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NONLETHAL WEAPONS AND THEIR ROLE IN MILITARY POLICE MISSIONS

FUTURE FACT OR FANTASY?

by

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Abstract

Military police face new missions where traditional weapons of minimum force are ineffective and deadly force is inappropriate. Nonlethal technologies such as polymer, calmative, and chemical agents, are being developed into antipersonnel and antimaterial weapons that can minimize and/or eliminate casualties and collateral damage. The DOD should exploit the development and use of nonlethal weapons and adapt them to military police missions. Many issues, however, must be addressed before nonlethal weapons are fully integrated into the military arsenal. Cost, practicality of use, environmental effects, and safety issues are just a few of the questions which must be answered. Additionally, tough policy, legal, and ethical problems must be tackled before nonlethal weapons may be used on a daily basis. These concerns and problems are not insurmountable. The sooner the issues are addressed, the sooner military police will gain greater flexibility in response to their nontraditional missions. Nonlethal weapons cannot be developed in a DOD vacuum. It will benefit the DOD to enter into a "marriage of convenience" with civilian law enforcement agencies such as the Department of Justice.

Chapter 1

Introduction

In the last five years, nonlethal technology has slowly transitioned from a fantasy idea to a fact of life. To date, nonlethal technology has been applied to existing weapons as well as used to design new weapons of "mass disruption" (45:146-159). All military services have recognized the unique capabilities nonlethal technology and weapons offer within the spectrum of conflict. Nonlethal weapons (NLWs) can fill the void in situations where traditional weapons of minimum force are ineffective, and deadly force is inappropriate.

NLWs should be of great interest to those in the military who carry a weapon on a daily basis, in particular, our military police forces. My thesis is the US military should fully exploit the development and use of NLWs and adapt them to military police missions. For the purpose of this paper, military police will refer to Air Force security police as well as Army and Marine Corps military police. This paper will define NLWs, describe types of NLWs which could be used to fulfill military police missions; the many variables to consider before procuring and using these weapons; policy, legal, and ethical issues; situations where NLWs have been used; and concerns one must address before using NLWs.

Chapter 2

Definition of Nonlethal Weapons

Before we go further, a definition and explanation are necessary. What is a nonlethal weapon, and why does such a term generate great emotion and debate? First of all, NLWs are referred to by many names. "Soft-kills," "less-than-lethals," "disablers," and "incapacitors," are just a few descriptors bandied about in recent literature. Secondly, there are as many definitions as there are names for these weapons. The definition to which the military may adhere was recently proposed in a December 14, 1995 draft DOD Directive entitled *Policy for Non-Lethal Weapons*. The draft directive states:

> "Non-lethal weapons are weapons systems that are explicitly designed and primarily employed so as to incapacitate personnel or material, while minimizing fatalities, permanent injury to personnel, and undesired damage to property and the environment" (10:1).

The emotion and debate exist because many NLWs critics *and* supporters claim terms such as "nonlethal" and "soft kill" are misleading because even NLWs can result in death (23:4; 37:5). The draft DOD policy acknowledges this valid concern by further stating:

> "Non-lethal weapons will not be required to have a zero probability of producing fatalities or permanent injuries. However, while complete avoidance of these effects is not guaranteed or expected, when properly employed, non-lethal weapons should significantly reduce them as compared with physically destroying the same target" (10:3).

Chapter 3

Types of Nonlethal Weapons

The types of NLWs available are limited only by a lack of imagination and money. Today, military police today have at their disposal a variety of antipersonnel and antimaterial NLWs. The following describes several nonlethal antipersonnel weapons under development or already in use, as well as the effects of these weapons:

Antipersonnel Technology

Acoustics

- Noise Generator. One acoustic NLW is the noise generator, which emits very low frequency sounds that can incapacitate humans by making them dizzy, vomit, or lose control of their bowels (1:43; 12:28).
- Beam Weapons. Beam weapons offer alternatives to bullets. Traditional bullets are replaced with high frequency acoustic beams, which can produce "blunt-object trauma like being hit by a baseball"(1:43).

Chemicals

- Sticky Foam. Fired from a shoulder-slung dispenser, strings of sticky foam expand on contact and literally stop someone in their tracks, immobilizing them in a gooey mess in a matter of seconds (14:14; 15:6; 29:890).
- Aqueous Foam. Aqueous foam is a soapy foam that expands up to 500 times its original volume. It prevents people from seeing, hearing, or moving, thus disorienting and immobilizing them (6:25; 41:11).
- Polymer Agents. Polymer agents are adhesives or "superglues" which immobilize; people can be "glued" to objects or to other people (12:28; 13:70).
- Calmative Agents. These agents are sleep-inducing drugs mixed with dimethyl sulfoxide (DMSO), to speed up the absorption through the skin by 1000 percent.

Calmative agents can be dispersed in volume by aircraft (like crop dusting), or by an aerosol spray container (1:40; 21:14).

- Tear Gas and Mace. Tear gas and mace have been popular since the 1960s and available to military police for years. Tear gas can be made from two different chemicals—chloroacetaphenone (CN) or orthoschlorobenzalmalononitrite (CS). The military usually uses tear gas made from CS, which is launched rather than sprayed. CN is better known as Mace, which is used as a spray. Both of these chemicals are irritants that make the eyes tear. (39:110; 44:21; 43:28).
- Pepper Spray. Nicknamed "cop in a can," pepper spray has gained great popularity throughout military and civilian police organizations. The ingredient in pepper spray is oleoresin capsicum, which is found naturally in cayenne or hot peppers. Oleoresin capsicum is an inflammatory agent which causes a much different reaction than the irritants found in mace and tear gas. Pepper spray causes the eyes to swell shut versus tear, and the airway to swell. A victim's vision and breathing are impaired to the point they can be controlled. Unlike mace and tear gas, pepper spray is usually more effective on people who are drunk, on drugs, or mentally disturbed (29:892; 31:3; 34:48-49).

Electromagnetic

- Taser. A Taser is a low-powered hand-held device which can operate up to 15 feet away from a suspect. It runs on a 7.2 volt battery and ". . . fires two dart-like electrodes into the suspect. The darts are connected to the Taser gun by tiny wires" (44:21). When the Taser's trigger is pulled, and the darts connect to someone's skin or clothing, a pulsating current of 50,000 volts is released, causing spasms and eventual immobilization.
- Stun Gun. A stun gun is a two-pronged, handheld device that delivers a controlled volt of electricity and temporarily incapacitates a person. Stun gun voltage can range anywhere from 90,000-120,000 volts of electricity, but one has to be within arms length of a person in order for it to be used effectively (34:53; 43:28; 44:22).
- Stun Belts. A recent innovation is the stun belt, an elastic belt used to control prisoners (in court or in transit). The belt is placed around the person's waist with the battery pack situated next to the kidney. If the prisoner becomes violent, the stun belt is activated by a handheld transmitter and "zaps the wearer with 50,000 volts of electricity for eight seconds" (16:11). The jolt of electricity is enough to knock a person down and temporarily incapacitate them.

Electromechanical

- Smart Guns. Smart guns have been developed at the request of civilian police departments. In a nine-year period (1981-1990), 15 % of all policemen killed in the line of duty had been disarmed and killed with their own guns (15:6; 29:891). One smart gun technology employs a sensor embedded in the firearm which will only "recognize" the handgrip of the gun's owner/user. This safety measure ensures the weapon can only be fired by its authorized user (15:6; 18:41; 31:4; 38:31).

Mechanical

- Rear Air Bag Restraint. Rear air bag restraints were developed at the request of civilian law enforcement organizations to subdue agitated assailants being transported in the rear seat of law enforcement vehicles. The rear air bag is deployed by an officer in the front seat. Because it inflates slowly, the air bag will not crush the aggressive passenger; it immobilizes them in place. The air bag is also air-permeable so there is no danger of the passenger suffocating. This low tech invention will prevent aggressive suspects from kicking out vehicle windows and doors, and trying to escape police custody (15:6; 29:893; 31:2;).
- Baton. Better known as a policeman's nightstick, the baton is one of the oldest NLWs in existence. Wooden batons still exist, but many companies now offer batons made of lightweight, stronger material such as polycarbonate. Used properly, a baton can immobilize or disarm aggressive persons with minimum physical damage to either the officer or the suspect. Used improperly, the baton can result in great injury and even death (34:47; 43:30).
- Snare Nets. Snare nets, once used to capture animals, are being developed to capture fleeing felons. Launched from a canister attached to a rifle barrel, the snare net opens up over a fleeing target, entangles and temporarily immobilizes them. The nets can be fired from up to 100 feet away, and can be coated with a sticky substance, or electrically charged, to make it even more difficult for a person to run (15:7; 18:41; 31:3).
- Rubber Bullets. For years, rubber bullets have been used for crowd and riot control, but they are only nonlethal when fired from the appropriate distance. If fired at close range, a rubber bullet will kill; if fired from too great a range, the bullet is ineffective (44:21).

Opticals

- Lasers. As a NLW, low energy lasers can be used to blind people temporarily, or an infrared laser can heat the skin enough to cause pain but not burn the skin. An argon laser beam has been developed, which when aimed at windows and windshields, turns the glass opaque green. One author claims this weapon could "prevent a high-rise sniper from seeing a target, a driver from speeding away, or a pilot on a suicide mission from aiming a plane at the White House" (14:14).
- Pulsed Lights. As a NLW, pulsing bright strobe lights temporarily disorient suspects so they can be easily captured (15:7; 18:41; 31:3).
- Optical Hand Grenades. Optical hand grenades are akin to giant flash bulbs. This device creates such an intense glow it can temporarily blind people up to 30 seconds (14:14).

Antimaterial Technology

Antimaterial NLWs also have great potential for use in military and civilian police situations. Many antipersonnel NLWs also double as antimaterial NLWs:

Chemicals

- Supercaustics. Supercaustic chemicals can be more caustic than hydrofluoric acid, and can "eat" vehicle tires, hoses, shoe soles, rooftops, and asphalt road surfaces (12:28; 40:69).
- Sticky Foam. Sticky foams are designed to penetrate mechanical parts on vehicles and weapons, immobilizing and rendering them useless. Another type of foam developed hardens once it is dispensed, immobilizing the sprayed object (14:14; 15:6; 29:890).
- Lubricants. Chemical lubricants, also known as "slick'ems," are sprayed over pavement, stairs, and other surfaces, to make them so slippery vehicles cannot get any traction or progress anywhere (12:28; 13:69; 40:69).
- Metal Embrittlements. Metal embrittlements are liquid chemicals that change and weaken the molecular structure of metal. The chemicals can be fast or slow acting, and can be sprayed or brushed on items such as ships, aircraft, bridges, and vehicles (1:43; 12:28).
- Combustion Inhibitors. Combustion inhibitors are chemical additives that can be added to a fuel tank to gum it up. These chemical additives gel when mixed into fuel, which prevents the fuel from flowing and stops the engine (1:43; 12:28; 40:69).

Electromechanical

- Auto Arrestors. Targeted vehicles receive short pulses of electric current which burn out the electronic parts of a vehicle's ignition. Since only the ignition system is damaged, the driver can maintain control of the vehicle as it coasts to a stop (31:1-2).

Mechanical

- Vehicle Shrouds. Metallic vehicle shrouds are fired from cannons to ensnare and immobilize vehicles (6:24).
- Vehicle Barrier Strips. Police have long needed some kind of device to minimize the dangers of high-speed chases. Barrier strips, equipped with retractable hollow steel spikes, can be placed across roads in advance of the vehicle under pursuit. The hollow spikes are mechanically extended as the targeted vehicle approaches. Once the vehicle runs over the strip, the hollow spikes become embedded in the

tire, puncturing it and causing a flat vice a blow out. The vehicle strips are lightweight, reusable, and easily deployed (14:14; 31:2; 34:54).

Opticals

- Lasers. The same low energy weapons capable of blinding people can also damage and disable the infrared and optical systems used for night vision, tracking, target acquisition, and surveillance (6:25; 9:1; 13:68).

Chapter 4

Traditional and Nontraditional Military Police Missions

Military police do not have to start from scratch in researching, developing, procuring and using NLWs. For years military police have had NLWs in their arsenals, and have used them in "traditional" situations. Most military police are equipped with batons to control or disarm aggressors. Additionally, military police have used mace and tear gas to control crowds or individuals. The military, like its civilian counterparts, has made the transition to pepper spray in the last four years. And finally, the military working dog, a nonlethal piece of equipment, falls under the minimum force category on the use of force spectrum. Military working dogs are trained to protect their handlers, attack, and cease attack on command of their handler. These NLWs have been used successfully on a daily basis in police work.

But like the armed forces in general, military police have been tasked with new missions which offer greater challenges. Many of these new missions require innovative thinking and customized responses. The flexible aspect of NLWs make them ideal for traditional and nontraditional missions that fall throughout the lower end of the spectrum of conflict (Figure 1) (19:37). NLWs can be valuable tools in conventional warfare as well.

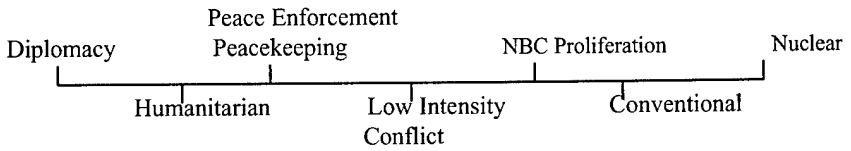

Figure 1. NLW Spectrum of Conflict

The following synopsis gives one an idea of what military police are tasked to do, and which NLWs can assist them in accomplishing these missions:

Base Defense

By formal agreement, both Air Force security police and Army military police have a base defense mission. Air Force security police provide security from inside an air base to its perimeter, and Army military police are responsible for defense outside the base's perimeter. NLWs such as lasers, can be fitted to the current M16 rifle and M203 grenade launcher, which are both used in base defense missions.

Law Enforcement

Table 1. Scenarios for the Application of NLWs

Scenario	**Nonlethal Weapons**
Routine traffic stops	Batons, pepper spray, Tasers
Domestic violence calls	Batons, pepper spray, Tasers, calmative agent, stun guns
Crowd control (large-scale fights)	Military working dogs, batons, Tasers, stun guns, calmative agents, pepper spray, rubber bullets, noise generators
High-speed pursuits	Auto arrestors, vehicle barrier strips, lasers
Fleeing felons (on foot)	Lubricants, sticky foam, beam weapons, snare nets, military working dogs,
Violent offenders	Batons, stun guns, Tasers, rear airbag restraint, sticky foam, calmative agents, beam weapons, stun belts

Enemy Prisoners of War (EPWs)

Military police have primary responsibility to prepare, receive, process, and transfer EPWs in all conflicts. Humane treatment of EPWs is always a concern. NLWs such as sticky foam, stun guns, Tasers, and calmative agents offer alternatives to lethal weapons when dealing with attempted escapes, riots, or the individual aggressor.

Refugee/Migrant Camp Security

Related to EPW security is refugee/migrant camp security. These humanitarian missions are politically sensitive and highly visible. Military police have been responsible for internal security of these camps, which covers the gamut—quelling demonstrations, breaking up fights among the migrants, and handling crimes ranging from rape, black marketing, theft, and assaults. NLWs such as Tasers, calmative agents, pepper spray, sticky and aqueous foams, and stun guns are appropriate for these missions.

Riot Control

Military police must be prepared for confrontation management, or riot control. Typical weapons used to break up riots are batons, chemical agents, and water cannons. NLWs such as calmative agents, aqueous and sticky foams, noise generators, polymer agents, Tasers, pulsed lights and optical hand grenades are alternatives worth exploring.

Corrections Facilities

Each military service has local and regional confinement facilities, and of course there is the DOD long-term facility for inmates serving more than five years (the United States Disciplinary Barracks at Ft. Leavenworth, KS). Inmate control lends itself to the use of

NLWs. Currently, weapons (batons, firearms) are not even allowed into the facilities except in emergencies (2:14). However, military working dogs, chemical irritants, and high-pressure water may be used to control rioting inmates (2:14). New NLWs such as sticky and aqueous foams, calmative agents, polymer agents, and noise generators would give military police additional flexibility to quell riots and disturbances.

Hostage/Barricaded Suspect

Hostage takers and barricaded suspects challenge police in many ways. The first goal is to negotiate the situation to a peaceful end, and talk the suspect into freeing their hostages and giving themselves up. When hostage takers and barricaded suspects refuse to negotiate, police want to use only the force necessary to safely free hostages and disarm the hostage taker or barricaded suspect. Nonlethal options such as calmative agents, lasers, noise generators, beam weapons, pulsed lights and optical hand grenades can minimize the dangers to hostages and offer alternatives not currently available with lethal weapons.

Nuclear Security

The most important mission military police perform is security of nuclear assets. The use of deadly force is authorized and appropriate when it comes to maintaining custody of nuclear weapons. But NLWs can also be used for this mission. The Department of Energy (DOE) originally developed sticky foam to prevent anyone from trying to steal its nuclear weapons (28:42). The military can use sticky foam in the same capacity. NLWs could be used against nuclear protesters trying to breach nuclear storage or aircraft alert areas. Nuclear protesters have been known to deface and damage nuclear capable aircraft

in order to make a statement. But a nuclear protester determined to make a point and a terrorist attempting to steal a weapon require very different treatment. Military police will be open to effusive criticism if they use lethal force on an unarmed protester who has neither the will, knowledge, nor capability to steal a nuclear weapon. In this case, stun guns, foams, beam weapons, pulsed lights, and optical hand grenades are appropriate. A nonlethal denial technology, appropriate for both protesters and terrorists alike, is already under development. The denial system is based on "incremental penalties"— the closer the unauthorized person gets to the nuclear weapon, the more severe the pain and consequences (46:1-2).

Chapter 5

Variables to Consider

The potential for using NLWs in military police missions is expanding. But many variables must be considered before NLWs can be fully integrated into the current arsenal:

Cost

The cost of NLWs is a primary consideration and impacts several other variables. Some NLWs already in use (batons, Tasers, pepper spray, and stun guns) are relatively inexpensive to procure. Crime really does pay, especially for the home and personal security companies using nonlethal technology. There is no shortage of companies pricing and producing Tasers and pepper sprays for mass consumption. Millions have purchased defensive sprays ranging from $10-$15, and stun guns ranging from $50-$75 (39:109; 43:28). In 1994 the NLWs market was estimated at $300 million dollars (39:109). The military, however, is interested in more sophisticated NLWs technology, which is very expensive to research, develop, and package in dispensers easily used by military police. For example, a program manager for NLWs stated that: "A rifle and power pack designed to emit a blinding beam of light currently costs the equivalent of a couple of police cruisers" (14:15). There is no doubt the cost of NLWs will determine their future status in the military police arsenal. However, dual-use technology that satisfies both civilian and

military law enforcement needs will increase requirements and drive down the cost of NLWs.

Training

Any new weapon in the military police arsenal must be integrated into an already saturated training schedule. If no offsets are possible, additional training hours translate into additional training dollars, which are in short supply. New NLWs will incur initial and sustainment training costs for the actual weapons, as well as use of force, and rules of engagement training. Training military police augmentors with these weapons must also be considered as well as collective skills training for all (collective skills combines individual skills into a team effort). The ideal nonlethal weapon will require minimum sustainment or recurring training. One does not want a weapon that is so complicated it requires several more hours per year to maintain proficiency. The simpler the weapon, the better. Bottomline, military police cannot afford to cut corners in this area because training deficiencies lead to deadly results.

Environmental Concerns

One cannot think about using NLWs without addressing potential environmental problems. The pressing questions are (1) how do we clean up after using some of these weapons, and (2) what impact will these weapons have on the environment? The answers to these questions are not readily available for some of the newer nonlethal technologies. If supercaustics are strong enough to "eat away" tires and asphalt surfaces, what is the aftereffect if they leach into soil? And what about polymer agents (superadhesives) that may be dispersed in a mist by aircraft over a wide area? Lubricants (anti-traction NLWs)

may have to be used in such quantities over large areas that the expense to clean it up makes it cost prohibitive to use (12:28). Even the much-touted sticky foam has its drawbacks. It takes a lot of baby oil and time to remove sticky foam from a person or object (18:40).

Practicality of NLWs

NLWs must be practical to use. The only way to achieve practicality is to have the users in on the design and development stage. One example where the user was not consulted until after the fact was in the design and development of the rear airbag restraint. The airbags were easy to deploy, cheap to repack, and safe for the hostile passenger (28:44). When police saw a demonstration they asked a few questions the designers had forgotten, such as "How do we clean this up if the guy does things we don't want to talk about? And is it bite- and tamper proof?" (28:44).

Cleaning up after using these weapons must be practical too. As mentioned before, sticky foam has lost some of its appeal because it takes so much time and baby oil to clean it from the skin (18:40). Additionally, clean up necessitates ". . . a degree of intimacy with suspects many police officers may find less than appealing" (18:40). Sticky foamed clothing cannot be washed—it must be thrown away, and how to clean it off pavement is still in the works (29:890).

Procurement Strategy

In this day of diminishing forces and budgets, the procurement strategy of NLWs must be joint. Today, more than ever, Army and Air Force military police work together in the same operations. Operations are simplified if the services share the same weapons,

training, tactics, and rules of engagement. Joint procurement procedures for NLWs already exist, and ultimately will reduce cost and enhance interoperability. Just as important, the military police community needs to share their research, development, and procurement strategies with the civilian law enforcement community. A "marriage of convenience" between the DOD and DOJ is one solution to reduce costs, duplication of effort, and maximize the potential of NLWs (29:890).

Safety Issues

Some benefits of NLWs are its abilities to reduce injuries to police and suspects, and its potential to reduce the rising number of wrongful deaths and excessive use of force law suits. Remember, there is no perfect nonlethal weapon. Nevertheless, safety is one of the most important issues to be considered when procuring and using NLWs. First, NLWs must not pose a danger to the user. Officers using sticky foam can render themselves ineffective if the foam accidentally spreads to them (15:6). Military police must be careful in dispensing chemical agents (pepper spray or calmative agents), or risk self-contamination. Pulsed lights, lasers, and optical hand grenades require safety goggles to insure the users do not become disoriented themselves. This also applies to acoustic weapons—users need hearing protection or they will also be incapacitated. Stun guns can potentially put the user at risk because one has to be within arms reach of the person to be stunned. Supercaustics, designed to "eat" metal, could burn the skin of those applying or touching it (40:68).

The safety of innocent bystanders and suspects is always a major concern when using lethal or NLWs. Chemical and calmative agents used for crowd control could easily

overcome bystanders watching the melee. Sticky foam, sprayed in the face of a suspect or bystander, can suffocate them. One drug under study for use as a calmative agent slows respiration and depresses the central nervous system (34:54). Slowing the respiration of a person who may be high on drugs could inadvertently result in their death (34:54). Because they flash at or near human brain wave frequency, pulsed strobe lights could induce seizures in persons with epilepsy (37:5). In rare cases, Taser barbs may have to be surgically removed from the target (29:892). Even pepper spray can cause death when used in conjunction with custodial mistakes. For example, from 1990-early 1994, 30 people sprayed with pepper spray later died in police custody (29:893). The International Association of Chiefs of Police (IACP) initiated a study at the behest of the National Institute of Justice (NIJ), a unit of the DOJ, to determine the causes of death. Results of the study exonerated the use of pepper spray and highlighted the problem to be "positional asphyxia" (29:893). Eighty percent of the 30 deaths were the result of a police practice of "placing hog-tied, and often overweight, suspects face down in the back of patrol cars" (29:893). The remaining 20% of the deaths were related to the suspects drug use or a pre-existing disease (29:893). The NIJ and IACP passed on the findings of the study to other police departments so these practices will be avoided in the future.

One success story belongs to the designers of the rear airbag restraint, who took the suspects safety into consideration. The suspect will not be crushed or suffocated because the airbag inflates slowly and is made of material that "breathes" (29:893).

Availability

Many NLWs are in use today. Traditional NLWs such as tear gas, mace, pepper spray, Tasers, stun guns, batons, rubber bullets, and military working dogs are used by military and civilian police alike. The military has added sticky foam to its NLWs arsenal, and civilian police and corrections personnel are now using stun belts. Prototypes for the rear airbag restraint, vehicle barrier strips, snare nets, smart guns, laser rifles, and optical hand grenades have been developed; some are currently even in the field testing stage (18:41; 31:2; 40:69). Calmative and polymer agents are in research and under development, respectively (12:26-28; 43:30). Combustion inhibitors, supercaustics and superlubricants have been developed, but the best way to dispense and deliver these agents is yet to be determined (40:69). Acoustic beam weapons are still in the conceptual stage and pulsing strobe light weapons are under development (15:6; 40:69). Many laboratories and industries have been involved in developing NLWs. Los Alamos National Labs is one of the most active, researching and developing lasers, acoustics, and opticals, as well as acting as a clearing house to "... assess the national security implications of emerging technologies" (1:40; 14:14; 21:14). Another major contributor to NLWs is Sandia National Labs, well known for developing sticky and aqueous foams, lasers, and the smart gun (6:25). Armstrong and Phillips Labs are working on microwave and laser technologies; Idaho National Engineering Lab (a DOE lab) has developed the rear airbag restraint and vehicle barrier strips; and Lawrence Livermore National Labs is working on the pulsing strobe lights (28:44; 31:2; 40:69). Other companies, such as Westinghouse and Alliant Tech Systems, are turning their attention to NLWs as well.

Measuring the Success of NLWs

Measuring the effectiveness of NLWs will be like trying to measure the deterrent value of any weapon in our inventory. The history of today's combat success has been determined through body counts, and numbers of aircraft, tanks, and other types of military targets damaged or destroyed. Desert Storm proved how difficult it is to assess battle damage to a hardened facility, and NLWs may add to this difficulty when used in combat scenarios. Dr. John Alexander, program manager for nonlethal defense, Los Alamos National Laboratory, stated ". . . assessment techniques for many nonlethal technologies will be different from classical damage assessments involving physical destruction of targets" (3:6). We will run into the same problems trying to measure the success of NLWs in non-combat scenarios as well. Measures of effectiveness may be what was prevented, be it a crime, a felon's escape, a migrant camp or prison riot, or an injury to a suspect, bystander, or military policeman. Therefore, an absence of incidents or problems may be an indicator of success, or perhaps specific assessment techniques should developed for specific NLWs (3:6).

Support of NLWs

NLWs will become part of the military arsenal only if military and political leadership fully understand the capabilities and limitations of these weapons. The capabilities must not be exaggerated, nor their limitations overlooked. We need to educate the military and political leadership in order to avoid some pitfalls. The US is casualty conscious, and fans of NLWs may see them as a way to avoid taking and inflicting casualties. However, it must be understood that NLWs are never substitutes for lethal weapons, and there will be

many situations in which NLWs are not appropriate to use. Many in and out of the military are bemused and skeptical of NLWs. They may dismiss the advantages of using them and focus on the cost of these sophisticated technologies, vice the results. These individuals must be convinced that sometimes lethal force exacerbates a situation and is counterproductive. NLWs offer military and political decision-makers more flexibility and options than traditional means of resolving conflicts and incidents. Military police missions (and military missions in general) are changing, and the means to accomplish the missions sometimes change as well. For example, NLWs can be valuable options for military forces involved in Military Operations Other Than War (MOOTW). MOOTW includes humanitarian missions (such as feeding, protecting, and relocating refugees; disaster relief; and assistance in civil disorders), counterdrug operations, noncombatant evacuation, peacekeeping, and hostage rescue operations. In light of these new missions, leadership, the media, the public, and especially the user, must all be educated that NLWs can save lives, reduce injuries, and limit damage.

Chapter 6

Policy, Legal, and Ethical Issues

Before the potential of NLWs can be realized several policy, legal and ethical questions must be resolved.

Policy Issues

To date, DOD lacks a unified official NLWs policy. An initial draft policy was forwarded to all services for review and coordination in June 1995; a revised second draft policy was recirculated in December 1995. Included in the policy is a definition, and a list of responsibilities for each service involved in acquiring and using NLWs. The policy commits service departments to developing doctrine, security procedures, tactics, training, logistics, and conducting a legal review for acquired and fielded NLWs (10:3-4). Because DOD policy is not finalized, a four page memo, *Interim Public Affairs Guidance for Non-Lethal Weapons,* was issued 26 January 1996 (37:5). This memo allows Pentagon officials to sing off the same sheet of music until the official policy is signed. The memo explains to the public DOD's ". . . overall position on NLWs, their possible role in future US military operations, and our priorities for the kinds of mission for which these missions may be acquired" (37:5). It is in DOD's best interest to get the official policy coordinated

and signed as US troops, including military police, will continue to be dispatched on missions other than war.

Legal Issues

NLWs cannot be procured and used without extensive legal review. Some NLWs and technologies may violate state laws and international chemical and biological treaties (1:44). For example, it is illegal to use stun guns in six states and pepper spray in one state (39:111). Pepper spray cannot be used by military police stationed in certain countries, such as England. Calmative agents, supercaustics, and polymer agents may violate the Chemical Weapons Convention (CWC) (1:44). The Geneva Protocol of 1925 prohibits "the use in war of asphyxiating, poisonous or other gases, and of all analogous liquid materials or devices" (1:44). Based on this standard, the legality of supercaustics, sticky foams, liquid embrittlements, lubricants, and combustion inhibitors may be questionable under the Geneva Protocol of 1925 (1:44).

The CWC does allow chemical weapons to be developed for law enforcement purposes such as domestic riot control. The term "law enforcement" has never been explicitly defined, and critics of NLWs believe many technologies are being developed and justified under this ambiguous term (1:44). Barbara Hatch Rosenberg, director of the Chemical and Biological Program of the Federation of American Scientists, warns the "development of chemical weapons in the guise of domestic riot control agents must not be allowed as a means of circumventing the CWC" (1:45).

There are many ambiguous terms in the CWC that critics and fans can use to support legal or illegal NLWs arguments. Whether or not some of these weapons comply with

existing international treaties must be settled before NLWs are mass procured and used by the military. Ironically, civilian law enforcement agencies may have greater flexibility in using NLWs than the military because of these international treaties (1:45). The treaties may need to be amended in light of new military missions and technologies.

Ethical Issues

NLWs raise ethical questions, such as whether or not it is humane to use such weapons. Some members of the legal community feel NLWs such as stun belts, stun guns, and Tasers could encourage overuse and abuse (16:11). Many NLWs that could be used by the military may also violate the Certain Conventional Weapons Convention (also known as the Inhumane Weapons Convention). Lasers, sound generators, pulsed lights, and optical hand grenades might violate this treaty "... on the basis of superfluous suffering and/or indiscriminate effects" (1:45). In other words, the NLWs causing nausea, diarrhea, dizziness, and blindness could "constitute severe bodily punishment" (1:45). Recognizing the ethical dilemma of one particular weapon, Secretary of Defense William J. Perry issued a policy on blinding lasers in September 1995. The policy states DOD "... prohibits the use of lasers specifically designed to cause permanent blindness of unenhanced vision, and supports negotiations prohibiting the use of such weapons" (9:1). However, the policy still permits laser use for other military purposes such as targeting and range finding (17:1). Another ethical dilemma is what do we do when other countries use weapons that violate these international treaties? Do we expect every country to play by our rules? What are the consequences for that country if they do not? All of these

questions must be asked and answered if NLWs are going to be fully integrated into military police arsenals.

Chapter 7

Nonlethal Weapons Use In Past Missions

It is paramount to resolve legal and ethical issues because NLWs have already been used in various military operations. Military police use batons, pepper spray, and military working dogs every day. But last year, the military had its first major test of NLWs. In March 1995, US Marines were tasked to help UN troops withdraw from Mogadishu, Somalia, thus ending Operation Restore Hope. When Dr. Perry made the decision to use NLWs to assist in this withdrawal, 200 of the 2500 Marines were armed with sticky and aqueous foam guns, pepper spray, rubber bullets, wooden shotgun pellets, bean bags (fired from shotguns), and stinger grenades with rubber pellets (the shrapnel from the grenade stings instead of pierces) (8:28; 41:11). The decision to use NLWs for withdrawal was no doubt influenced by several unfortunate experiences in dealing with Somali citizens in the initial months of Operation Restore Hope.

By January 1993, it was obvious forces in Somalia had to make difficult, split-second decisions on when to use deadly force. For example, Somalis mobbed convoys being protected by Marines. Some Somalis were looking for food handouts, while others were trying to steal gear and weapons from the Marine forces (24:34). Convoy drivers and passengers tried to keep the mobs away by putting barbed wire along the sides of their vehicles or by using wooden or tent stakes to keep people at a distance (24:34). None of

these measures worked. Riot control agents were available and considered; their use, however, was never authorized by the UNITAF commander (24:34). The answer to the problem was pepper spray, which was finally approved for use in April 1993 (24:34). If approved for earlier use, NLWs could have saved civilian lives, reduced military injuries, and eased tensions between military forces and Somali citizens. Two cases make this point. Charges were brought against two US noncommissioned officers (NCOs), who each shot and killed a Somali citizen in what they claimed was self-defense. One NCO shot a Somali who grabbed the sunglasses off his face. The other NCO shot a Somali who ran up to his vehicle carrying a small box (24:33). In the first case, the NCO was court-martialed and convicted for excessive use of force. In the second situation, the case was dismissed as legitimate self-defense because the soldiers had been warned the day before of hand grenade incidents (24:33). Had NLWs been available, the outcome of both of these incidents could have been much different.

NLWs were also used in Operation Safe Passage, the airlift movement of 7000 Cuban migrants from Panama to camps at Guantanamo Bay, Cuba. Starting February 1995, the Cuban migrants were airlifted in military aircraft, escorted by military police. The military police escorts were armed with batons, pepper spray, stun guns, shotguns with bird shot and bean bag rounds, and lethal weapons as well (22). The goal was to use the minimum force necessary to maintain order, and only escalate force in proportion to the behavior of the passengers.

In a recent operation, military police could have used NLWs to reduce injuries and limit damage during riots. Operation Sea Signal was a 1994 multiservice effort to maintain security and welfare of 34,000 Cuban and 14,000 Haitian refugees "contained" at

Guantanamo Bay, Cuba (35:115). Military police provided internal and external security for these migrant camps. Living conditions in the camps deteriorated as the migrant population grew and stressed the sanitation and medical services. Migrant discontent and restlessness turned into demonstrations and riots when changes to the US immigration policy were announced (35:115). Military police providing internal camp security were only equipped with batons and radio, totally inadequate for handling riots. The riots resulted in many injuries, to military and camp internees alike, as well as the destruction of portions of the camp. Military police could have used NLWs such as pepper spray, sticky foam, and Tasers to bring the camps under control.

On the other hand, military forces must guard against the tendency to rely on NLWs when lethal weapons are clearly appropriate. During Operation Restore Hope, a US soldier was attacked by a Somali man wielding a knife. The attacker was disarmed by other US soldiers with pepper spray rather than a lethal weapon. Fortunately, no one was injured in the incident; however, the attacker was able to make four attempts at stabbing the soldier before he was overcome with pepper spray (23:13). Military forces using any type of weapon must still make the hard decision of when to use deadly force, and not hesitate when necessary.

Chapter 8

Nonlethal Weapons: Precautions and Concerns

In the last 15 years, the American public has reached new heights of casualty consciousness. The American public wants minimum US and enemy casualties. The military has contributed to the intolerance of civilian and military fatalities by convincing the public expensive weapons like precision guided missiles and smart bombs will result in fewer deaths. Today, the constant media attention in military operations puts a name and face to each casualty. Never was this more evident than in the Gulf War, which set the precedent of winning wars without the death and devastation known in previous conflicts. NLWs may be politically attractive, in fact too attractive, to those demanding clean, bloodless wars. In other words, the military could be politically coerced into using NLWs in situations where lethal weapons are more appropriate. Anita K. Jones, a director of defense, research and engineering at the Pentagon stated, "Military rules of engagement for peacekeeping and humanitarian relief missions place severe limitations on casualties and collateral damage in military operations, often resulting in the same set of options afforded to the policeman" (29:891). To avoid this, the American public, political, and military leadership must be convinced NLWs only complement, not replace, lethal weapons.

At the opposite end of the spectrum is military leadership who may hesitate to use "strange" new NLWs. As mentioned, there are many skeptics who are comfortable maintaining the status quo. This would be a valid argument if military operations remained the same over the last 15 years. So many new military missions, such as peace operations and nation assistance, are humanitarian in nature, and dictate new ways of thinking, arming, and equipping our troops. Military leadership must be convinced of the effectiveness of NLWs, and one way to do that is by continuing their use as in Operations Restore Hope and Safe Passage. Military leaders may hesitate to procure and use NLWs if they perceive NLWs are in competition with lethal weapons. Competition refers to the "cradle to grave" cost to research, develop, procure, deploy, and maintain these weapons. Because of these potentially high costs, few military leaders may be willing to offset new lethal weapons, or modernization of current weapons, for nonlethal capabilities.

Military leadership may fail to endorse use of NLWs if it could be interpreted as a sign of weakness by our enemies. Leaders must instead be convinced that nonlethal force in some situations can be a deterrent as well as a humane alternative to lethal force (23:7). The use of pepper spray in Operation Restore Hope and Tasers in Operation Safe Passage demonstrated that point.

For every weapon developed, there is usually a countermeasure to defeat it. The US must be prepared for other nations to develop countermeasures and perhaps their own NLWs to use against our military and citizens. In order to delay this from happening, many of the NLWs projects have been shrouded in secrecy. Critics against keeping these NLWs technologies under wraps claim "secrecy has been taken too far" (21:15). One well known skeptic of NLWs is Steven Aftergood, a member of the Federation of American

Scientists. He stated, "Beyond a certain point, secrecy becomes counterproductive or even self-defeating" (21:15). The search for countermeasures and counter counter-measures could escalate the cost of NLWs and make them less palatable to procure and use.

Will military police, armed with both lethal and NLWs, be under greater scrutiny if lethal force is the option chosen to resolve a situation? Many in the chain of command may second-guess the military policeman's final decision when both lethal and nonlethal options are available. This will send a dangerous signal to military police or other military members armed with NLWs. To avoid scrutiny and criticism, service members may over-rely on their NLWs and hesitate to use lethal force in situations where it is very appropriate. It is imperative those who use NLWs, and those in their chain of command, are well trained and exercised, know the capabilities of NLWs, the rules of engagement for the mission, and the perceived threat in a situation where lethal weapons were used. Everyone must be educated that the force used to resolve a situation must be consistently applied and proportional to the threat (24:32).

Will military police acquire new missions if more NLWs are integrated into their arsenal? Will political leadership be tempted to commit US forces to more humanitarian missions in areas where our vital interests are ill defined? And will the successful use of NLWs in various operations prompt additional calls for US military forces? These are legitimate concerns that need consideration. Basic military police roles will probably not change, but the operations tempo may increase. Our dominance of the NLW market will eventually generate even more requests for the US military to be the "globocop". And

military police NLWs will be so effective civilian law enforcement will request to borrow and use them in certain situations.

Chapter 9

Recommendations

There are several gaps that must be filled if military police are going to be able to procure and integrate NLWs into their arsenals. First DOD policy must be finalized and signed into effect. Based on their unique missions, each service must develop their own NLWs doctrine and concepts of employment. The opportunities exist for military police from each service to develop joint doctrine and mutually supporting concepts of how they will deploy and operate these weapons. Each service military police organization must tackle the training problem too. It is time for military police to assess critically their need for each lethal weapons system in their current inventory. NLWs cannot be added unless additional manpower for training is authorized or a particular lethal weapon is phased out or retired from the inventory. This may be heresy to those who have worked long and hard to accumulate some impressive firepower. But new nontraditional military police missions dictate new thinking. Inventory decisions could be made by developing a joint modeling and simulation program for NLWs. Modeling and simulation can give military police an idea of the benefits or tradeoffs of integrating specific NLWs and deleting certain lethal weapons from current arsenals.

Parallel to formulating joint doctrine is establishing joint requirements. The Army Military Police School anticipated this and drafted a mission need statement (MNS) for

nonlethal force capabilities. A MNS is DOD's method of identifying and documenting mission deficiencies requiring a material solution. The Army has forwarded the MNS to the Air Force for "harmonization" (to see if the Air Force wants to share a common solution to reduce program costs and duplication of effort). Jointness, from the initial requirements document, results in standardized and interoperable NLWs. The Marines and Navy need the opportunity to sign up to this MNS as well. A joint MNS lays the groundwork for a joint procurement strategy, ensuring all services share the cost and get the quantity and type of weapons needed for individual and joint missions. Right now each service is studying and developing different NLWs technologies. The Army is developing stun hand grenades; the Marines are working on sticky foam, sticky nets, and an acoustic weapon; and the Air Force is developing a delay and denial program, using microwave energy to deter and incapacitate those attempting to steal or damage a nuclear weapon. The good news is military police from each service are aware of the technologies and programs each are pursuing. This is not by accident, but by design. Several DOD working groups are in existence to arm and equip future military police forces. First, there is the Joint Requirements Working Group (JRWG), a forum enabling each service's security personnel to consolidate their physical security equipment needs, eliminate redundant programs, and coordinate procurement efforts. One level above the JRWG is the Physical Security Equipment Action Group (PSEAG). The PSEAG is responsible for the research, development, and acquisition of physical security equipment by military departments and the Defense Nuclear Agency. The PSEAG also provides limited research and development funding for service programs, and ensures the services transition that research and development into viable joint programs. And finally there is the Joint

Services Small Arms Program (JSSAP). The JSSAP is tasked with modernizing and harmonizing small arms weapons requirements for all services. The JSSAP's focus has been on technological improvements, which laid the groundwork for the Joint Service Small Arms Master Plan (JSSAMP). The JSSAMP also includes nonlethal technological improvements for small arms, which only makes sense because JSSAP has the lead for DOD in NLWs development and procurement. The JSSAP chair represents DOD on the DOJ's NLWs Panel. A few months after the Waco disaster, Attorney General Janet Reno asked the SECDEF for help in developing military nonlethal technologies for law enforcement application by the DOJ (6:26; 42:8). Attorney General Reno stated the DOJ wanted information on dual-use NLWs already available and those still under development. In particular, Attorney General Reno was interested in:

- "A weapon with selectable lethal or non-lethal capabilities (e.g., an 'over and under weapon').
- A 'smart weapon ensemble,' which would provide an array of technologies which can readily be brought to bear in less-than-lethal scenarios.
- Acoustic beam technologies" (42:8).

It is no surprise DOJ wants access to DOD's NLWs and technologies. The NIJ has a science and technology shop that sponsors research on crime and crime control. Unfortunately, it only has a five person staff and a meager five million dollar annual budget. The NIJ needs the military in order to "find projects that will be developed on somebody else's dollar" (27:43). The nation spends $75 billion dollars on law enforcement, but little goes to research and development (28:43). The NIJ also estimates only a 0.0007 % of the $67 billion dollars the government spends on research and development aids police work (28:43; 29:889). Now that the Pentagon's Advanced Research Projects Agency sponsors civilian *and* military high tech projects many companies that developed

only military hardware now direct their attention to law enforcement as well (29:893). There are great benefits to be reaped from this "marriage of convenience." Dual-use technology will increase overall requirements and make NLWs affordable to civilian law enforcement agencies.

The NIJ must also get the word out on NLWs and upcoming technologies to the 17,000 separate law enforcement agencies in this country. The best method of doing this is if the NIJ aligns itself with the IACP (28:43). Military police leaders of the various services already attend IACP conferences, so all major players (military and civilian alike) can easily advertise and get updates on the latest NLW developments. The organizations for a successful civilian-military police partnership already exist and intersect—the major players must take advantage of this and keep the lines of communication open.

Chapter 10

Conclusion

The US military needs to exploit the development and use of NLWs and adapt them to military police missions. It is a fact that antipersonnel and antimaterial NLWs already exist and are in use in military operations; but the potential for greater use exists with high-tech NLWs currently in development. NLWs are ideal for traditional and new military missions. NLWs are force enhancers, and give the military greater flexibility in situations where lethal force may not be appropriate. Before NLWs are fully integrated, several issues such as cost, training, environmental impact, and safety must be tackled. Policy, legal, and ethical questions must also be addressed. These issues cannot be ignored any longer, or assumed to be insurmountable. NLWs have proved their worth in several real world operations and would have made a positive difference in other situations. NLWs must not drive US policy of future involvement in world affairs. Political and military leaders must be educated that NLWs are never a substitute for lethal weapons—they only complement the current inventory.

DOD, as well as each service, must finalize their policies concerning NLWs use. Services must establish their individual and joint requirements, and take advantage of existing DOD, DOJ, and service working groups to come up with a cohesive plan and

procurement strategy. All of this paves the way for a smooth integration of NLWs into military police arsenals.

Glossary

CN	Chloroacetaphenone
CS	Orthochlorobenzalmalononitrile
CWC	Chemical Weapons Convention
DOD	Department of Defense
DOE	Department of Energy
DOJ	Department of Justice
EPWs	Enemy Prisoners of War
IACP	International Association of Chiefs of Police
JRWG	Joint Requirements Working Group
JSSAMP	Joint Services Small Arms Master Plan
JSSAP	Joint Services Small Arms Program
MNS	Mission Need Statement
MOOTW	Military Operations Other Than War
NIJ	National Institute of Justice
NLWs	Nonlethal Weapons
PSEAG	Physical Security and Equipment Action Group
SECDEF	Secretary of Defense

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