstrators. One demonstrator, shooting a .22 caliber pistol wounded one officer in the arm, but was disabled and arrested without further incident.

After several more roll-outs for Less Lethal Weapon SWAT Team, the Los Angeles Police Department began teaching seminars in less lethal weapon tactics to police departments nationwide. By 1995, 370 local and major metropolitan law enforcement agencies had initiated Less Lethal Weapon SWAT Teams. Unfortunately, the less lethal weapons available could only be considered improvements over the weapons available in the late 1980's. Aspiring to be the Governor, Mayor Woo organized a national Ad-Hoc committee in 1996 to promote the development of less lethal weapons. Mayor Woo's committee consisted of Police Chiefs of both large and small police departments, Mayors, City Managers, parents, and businessmen.

Using the Freedom of Information Act, the Committee for less lethal weapons obtained records of all military less lethal weapons research and development. In testimony before Congress, Mayor Woo charged that the military was refusing to release non-sensitive less lethal weapon technology on the false pretext of national security concerns. Small and medium sized businesses charged that the military was keeping the technology secret in order to keep large defense contractors from having to compete with smaller, more efficient companies in Less Lethal Weapon manufacturing.

With the continued success of less lethal weapons in the field, the public, and therefore the media became interested in less

lethal weapons. And, under pressure from the White House, the Department of Defense declassified several mature less lethal weapon technologies in the late 1997. Many firms entered the less lethal weapon business, but both the technologies and the less lethal weapons produced continued to be expensive. The military continued less lethal weapon research, and declassified technology when appropriate. Large metropolitan police departments pooled resources to research less lethal weapons peculiar to large urban police situations. Federal funds through the Federal Bureau of Investigation, the Justice Department, and the National Institute of Justice trickled down to contractors who continued to develop improved systems. Smaller law enforcement agencies benefited from the efforts of large police departments and federal expenditures.

By 2000, 89 percent of all police departments had officers trained in state-of-the-art less lethal weapon tactics and technology. The number of less lethal weapons in the field continued to be small when compared to firearms, but their number was increasing yearly. The number of firearms issued declined in relation to the number of officers in the field. Slowly, as costs were reduced less lethal weapons entered service. The Department of Justice forecast predicts near complete saturation of effective less lethal weapons by 2030.

SCENARIO 3 - MOST DESIRED

The year is 2000. Following a 1994 shootout with juvenile gang members where 10 gang members aged 13-17 were killed, the California Supreme Court held in 1995 that lethal force was in appropriate for use by law enforcement officers. The court mandated a transition to less lethal weapons within five years of the ruling. The United States Supreme Court refused to hear the case, and the ruling stood.

Facing the absolute need to develop a group of useful less lethal weapons, the California Chiefs of Police Association formed the Coalition of Police for less lethal weapons, (COPFLWs, pronounced copfellows). COPFLWs consisted of police agencies, industry, politicians, and the public. COPFLWs immediately sent representatives to Washington D.C., to develop relationships with both military and Congressional supports of less lethal weapons.

Using the broad-based infrastructure of business, industry, government, and the military as a wedge, COPFLWs developed support for federal financing of less lethal weapon research and development. The military, anxious to test state-of-the-art less lethal weapons in field situations, was happy to pass appropriate technology and hardware to police departments for use in the field. Although early weapons were in short supply as they were military developed "prototypes," a commitment was made to industry.

In exchange for supporting less lethal weapon activities, the military would release the rights to specified less lethal weapon technology once it proved useful in the field. Under the agreement, specified less lethal weapons would be available to civilian law enforcement and the public, to increase the potential market for the weapons. As the weapons were proven, manufacturers completed to produce the less lethal weapons.

By early 1997, every police department in California had officers armed to varying degrees with less lethal weapons. The partnership of police, industry, and the military worked, as greater number of less lethal weapons were placed in both police and private citizen hands. As more weapons were sold, prices fell, and quality improved. Several offshore manufacturers introduced higher-tech, and more efficient weapons at lower prices.

Although no other state's supreme court ruled deadly force unconstitutional, other state's law enforcement agencies looked to California as both the leader and the experimenter. With the exception of several southern states, most other states began a concerted effort to equip officers with less lethal weapons as a precursor to adverse legal or legislative action against lethal force. This increased the demand and market for less lethal weapons to an even greater extent.

As California police shooting and lethal force incidents dropped to nearly zero, the news media increased exposure in early 1990, and California police and public officials all began to take credit for less lethal weapon development. The media was happy to give such spokesmen a forum, as less lethal weapons became a hot topic around the country. By the end of 1990, 12 states, mostly northeastern metropolitan states began a voluntary police disarmament program, increasing the market for such systems even more.

At the beginning of 2000, the military announced the perfection of hand-held charged partical beam weapon (CPB). This gave police officers all the benefits of a sidearm, with less lethal weapon capability. The weapon had been tested for nearly two years in South Central Los Angeles. Used eighty-seven times in field situations, only one death occurred due to the weapon.

The military indicated that it would be at least five years until the weapon could be mass produced, but following the announcement, twenty-two other states announced voluntary police disarmament programs. There have been unconfirmed rumors, however, that several suspects had escaped using an electronic shield of some type to protect themselves against the charged partical beam weapon. Other such devices have been effective to varying degree against other types of less lethal weapons, but none had ever been effective against charged partical beam generators. Research

commenced in 1997 by the military for the development of such a shield for military/police use.

III. STRATEGIC PLAN

STRATEGIC MANAGEMENT

A review of the three broad based policy alternatives facing California law enforcement and the resulting possible scenarios, a favored policy can be determined.

Both, the policy of opposing less lethal weapons causing the least desired scenario and doing nothing causing the most likely scenario are unsatisfactory to California law enforcement. Considering the current trends and likely events of the future, both these policy options are unacceptable.

California law enforcement prides itself in being a responsible, proactive profession ready to meet the challenges of the future. The policy of taking an affirmative proactive supportive position, promoting the use of less lethal weapons thereby increasing the likelihood of the most desired scenario becoming a reality is the preferred policy.

The purpose of this chapter is to identify a strategic plan which will move California law enforcement towards the implementation of this policy and ultimately toward the realization of the desired scenario.

This strategic plan will use the SMEAC model as the structure for the proposed plan. SMEAC is an acronym for an analysis of the

situation, a mission statement, a plan for execution, administration and logistics, and required command and controls.

SITUATION

ENVIRONMENTAL ANALYSIS - OUTSIDE THE ORGANIZATION: California law enforcement does not exist in a vacuum. We are a small but obviously vital part of society.

Today, the availability of less lethal weapons to law enforcement are limited and not totally effective. We have seen very little improvement in the last 15 years.

The critical trends identified through the modified Dephi process as being important to the issue of less lethal weapons are: increasing liability in the use of force, the growing public's awareness and expectation that less lethal weapons are utilized, the increasing interest within law enforcement for deployable less lethal weapons, shrinking fiscal resources, and continuing advances of technology.

The most important events identified were the possibility of: legislation limiting civil liability, highly controversial police shooting, court decision/legislation eliminating the use of deadly force by law enforcement and the possibility of a major advancement in less lethal weapon technology.

Each one of these trends and events can be viewed as either a threat or an opportunity to California law enforcement depending its potential impact.

For instance, the trend of increased liability poses a real threat to California law enforcement; society is getting more litigious, settlements and awards are costly, legal defense fees are increasing, and police officers are concerned about their personal civil exposure.

The trend of the increased public awareness and expectation that law enforcement will utilize less lethal weapons can present both an opportunity and a threat. If California law enforcement can enhance this trend the public may respond with fiscal resources and commitment to furthering the development of less lethal weapon technology. However, if the law enforcement community ignores this trend and does nothing to further development of less lethal weapon technology; we find ourselves in a situation where the public expects us to use weapons which are ineffective or unsafe.

The trend of shrinking fiscal resources is viewed as a threat. The research and development of less lethal weapons will cost money. Anticipated budget constraints in the future will limit the available resources and competition for these resources will come from many levels of government.

However, the trend of increasing interest within law enforcement for deployable less lethal weapons presents a opportunity. Law enforcement can take advantage of and nurture this growing interest. This interest by law enforcement can be the catalyst to the development of an effective deployable less lethal weapon.

ORGANIZATIONAL CAPABILITY ANALYSIS: As in any industry or community, an analysis of California law enforcement indicates both strengths and weaknesses, concerning the issue of less lethal weapons.

Strengths: California law enforcement is well trained and professional. Virtually all sworn personnel attend a POST certified basic academy. Furthermore, law enforcement in this state prides itself with its continuing education and training programs aimed at keeping personnel current on trends, laws and procedures. Also, law enforcement in this state has been generally free of graft and corruption scandals.

Due to the vast areas of jurisdiction, law enforcement in this state has been on the cutting edge of transportation and communication technologies. Cars, aircraft (both fixed and rotary wing) and the communication devices used to network field personnel are state-of-the-art. Law enforcement is well equipped, even during times of budget constraint. It is well supported by

both the civilian population and government. This support comes from a history of providing service and protection to communities, professionalism, and a lack of major scandals.

California law enforcement is by and large progressive in nature (open to change) attentive and responsive to the citizens concerns and needs.

California law enforcement has attracted quality employees who are interested in providing a high service level to the citizens of this state.

These strengths are generic in nature, but are vital to making less lethal weapons a success in the field. Conversely, the identified weaknesses are specific to less lethal weapons in terms of successfully introducing the technology into the field.

WEAKNESSES: As a community, law enforcement has no central organized body making policy, or acting as spokesmen for the various agencies. This lack of a central body hinders law enforcement in its ability to present proposals to both the public and government. Due to a combination of large area, many jurisdictions and a wide discrepancy in terms of department size, law enforcement agencies have to some degree become provincial in attitude, often only working together during times of need, rather than as an ongoing relationship. This provincial mindset does

much to hinder a spirit of cooperation between agencies, the sharing of ideas and technologies, or developing a true esprit de corps among law enforcement agencies.

Similarly, law enforcement has failed to develop a strategic plan for less lethal weapon development and introduction at the agency or community level. Without such a plan, the introduction of less lethal weapon training and technology will be haphazard, spotty and inefficient. Furthermore, resistance from negative stakeholders, will be greater and more effective in blocking less lethal weapons due to the non-coordinated efforts by law enforcement.

Lack of funding is a weakness that all law enforcement agencies seem to be facing. With the advent of Proposition 13, California law enforcement has faced reduced budgets statewide. Nationally, the trend to cut property and other state taxes has had the effect of also reducing law enforcement budgets. Reduced funding usually has the effect of reducing expenditures for equipment and maintenance to focus spending on manpower requirements. Such a fiscal position would reduce the ability of law enforcement agencies to invest less lethal weapon training and hardware.

Overall, both field officers and management, are uninformed regarding Less Lethal Weapons. Field personnel have little general knowledge of the technology beyond systems they presently

use. Since there are few guidelines regarding these weapons, even officers now carrying them rarely utilize them due to fear, lack of training, or other reasons based on ignorance. Similarly, management personnel are uninformed regarding the technology and less lethal weapon use.

Like many bureaucracies, police agencies are sometimes resistant to change. From the field officer to management, law enforcement can be expected to resist to use less lethal weapons unless mandated. Change is stress producing, so resistance to change is not unexpected. But veteran officers at all levels may see less lethal weapons life threatening to police.

Just as the military keeps much of its hardware proprietary, police are resistant to private citizens having access to their technology. Police dislike the public having police scanners, bullet proof-vests, flashers, police radios, mace, stun guns, Tasers and radar detectors. They can also be expected to argue against private citizens having less lethal weapon technology. Keeping the public from having less lethal weapons will have the effect of reducing the overall market for such systems, therefore reducing the profit motive for private sector development of less lethal weapons.

STAKEHOLDER AND SNAILDARTER ANALYSIS

Introduction

Stakeholders are those individuals or groups who have an interest or "stake" in the organizations activities. A snaildarter is an individual or group that stops or hinders the direction which an organization wishes to pursue. This can be accomplished through action or by inaction. Stakeholders and snaildarters can be internal or external to the organization.

This section will identify the stakeholders, and assign assumptions to the stakeholders. An assumption is a brief description of how the stakeholder feels about the issue of less lethal weapon.

Stakeholders can be supportive, create opposition or have mixed or conflicting interest. Identifying, evaluating and mapping their positions is essential for insuring successful implementation of strategy.

STAKEHOLDERS/ASSUMPTIONS

1. Police Officer - mixed position
 - A. Supportive of effective weapons
 - B. Concerned about personal safety
 - C. Uninformed about capabilities

2. Police Chief/Sheriff - support
 - A. Concern for officer safety
 - B. Concern for misuse or abuse
 - C. Will want to maintain support of officers
 - D. Avoid lawsuits

3. Media - mixed position
 - A. Supportive - if used correctly
 - B. If misused media will sensationalize
 - C. Pro or con depending on what makes money

4. Citizens - mixed
 - A. Misinformed mostly negative
 - B. Concerned about misuse
 - C. Supportive of alternatives to lethal force

5. Local, State, Federal Government - mixed
 - A. Budget concerns
 - B. Enthusiastic concerning reducing liability
 - C. Currently uninformed

6. Military establishment - mixed
 - A. Interest in technology
 - B. Concerns about classified information
 - C. Willing to cooperate to a point

7. Private sector manufacturers support
 - A. Possible source of profit
 - B. Very cooperative

8. Private security firms support
 - A. Limits liability exposure
 - B. Will want weapons approved for use by security guards

9. American Civil Liberties Union type organizations - oppose
 - A. Concerns about misuse
 - B. Violations of civil rights

SNAILDARTERS

1. LAW ENFORCEMENT

A. Police Chiefs

- Some Chiefs due to resistance to change/maintain status quo will oppose

B. Police Officers

- Some officers simply because of resistance to change will oppose
- Some due to officer survival issues, safety, effectiveness will oppose

2. MEDIA

- #### A. News agencies in the business of sensationalism will oppose

3. MILITARY

- #### A. Some military personnel will stress classified information concerns and oppose

MAPPING STAKEHOLDERS AND ASSUMPTIONS: A graphic display of the stakeholders and assumptions appears in the following assumption map. The purpose of plotting each position is to assist in understanding: 1) How important each stakeholder is to the issue of less lethal weapon, and; 2) How certain or uncertain is the stakeholders assigned assumption?

As a general rule stakeholders located in the upper half of the graph will require monitoring by management. Stakeholders located

in the lower half will require effective leadership by management to provide the direction necessary.

For example, stakeholder/assumption 1B and 1C are located in the lower right quadrant. Specifically, the stakeholders are police officers and the assumptions are that police officers are concerned for personal safety and uninformed about less lethal weapon capabilities. The graph depicts the fact that both these stakeholder/assumptions are important to the issue and that there is a varying degree of uncertainty to the assigned assumption. Consequently management must provide the leadership to insure police officers are informed about the capabilities of less lethal weapons and their concerns for safety satisfied.

Another example, is stakeholder/assumption 7A and 7B, which are located in the upper left quadrant. Specifically, the stakeholder is private sector manufacturers and the assumptions are that they will be supportive and see this issue as a source of profit. The graph depicts the fact that both these assumptions are relatively less important but are relatively certain. Both these assumptions would require monitoring by management but not real direction or leadership.

The graph is a tool used to plan where resources can be best put to use.

CERTAIN

1A

2D
7A
7B
4C

5B

6A

8A
8B

2A
2B
2C

6C

3A

4A
5C

(LESS IMPORTANT)

(MORE IMPORTANT)

4B
1C

5A

3C

6B
9A

9B

1B

3B

UNCERTAIN

MISSION STATEMENT

California law enforcement is dedicated to providing the highest level of police service in a cost effective manner to citizens of this state. This commitment includes: to protect life and property, the prevention of crime, the identification and arrest of criminals, the preservation of peace, and provide other police services in order to be responsive to the citizens needs.

California law enforcement has maintained a proactive and progressive attitude towards developing technology and implementing new equipment. California law enforcement shall take an active role in the development and introduction of less lethal weapons. This position is justified based on the issues of public safety, service to the community, liability, and in the interest of officer safety.

EXECUTION

So far in this paper, we have explored trends and events, assessed the situation today, and identified a mission statement we want to achieve.

The following three alternative strategies are courses of action California law enforcement can implement that will move us towards

the achievement of the previously identified mission statement.

ALTERNATIVE 1

Promote and invest in the research and development of less lethal weapons.

Financial and human resources must be identified and committed to the research and development of less lethal weapons. This commitment must be long term and consistent.

This alternative recognizes that law enforcement cannot afford to sit back and wait for a haphazard development of less lethal weapon technology. Law enforcement administration must recognize that no one is going to do this for us. If we are going to have useful less lethal weapon we must participate in this development stage.

Private sector research and development must be encouraged and supported. Also, the involvement of the military must be explored as the possibility exists that technology already exists in the military's arsenal.

A motivating factor for the private sector manufacturers is profit. Industry and law enforcement must work together to develop these systems, but must also work together to develop the less lethal weapon markets.

One of the disadvantages of this alternative strategy is the costs involved. Money for research and development is always looked upon in a skeptical manner. In the future with shrinking fiscal resources this problem will become more acute.

The partnership of public sector law enforcement and private sector manufacturers will be controversial but not unheard of.

The political makeup of legislative bodies and executive branches of government is constantly changing. Consequently the likelihood of a long term and consistent financial commitment is difficult to control.

The stakeholders will react to this strategy in various ways.

Police officers if involved in the process of research and development will be supportive.

Police Chief/Sheriff will be concerned about amount of resources committed but will be generally supportive.

Private sector manufacturers will be very supportive for obvious financial reasons. As will private security firms.

The military will have concern about releasing classified information but generally will be supportive.

The news media and citizens due to lack of information or misinformation may be opposed.

ALTERNATIVE STRATEGY #2

Implement education and training of personnel.

One of the weaknesses discussed earlier was personnel being uninformed. This relates not only to less lethal weapon technology, but to availability, tactics, when to deploy, policy on misuse, and a basic understanding that less lethal weapons are a positive alternative to deadly force.

This alternative recognizes that all levels of California law enforcement; top level administrators, middle managers, line supervisors, and officers all must be educated in the merits of less lethal weapon technology and trained in the proper use.

The goals and objectives of comprehensive training program will have to be identified. Once lesson plans are established, existing training vehicles can be utilized to deliver the training. On the State or Regional level, P.O.S.T. training can be expanded to include this training. On a local level the use of roll call training and other educational programs can be used.

As with most training, this is costly to the individual departments as well as the State of California. The cost is not only in terms of dollars directly associated with training; but in terms of officers time away from assignments not doing productive police work.

As part of training, law enforcement will have to establish policies and procedures on the use of these weapons. Then effectively train personnel regarding these policies and procedures. The law enforcement community must deal firmly with any abuse or misuse of these weapons.

The stakeholders will view this strategy in various ways.

The Police Chief/Sheriff will generally be supportive of a comprehensive education/training program. But will have some concern regarding costs.

Police Officers will at first be apprehensive but generally supportive. Their concerns regarding officer safety and weapon effectiveness will be addressed with this strategy.

The news media and citizens will be supportive of training programs recognizing that this will reduce the possibility of misuse.

The local, state, federal government politicians will have concerns over costs vs. benefits.

ALTERNATIVE STRATEGY #3

Educate the public and news media concerning law enforcement use of less lethal weapon.

How the news media portrays and presents less lethal weapon is critical to the public's perception of law enforcement using this technology. Likewise, the public's acceptance of law enforcement using this technology is critical to the ultimate application of this technology. The public must be supportive of law enforcement using less lethal weapon.

By educating the news media and public concerning less lethal weapon technology and appropriate law enforcement applications of this technology we will build the necessary support.

Keeping the news media and public informed of the progress in technology will start breaking down the existing concern.

An example of the importance of educating the public is the use of police dogs. 15 years ago, the thought of law enforcement using police dogs was unheard of. The major concern being the public's

acceptance. But law enforcement educated the public on the problem, alternatives and desirability of K-9 units. Today K-9 units are an important part of many departments, fully accepted by the news media and public.

The same strategy is necessary with less lethal weapon. Most law enforcement agencies have crime prevention programs which could be expanded to include this technology.

Personnel resources and dollars will have to be committed to this strategy. With the shrinking fiscal resources this could be of concern in the future.

The stakeholders will view this strategy in various ways.

The news media and public will be supportive of the "open door" policy. They will be appreciative of being provided the information their support will be contingent upon the merits and soundness of less lethal weapon technology program.

The Police Chief/Sheriff will be supportive of the strategy. They recognize the importance of the public's support and approval. But will have concern about costs.

Police Officers are sometimes hesitant to share information with the news media and public. Police officer will have mixed feelings.

The military establishment will be concerned about the release of information.

Private sector manufacturers will be supportive of this strategy. They will be interested in creating a market for their products.

RECOMMENDED STRATEGY

After reviewing the three possible alternatives it was determined all three have merit. Each alternative has different components that have support from stakeholders and are feasible and desirable.

The recommended strategy is that the 3 alternatives be integrated into a single strategic plan with the long term goal:

- California law enforcement promote the use of less lethal weapon technology.
- Create a partnership between civilian law enforcement, military, and private sector manufacturers insuring development of less lethal weapon.

The following is a list of strategic steps which will take California law enforcement from where it is now to the realization of our goal.

- Form a state-wide advisory committee to oversee the development of less lethal weapon technology for civilian law enforcement.
- Prepare educational and training materials for crime prevention programs in order to educate news media and the public.

Long term leadership can be determined by the advisory committee. First and foremost, the central figure of authority must be a strong leader who can act as both lightning rod and catalyst. Possible candidates would be a major politician, a Police Chief or Sheriff with statewide recognition or the Attorney General.

The advisory committee will set priorities and develop a timetable to implement the recognized steps.

COMMAND AND CONTROL

A control or monitoring system must be established to ensure control, keep on track, review and update the strategic plan.

The statewide advisory committee through an appropriate use of both operation and and periodic planning techniques will provide direction, goals, audits and reviews to reach the stated objectives.

- Sponsor a 2 or 3 day workshops bringing together civilian law enforcement, private vendors, resource and development community, military to discuss, brain storm, and identify possible technology.

- As weapons are developed, build in safeguards against abuse by proper policies and procedures for law enforcement personnel, provide adequate training.

As indicated earlier, a key factor is to educate and inform the public, politicians and law enforcement personnel regarding the benefits of appropriate application of less lethal weapon technology. Then insuring the proper use of this technology by law enforcement personnel and a long term commitment of resources in order to insure viable results.

ADMINISTRATION AND LOGISTICS

A short term goal of major importance is to establish leadership for the development of less lethal weapon technology. Someone who is responsible for making things happen. Organizations such as California Police Chiefs Association or California Sheriffs Association must provide the short term leadership until the statewide advisory committee is established.

- Prepare educational and training materials for roll call training for police personnel.

- Coordinate and implement the basic education of the news media and public regarding the benefits of the proper application of less lethal weapon technology.

- Institute similar training of police personnel.

- State-wide committee must be building liaison and support from local, state, and federal legislative bodies for a commitment of fiscal resources.

- State-wide committee must promote a partnership between civilian law enforcement, private sector manufacturers and military to work in unison toward development of less lethal weapon technology.

- State-wide committee must identify and define the requirements for future less lethal weapon technology.

- State-wide committee must apply pressure to the State of California P.O.S.T. to present training courses on less lethal weapon technology.

IV. TRANSITION MANAGEMENT

TRANSITION MANAGEMENT

What does California law enforcement need to do to assist in the transition from today's less lethal weapon technology to the preferred technology of the desired future state. This chapter will identify the "critical mass" and describe a management structure that will manage this planned transition.

CRITICAL MASS ANALYSIS

A continuation of the process of identifying stakeholders and snaildarters, discussed in the previous chapter, is to develop a commitment plan.

The stakeholders and snaildarters are analyzed and the critical mass is identified. The "critical mass" is the key number of individuals or groups whose support is essential to the success of the strategic plan. The commitment level of the critical mass is then analyzed in terms of block change, let change happen, help change happen, or make change happen. This is helpful in identifying individuals or groups which must be targeted and lobbied in order to move them to where their commitment level needs to be for success.

The following chart is a graphic representation of the critical mass, their present commitment level (today) and the necessary commitment level (X).

CRITICAL MASS INDIVIDUALS/GROUPS	BLOCK CHANGE	LET CHANGE HAPPEN	HELP CHANGE HAPPEN	MAKE CHANGE HAPPEN
Police Chief/ Sheriff		Today ----->		X
Police Officer		Today ----->	X	
Public		Today ----->	X	
LOCAL STATE GOVERNMENT		Today ----->	X	
PRIVATE SECTOR MANUFACTURERS			Today	
MILITARY ESTABLISHMENT		Today ----->	X	
MEDIA		Today ----->	X	

COMMITMENT PLANNING

Police Chief/Sheriff: Chiefs and County Sheriffs for the most part support expanded use of less lethal weapons. However, few have taken a leadership role in the development of technology. Chiefs/Sheriffs have been content with an inactive role, (let change happen). Chiefs/Sheriffs most accept the role as catalyst and make change happen. They should be educated concerning the various issues surrounding less lethal weapon technology and the anticipated benefits.

Chiefs/Sheriffs should be the spokesmen promoting the partnership of civilian law enforcement, private sector manufacturers, and military in developing less lethal weapon technology.

Chiefs/Sheriffs will be essential to positively impacting the other critical mass players and moving them to the required commitment.

Police Officer: Police officers are analyzed as having a let change/block change position. Police officers have had generally poor experience with current less lethal weapon technology. They are uninformed concerning the potential capabilities. They have concern for their personal safety and liability. Liability in terms of applied deadly force and use of less lethal weapons.

Since police officers are going to be the ones actually using this technology their support is critical. Through education and training it is anticipated that this group can be moved to a help change happen commitment.

Police officers should be actively involved and participate in development of the technology; providing needs requirements, field testing and constant feedback. Statewide, police officer support can be solicited through such organizations as Peace Officers Research Association of California and California Peace Officers Association.

Local, State, Federal Government: The control of the fiscal resources rests with local, state and federal government officials. This groups is analyzed as currently having a let change happen position and must be moved to a help change happen commitment.

This group is relatively uninformed regarding less lethal weapon technology/and potential benefits of civilian application. They have concerns regarding fiscal resources and liability. It is anticipated that this group will mirror the public viewpoint with some exception.

A program of educating this group will establish the need for this

technology. Through such organizations as California Police Chiefs Association and California Sheriffs Association this groups support can be secured.

Public: The public is analyzed as currently have a let change/block change position and must be moved to a solid let change happen position.

The public is concerned about misuse of weapons, misinformed concerning the application, but supportive of alternatives to lethal force.

Most law enforcement agencies today have crime prevention program. An expansion of these programs to include information on less lethal weapon technology is critical to gaining the publics commitment.

Private Sector Manufacturers: The private sector manufacturers are currently viewed as having a help change happen commitment. This is an acceptable commitment for this group. Their continued commitment will depend on recognizing that a motivating factor for this group is profit.

Military Establishment: The military is analyzed as currently

having a let change/block change position and must be moved to a help change commitment.

This group is concerned about releasing classified information but would be interested in the technology applications.

The local, state, federal government officials could be used to provide the incentive (continued budget levels) for the military to participate in the research and development of this technology.

Currently the military and civilian law enforcement have excellent relationships in many areas. An acceptable commitment could be realized in an informal manner through strengthening existing personal relationships and building a better rapport.

News Media: The news media is analyzed as currently having a let change/block change position and must be moved to a let change happen commitment.

The news media's portrayal of less lethal weapon technology and civilian law enforcement application is critical to how two other stakeholders view the issue. These are government officials and the public.

By educating the news media, having an open door policy, keeping them informed of progress and through cooperation, the news media's commitment to let change happen will be realized.

MANAGEMENT STRUCTURE

A management structure that can help California law enforcement manage the transition from today's less lethal weapon technology to the desired future state of effective application of this technology in civilian law enforcement must be established. The initial management structure will differ somewhat from the ultimate future structure.

Some group or individual must accept the initial leadership role necessary to gain the partnership arrangement between civilian law enforcement, private sector manufacturers and the military. This role would most likely fall on such organizations as California Chiefs of Police Association, California Sheriffs Association, or P.O.S.T..

A subcommittee of one of these organizations could be formed and led by a Chief of Police or Sheriff. The committee could then identify the goals and objectives, establish a time line, provide the initial resources to bring together the various stakeholders,

and gain the commitment of the stakeholders. This is the critical step from where California law enforcement does little concerning this issue to taking a proactive positive visionary role of creating the future.

The permanent management structure would follow. This would be the statewide advisory committee representing a "diagonal slice" of the various stakeholders. The term "diagonal slice" refers to utilizing a cross section of relevant subsystems using people representative of various functions.

The "diagonal slice" structure inherently lends itself to gaining a commitment from the stakeholders.

A suggested committee would be composed of representatives from Chiefs of Police, police officers, public, military, news media, politicians, and private sector manufacturers.

This committee must be chaired by a strong leader committed to the identified goals.

SUPPORTING TECHNOLOGIES

Supporting technologies are tools or processes which can be used to facilitate and support the transition.

MEETING DESIGN/MANAGEMENT

The advisory committee will have to structure the meetings for the most productivity. This would include analyzing the team for environmental influences, technical expertise, capabilities, and what resources the committee has or needs. Planning for future meetings will use the O-M-R model; identifying desired outcomes available methods, and necessary resources.

TEAM BUILDING

The advisory committee will have to develop into a cohesive team to maximize their effectiveness. Team building activities should include; establishing goals, identifying roles of members, policies and procedures, establishing relationships, recognizing the value of individuals.

EDUCATION/TRAINING

This is critical point which was previously identified. Gaining the commitment and support of stakeholders and more importantly the critical mass is through education/training. Such methods would include, crime prevention programs, roll call training, public meetings, newsletters, and the news media itself.

SUMMARY

Available resources to support this plan are also important. Some additional suggestions include the following: local governments can collectively pool resources, or the state government can identify some financial resources to assist funding this effort. Such as earmarking a percentage of fine money or bail forfeitures to help funding. With the prospect of potential profits, the private sector manufacturers can be expected to provide some research and development resources.

During the time that California law enforcement moves from the present state to the desired future state requires a specific management process. This management structure will facilitate the transition. The "critical mass" or key people whose support and commitment is essential to accomplish the strategic plan have been identified and discussed. Required procedures, methodology and supporting technologies have also been suggested.

V. CONCLUSIONS

CONCLUSIONS

This report has focused on the future of less lethal weapons in law enforcement. Police officers are constantly faced with challenge of dealing with violent and dangerous individuals. Current methods and equipment deployed in these situations are not as reliable or efficient as law enforcement would like. Is it possible to give law enforcement officers a viable option to firearms in potentially violent or dangerous situations?

Five current relevant trends which will impact the future of less lethal weapon technology in law enforcement include: 1. Increased liability in the use of force; 2. Public expectation that law enforcement utilize less lethal weapons; 3. Shrinking fiscal resources; 4. Increase interest by law enforcement to use less lethal weapon; 5. Technological advances in less lethal weapon.

Five events which were identified as having a significant impact on this issue if they were to occur: 1. Legislation limiting civil liability for law enforcement agencies; 2. Highly publicized police confrontation; 3. Legislation or court decision abolishing lethal force; 4. A technological breakthrough in less lethal weapon; 5. Recession/depression.

An analysis of the current trends and possible events creates three future scenarios described as: 1. Worst Case; 2. Most

Likely to Occur; 3. Most Desired. The policy of taking an affirmative proactive position, promoting the use of less lethal weapons thereby increasing the likelihood of the most desired scenario becoming a reality is the preferred course of action.

California law enforcement must develop long term strategic plans to prepare for the future. The plan must recognize there are stakeholders which are not supportive of the application of less lethal weapon technology in civilian law enforcement. We must anticipate and effectively gain their support and commitment.

Three strategies which will help California law enforcement develop effective less lethal weapon technology are to: 1. Promote and invest in the research and development of less lethal weapon; 2. Implement education and training of personnel; 3. Educate the public and news media concerning law enforcement's use of less lethal weapons.

California law enforcement must develop a strategic plan based on solid communications principles. With the goal of creating a partnership made of civilian law enforcement, military and private sector manufacturers. Civilian law enforcement will provide the needs requirements. The military must share and provide the technology. The private sector will provide research and development and manufacture the less lethal weapon technology.

If California law enforcement fails to respond to the challenge, unfortunately someone else will. In the absence of a proactive position by California law enforcement, somebody or some group will provide the direction and make the decisions regarding this issue. This policy or direction may be provided by the state legislature, the courts, private sector manufacturers, or the news media.

California law enforcement needs to take a proactive position concerning the whole issue of the appropriate application of less lethal weapon technology. The leadership of California law enforcement, i.e., California Police Chiefs Association or California Sheriffs Association must collectively examine and develop a well thought out policy position in this issue. The leadership must come to the forefront and take charge of the responsibility for promoting technological development. We must spark the interest among those segments of our society that have been identified as being critical to the future development of less lethal weapons.

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