STRATEGY RESEARCH PROJECT

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NON-LETHAL WEAPONS AND STRATEGIC POLICY IMPLICATIONS FOR 21ST CENTURY PEACE OPERATIONS

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ABSTRACT

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Non-lethal weapons are a relatively new and evolving area, with Department of Defense policy published in July 1996. Furthermore, peace operations have assumed a predominate role for the United States military with no reduction to these type missions in sight. For most peace operations neither conventional economic sanctions, nor a Gulf War type response provide the appropriate answer. However, scientific and technical advances in non-lethal technologies provide a valuable tool for our forces and government that could play a vital role in future peace operations. Although viewed most often as impacting the tactical level of operations, the potential impacts non-lethal weapons will have on strategic policy are important. This paper examines the pertinent technologies and policies, what issues are applicable, and concludes with recommendations for future policy.

TABLE OF CONTENTS

ABSTRACT iii

NON-LETHAL WEAPONS AND STRATEGIC POLICY IMPLICATIONS FOR 21ST CENTURY PEACE OPERATIONS 1

POLICY 2

NON-LETHAL WEAPONS TECHNOLOGIES 4

PEACE OPERATIONS 7

THE ISSUES 12

RECOMMENDATIONS 15

CONCLUSION 16

ENDNOTES 19

BIBLIOGRAPHY 23

NON-LETHAL WEAPONS AND STRATEGIC POLICY IMPLICATIONS FOR 21ST CENTURY PEACE OPERATIONS

> Non-lethals have a crucial role on today's battlefield and will become increasingly more relevant on future battlefields. For many reasons non-lethal weapons offer military forces advantages as complements to lethal systems, and in some cases, as replacements for the other systems. The smart warrior is the one who understands how to use a diverse arsenal of capabilities, and isn't afraid to think beyond the traditional way of conducting military operations.
>
> General Anthony C. Zinni, USMC
> Former CINC, U.S. Central Command

Today the United States faces new challenges to its security and humanity. For many of these threats, neither conventional economic sanctions nor a Gulf War type response provide the appropriate answer. Recent deployments to Kosovo, Bosnia and Somalia show the need for new options and credible deterrence. Scientific and technical advances in non-lethal technologies, which cover an array of capabilities, address this need.[1]

Heading into the 21st century, the United States finds itself as the world's sole superpower. There is great debate among both politicians and military leaders as to the appropriate role for America to play on the world's stage. As our national security strategy of engagement finds us committed all over the world, whether we want to admit it or not, we have become the world's police force and with that comes increased peace operations. These type missions have dominated U.S. deployments since the Gulf War, with no decrease in sight. "The reality is that we have been involved in peace support operations, we are involved in peace support operations and we will be involved in peace support operations."[2] As such, "the military has been forced to find new and less warlike ways to carry out its missions as its humanitarian and peacekeeping duties have increased."[3]

"Weapons that were once considered exotic or the stuff of science fiction have become, or are now becoming, operational possibilities because of technological advances and the type of conflict situations that are now being encountered by police and military forces."[4] "What is absolutely clear is that, to meet the challenges of the future, we urgently need non-lethal weapons."[5] These weapons will provide a wider range of responses to very difficult situations.

Defining non-lethal weapons is no easy matter. "The term non-lethal has been subject to criticism as both a euphemism and oxymoron when applied to weapons."[6] There are various definitions, with no absolute agreement across the board. The Department of Defense (DoD) defines them as those that are "explicitly designed and primarily employed to incapacitate

personnel or material, while minimizing fatalities, permanent injury and undesired damage to the property and environment."[7] The National Institute for Justice (NIJ), which is the research and development arm of the Department of Justice (DOJ) distinguishes between the terms less-than-lethal and non-lethal, adopting the former to describe its programs. While the intent of non-lethal weapons is to minimize fatalities, permanent injury and damage to property, there is no guarantee that they are risk free. In fact, there could be lethal consequences when employed improperly or under certain instances.

Although viewed most often as impacting the tactical level of operations, the potential impacts non-lethal weapons will have on strategic policy are important. This paper will examine current non-lethal weapons policy and technologies, explore their applicability to 21st century peace operations, take a look at some of the issues or concerns affecting non-lethal weapons and conclude with some policy recommendations.

POLICY

Current non-lethal weapons policy is contained in DoD Directive 3000.3, Policy for Non-Lethal Weapons.[8] A relatively new area, the policy is dated 9 July 1996. According to this policy, non-lethal weapons should expand the options available to commanders, enhance the ability of U.S. forces to discourage, delay or prevent hostile actions, and limit escalation, especially in situations where lethal force may not be the best course of action. It is also DoD policy that non-lethal weapons should augment, not replace lethal force and never be deployed without lethal force backup. Furthermore, they should not limit a commander's authority, or obligate him to use non-lethal force before moving on to deadly force. Finally, they should have reversible effects within a reasonable period of time, be designed to help lower the post conflict cost of reconstruction and be acceptable to the public. The argument for non-lethal weapons received a boost when the influential Council for Foreign Relations concluded that "non-lethal weapons technologies have the potential for providing new strength for diplomacy, new credibility for deterrence, new flexibility for the military and new strategic options for policy makers."[9] There is no national policy above the DoD level.

The DoD directive also prescribes policy and responsibilities for non-lethal weapons development and acquisition, as well as integrating non-lethal weapons into operational mission planning. The Under Secretary of Defense for Acquisition and Technology has principal oversight responsibility for the DoD Non-Lethal Weapons Program, while the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict is charged with policy oversight for the development and employment of non-lethal weapons. The Commandant of

the Marine Corps serves as the Executive Agent (EA) for the DoD Non-Lethal Weapons Program, tasked with making program recommendations and stimulating and coordinating non-lethal weapons requirements. Moreover, the policy tasks commanders of unified combatant commands with ensuring the integration of non-lethal weapons into operational mission planning.

The Defense Planning Guidance for FY01-05 directs that to ensure the U.S. military has the ability to effectively apply non-lethal modes of weaponry, DoD components must continue to improve on and expand their present non-lethal weapons programs. It calls for integrating current efforts to study and understand the use of non-lethal weapons from the strategic to the tactical levels into all future military and interagency concepts and operations.[10]

Over the past few years the Marine Corps has made progress in getting the DoD Non-Lethal Program up and running. A highlight is the publishing of the Joint Concept for Non-Lethal Weapons.[11] Similarly, the Army's Training and Doctrine Command produced guidelines for the employment of these weapons where none had existed.[12]

In 1994 NIJ created a working partnership with DoD in an effort to develop and share technologies that could be used by law enforcement agencies and the military in peace operations. It is administered by the Joint Program Steering Committee, a coalition of DoD and DOJ personnel. This partnership is consistent with the dual use technology and production concept of procurement reform. Along these lines, DoD's acquisition reform effort has sought to bring about "a simplified commercial-style procurement system that gives priority to acquiring commercial products and processes, and wherever possible eliminates those unique contracting, technical, and accounting requirements that form a barrier to greater military/civilian integration."[13]

In September 2000, proponency for the Army's non-lethal weapons program was consolidated at the United States Army Military Police School (USAMPS). Prior to this move USAMPS had proponency for law enforcement applications, while the U.S. Army Infantry School had the lead for tactical non-lethal efforts. This consolidation ensures the Army has one single proponent for non-lethals while lending credence to the rationale that non-lethals are just another tool in the commander's tool bag, with the differences in the environments in which employed not justifying dividing proponency requirements.

NON-LETHAL WEAPONS TECHNOLOGIES

There are various non-lethal weapons technologies in existence or being developed. The Joint Concept for Non-Lethal Weapons details required qualities for counterpersonnel and countermaterial capabilities. Under the counterpersonnel category the Marine Corps designated developing non-lethal capabilities for crowd control, to incapacitate individual personnel, to deny personnel access to an area and to clear facilities and structures of personnel. There are two main focuses for the countermaterial capabilites. First is an area denial capability that denies land areas to vehicles. The other focus is acquiring non-lethal technologies capable of disabling or neutralizing specific types of equipment and facilities. [14]

Technologies that meet the counterpersonnel category include lasers, tasers, foams, water, acoustic weapons, malodorants, sticky nets, low kinetic rounds, and riot control agents such as pepper spray.

Lasers can be used for several purposes including target detection, target designation and deterrence. There are controversial non-eye safe lasers available on the market. While deployed on Operation United Shield in Somalia U.S. Marines, on more than one occasion, placed a thin red beam like those from the laser pointers currently popular in classrooms on possible gunmen. The recurring result was a peaceful surrender proving the deterrent value of low energy eye safe lasers.[15]

Electronic stun guns such as the Taser are fairly well known to the American public. Everyone recalls their use during the videotaped beating of Rodney King by Los Angeles Police officers in 1992. A high voltage, low amperage weapon, tasers cause loss of neuromuscular control, resulting in the affected person falling to the ground in submission. While offering an excellent alternative to lethal weapons and great applicability to police and military personnel involved in peace operations, additional standoff distance is desirable. An innovation in this area is the Air Taser which uses compressed air to shoot electrical darts at the aggressor, thus permitting some standoff distance for the user.[16]

Foam technology offers many new options and advantages. "Sticky foam captures the imagination and seems to embody what the essence of non-lethal represents: an enemy attempting to flee but held fast by a gooey substance with the tenacity of super glue."[17] "Expanding about 50:1 in volume, and with a substantial adhesive tensile strength, a little goes

a long way in inhibiting mobility."[18] "Two major complaints are its potential for accidental lethality due to suffocation and its difficulty in removal."[19]

"Aqueous foams expand at a ratio of about 1,000:1 thus offering attractive advantages of safety and volume. This great expansion means that most of the foam is actually filled with air and has a consistency much like soap suds."[20] Therefore, although a person engulfed in aqueous foam may feel uncomfortable and quickly become disoriented, he is in no danger of suffocating which, as previously mentioned can be a concern with sticky foams.

Water is perhaps the most basic non-lethal counterpersonnel weapon. In the current inventories of many police agencies, high pressure water cannons are effective in crowd control and have applicability to military peace operations. By themselves they are not very controversial, however, additives such as dyes can be placed in the water to facilitate follow on identification of individuals who were present at a disturbance.[21]

There are many military applications for acoustic technology which have enjoyed major advances over the last few years. In peace operations acoustic non-lethal weapons can be employed to drive people away from a designated area or to enforce a safety zone between troops and potential attackers. Developing directionality for these weapons is very important. One problem with early attempts was that everyone in the area could be adversely affected by the weapon. The current leader in development of acoustics weapons, Scientific Applications and Research Associates (SARA), has developed advanced steering techniques for these weapons. They've also adapted several systems for mounting on aircraft.[22]

Malodorous chemicals, also known as stink bombs, are useful for area denial or crowd dispersal. Some of these stink bombs are powerful enough to induce gagging or vomiting. While not forming an impermeable barrier, these pungent smells can prevent an area from being occupied for some time. A practical peace support application may be when it becomes necessary to extricate American forces from otherwise friendly crowds.

Nets provide another counterpersonnel option. Recent improvements in the materials used for netting and advances in projection techniques for both distance and accuracy have greatly refined this non-lethal means. Dispensers come in a variety of munitions, including a 40-mm round that can be used with the standard M203 grenade launcher. Also, larger nets have been designed for use at longer ranges and for targets that include multiple persons. Combining nets with electromagnetic technology provides another option where smart sensors administer a shock only when they sense a captive trying to escape. Net technology may also be the next step in providing a safe alternative to mines. A claymore variant deploys a sticky net against intruders while a Bouncing Betty type pops up in the air and explodes when it is

about waist high. Both versions will assist in accomplishing the usual mission of minefields without the deadly consequences of high explosives.[23]

There are many varieties of non-lethal rounds. These include baton and bean bag rounds, as well as plastic and rubber bullets. All low kinetic energy rounds come with a warning about proper use and acknowledge the possibility of serious injury or death. Injuries from these type rounds have been compared to baseball impact. "While the head is obviously vulnerable, likewise an unprotected chest, heart, liver and spleen are also at risk."[24] The ring airfoil grenade round is another innovation. Fired from a special launcher that fits on the standard M16 rifle, rings are launched and spin at a rate of 5,000 revolutions per minute. As it spins the ring expands so by the time it impacts the target its force is spread over a larger area, thus minimizing the potential for serious injury.[25]

Riot control agents can cause tearing, nausea and vomiting. They may be mixed with water or sprayed as vapor. Although many of these agents are toxic, they are not believed to cause a risk to human health under limited applications of short duration. "While some risk is involved, especially to the elderly, babies and people with respiratory problems, these weapons offer a viable alternative to lethal weapons."[26]

Helpful for the countermaterial capabilities are electromagnetic pulse (EMP) weapons, slippery foams, caltrops and various vehicle stoppers.

EMP weapons operate under the basic concept of generating one or more very intense pulses of electromagnetic power that penetrate equipment to degrade or destroy sensitive electronic circuitry, immobilizing or rendering the equipment useless.

Slippery foams are super lubricants that once placed on the ground make vehicle movement nearly impossible. They work best when employed on concrete or asphalt surfaces. One employment method involves placing small capsules containing the superlubricants across an area. They are then crushed by targeted vehicles, greatly inhibiting mobility.

Caltrops are four pointed scatterable spikes designed so that when dispersed one point is always pointing straight up. These simple devices can inhibit transportation movements by puncturing the tires of the vehicles that pass over them.

Work is in progress to create a portable handheld device that can stop military and commercial vehicles by disabling the vehicle's electronic components, either with high power microwave signal or by direct contact. Another vehicle stopper dubbed the Car Catcher uses the same principles as that used on aircraft carriers to stop landing aircraft. It is expected that the Car Catcher will become part of the security hierarchy at temporary military facilities. It may also be used to control traffic in countries where warring factions are a danger to the military

and the local populace. Likewise, it could be used to stop vehicles that are loaded with explosives and sent on a suicide mission when the use of lethal force would be an appropriate response but a deadly mistake.[27]

PEACE OPERATIONS

Doctrine recognizes three levels of war: strategic, operational and tactical. However, advances in technology, information age media reporting and the compression of time and space relationships contribute to the growing interelationship between the levels. Commanders at every level must be aware that in a world of constant, immediate communications, any single event may cut across the three levels.[28]

Political, diplomatic and economic demands dictate that future operations, where possible, minimize U.S. casualties while limiting collateral civilian casualties and collateral damage to civilian objects. "Crowd control in conducting peacekeeping and humanitarian assistance missions is as likely a task for the Army as is destroying enemy armor and infantry forces in war."[29]

Peace operations have strategic, operational and tactical goals and consequences. They also carry a high expectation for a low number of casualties. It's clear U.S. policymakers and military leaders have to deal with this expectation. It's part of the environment and the nature of the business. As one brigade commander of U.S. forces in Bosnia stated, "You've made us policymakers. And it's not just me, not just colonels, its every private with a rifle."[30] Lieutenant General John Abrams acknowledged that "there are going to be junior people who do things that have strategic consequences. If I'm uncomfortable with that, I'd have to engineer the operation so that junior people never do anything. And that's impossible." [31]

Common characteristics of peace operations include the primacy of political objectives, complexity, ambiguity and uncertainty, force protection required, involvement of international and non-governmental organizations, and measures of success being vague.[32] Also, some general principles have included consent, minimum use of force, and impartiality.[33] The role non-lethal weapons can play in these operations is becoming more recognized and appreciated as we head into the 21st century.

Strategic advantages non-lethal weapons offer include providing operational flexibility and technological dominance. By providing a flexible option that lies between doing nothing where credibility and control would be lost, and resorting to lethal force where impartiality, calm and a non-provoking outlook could easily be forfeited, non-lethal weapons provide the U.S. with a valuable means to deal with the situation. Without non-lethal alternatives the commander

basically has two options. He can do nothing and jeopardize the credibility and control essential in peace operations, or he may go too far and apply lethal force to situations that do not require, and in fact deplore such drastic steps.

Non-lethal capabilities complement and extend the nation's diplomatic and military options beyond the use of more traditional lethal weapons. They enhance the Army's ability to meet requirements of applying force proportional to the threat and discriminating in the application of force during military operations. Non-lethal capabilities can reduce the risks of perceived excessive force, promote international political support, alleviate environmental concerns, and enhance post conflict transitions and termination.[34]

A strategic effect occurs with the message intent behind the introduction of non-lethal weapons. These weapons can bring with them a moral "high ground" position, especially in peace operations, that is unavailable through the traditional employment of force.[35]

With CNN cameras frequently on the scene, the strategic implications of non-lethal weapons is further compounded. When the situation gets tough or out of control, it's much more palatable to have pictures across the world's television screens reflecting U.S. troops employing non-lethal means as opposed to deadly force when possible. This assists in maintaining the moral high ground. Undoubtedly, in this age of the CNN factor policymakers prefer the most effective, yet bloodless options possible. "The ability to nonlethally overwhelm an enemy who is using lethal force has become a clear requirement for peace operations where minimum destruction of life and property are prerequisites for action."[36] Needless to say the use of deadly force will be viewed and adjudicated in the court of public and world opinion. If deemed inappropriate, it can have a devastating effect, while conversely the same visual forces can muster support for the U.S. policies when the troops act appropriately.

The influential Council on Foreign Relations in its report on non-lethal technologies analyzed the bloody 1993 operation in Somalia.

> They indicated that the reported death of an estimated 6,000 to 10,000 Somalis from actions by U.N. forces, many as a result of fire from helicopter gunships, seems counter to the stated purpose of the intervention even apart from the moral repulsion of needless death. The effect on U.S. forces of firing into crowds including women and children in which snipers are concealed is also relevant. In Somalia, street and point control through the use of incapacitating foams and flight-inducing smells could have offered significant advantages over deadly fire from helicopter gunships in achieving political goals.[37]

The first deployment of U.S. forces armed with non-lethal weapons was to Somalia during Operation United Shield in 1995. The 1st Marine Expeditionary Force (1 MEF) under the

command of Lieutenant General Anthony C. Zinni was given the mission of protecting the withdrawal of UN peacekeeping forces from Somalia.

> It was quickly realized that much of the 1 MEF's tasks would involve engaging with hostile unarmed civilians such as rioters and looters. Therefore, the staff began to look for the best available crowd control equipment to perform this mission. The planners knew there was a need for weapons that would effectively fill the gap between verbal warnings and the use of deadly force.[38]

They quickly discovered DoD had little to offer in the way of non-lethal weapons and determined they would have to go with "off the shelf" systems.

Because of time constraints, there were several factors to consider as they shopped the market for non-lethal alternatives. One of the key factors in selection was availability. Virtually all of the munitions and weapons were required to have a two week guaranteed delivery date to ensure they would be available in time. Quantity was another concern as many manufacturers and distributors of non-lethal weapons do not maintain large inventories. Two additional factors were identified in the selection and purchase of the essential equipment. The first was performance in the field, and the second was the time required to train individuals in their employment. The final critical factor was the need to be able to deliver the munitions using organic weapons systems.[39] With respect to the last factor, "the M203 grenade launcher, and the 12 gauge shotgun were both systems familiar to the Marines, and they satisfied the requirement that they could easily be converted back to lethal capabilities."[40]

As part of the preparation for Operation United Shield, the following non-lethal systems were acquired, approved and deployed: 40mm systems of five types of rounds, 12-guage systems with three types of rounds, pepper sprays, stinger grenades, flash bangs and two types of foam, sticky and aqueous.[41] During the actual deployment there was only limited use of sticky foams and caltrops to enhance barrier systems at night during the final stages of the withdrawal. Despite this limited use of new non-lethal weapons technology, the Marines were able to point to several operational lessons for future non-lethal weapon utility.[42]

Furthermore, the news media was alerted to the non-lethal systems. The intent was to let the world know that the U.S. was bringing alternatives to lethal means, ones that they would not be afraid to use. It was stressed that if the U.S. troops were fired upon, they would not hesitate to return fire with their conventional and lethal weapons.

United Shield came off without a hitch. Later, Lieutenant General Zinni stated "that although the non-lethal weapons available to him were limited, he would never go on another peace support operation without them. He also proclaimed an urgent need for more such weapons."[43]

Uphold Democracy in Haiti in 1994 was another peace operation where non-lethal weapons could have played a significant role. As the ousted Haitian military leaders fled the country, American forces were allowed to peacefully enter the nation. Their mission was to support the reintegration of President Aristide. As a result of the extreme poverty level and lack of a trained host nation police force, crime was epidemic and the country in chaos. "Savage force had been used to subdue the people, and the propensity of the Haitians to brutally use the machete as the tool of choice when dealing with interpersonal conflict bothered many of the U.S. forces. "[44]

> Even as Uphold Democracy was beginning, brutal acts of retribution for past events were often taking place in front of the U.S. troops. However, the rules of engagement held that the U.S. forces could not intervene with their lethal systems. A blow to U.S. credibility occurred as televised violence occurred while fully armed U.S. troops stood on the sidelines, administratively prevented from intervening. Their options were few. Although they could threaten force, if their bluff was called, they had to back down. However, if their lives were threatened they could use lethal force. Neither option was satisfactory. [45]

Slowly a relative calm returned to Haiti. However the American troops were still having problems. Since U.S. soldiers were being supplied with more food and other material than most Haitians had ever seen, even the simple task of dumping the trash endangered the forces.[46] It actually placed them in a life-threatening situation as the starving Haitians were willing to take high risks for access to the trash piles. A process was established where the Haitians were kept a safe distance back while the soldiers dumped their trash and then returned to their vehicles. Then a whistle was blown and the multitude of scavengers swarmed onto the refuse. It would have been political suicide to shoot people just rummaging through the garbage for something to eat. Unfortunately, the U.S. troops again had very few options available for protecting themselves without resorting to lethal force.[47] Luckily nothing significant happened.

During Uphold Democracy non-lethal weapons could have bolstered, as well as provided, political and military leaders with valuable options for dealing with the prevalent unrest. Incapacitating foams, pepper spray, malodorous agents and rubber bullets could have assisted with achieving political goals, while simultaneously offering force protection measures badly needed by U.S. forces.

Following the signing of the Dayton Peace Accords in 1995, the U.S. agreed to support the United Nations and NATO by joining the United Nations Protection Force (UNPROFOR) in the former Yugoslavia. Unlike the previously mentioned operations, the parties to this conflict had more sophisticated weapons validating the need for well-armed U.S. troops with lethal means.

However, there were many other problems for which the U.S. and its allies did not have good options. One prevalent issue was the protection of designated safe havens. Although agreed upon by all factions, major violations occurred frequently and fighting took place near these sanctuaries. After a decision that UN forces were insufficient to protect the safe havens by military means, and that the mission was not within the scope of their official mandate, they were told to withdraw.

> When the time came, the civilian population, knowing they would be placed at great risk, attempted to prevent the withdrawal. They did so by simply staying physically close to the UN forces. Of course it would be impossible to use lethal force against these people whose only concern was their personal safety. After all, those remaining behind had every reason to be frightened. Many had seen the torture and murder committed against their friends and family members. They knew of the mass graves now being authenticated by the UN and were not inclined to trust their adversary with their lives. However, the UN forces were not equipped to handle noncombatants who attempted to block their departure. This led to very difficult confrontations between the protected and the protectors. [48]

In such a situation, when diplomatic actions have failed and the forces must be extracted, non-lethal weapons provide one of the few viable alternatives. This is a situation where there are no good choices. Nations providing the peacekeepers do not place them there to fight for one side or the other. Likewise, the public will is not strong enough to risk casualties to the peacekeepers. Therefore, for such unbending situations, non-lethal weapons are an essential force augmentation, not to stop slaughter, unfortunate as that may be, but to get friendly forces out alive.[49]

Another problem without a solution involved the frequent and blatant violations of the accord's mutually agreed upon rules concerning the placement of heavy weapons. Violators would intentionally locate these weapon systems close to civilians. Moreover, air defense systems would be placed immediately next to hospitals knowing the UN would not dare strike them. All this was orchestrated to preclude allied use of existing lethal weapons. UNPROFOR was placed in a position of either using lethal weapons that would produce collateral damage and casualties, or ignoring the violation.[50] Neither option was attractive.

In Bosnia, combined non-lethal technologies, "including movement interdiction efforts on roads and the use of offensive smells and sounds to disrupt or punish local efforts at ethnic cleansing"[51] could have offered additional options to the political leadership and the military commander in the field.

During the current mission in Kosovo, U.S. Army forces employed non-lethal munitions for the first time in a deployed role. Heavily outnumbered American military police (MP) fought and

prevailed over coordinated assaults by a Serbian mob on April 4, 2000 in the worst violence seen by KFOR. Several hundred people in the Serb conclave of Sevce trapped a squad of MPs who had arrested a villager on minor weapons violations. Originally sent to accompany UN police on a search of the home of a robbery and burglary suspect, the Americans faced a surrounding crowd which erected barricades and refused to let them leave with the detainee after the UN police had departed. These MPs and additional ones sent to rescue this squad were pelted with rocks and hit with clubs. Finally, the U.S. forces employed rubber bullets to disperse the rambunctious mob and extricate themselves from the chaos.[52] Here non-lethal options provided the means to protect U.S. troops, deal with a dangerous and unruly mob and keep the moral high ground by not jeopardizing unnecessary casualties.

THE ISSUES

There are several issues surrounding the development and employment of non-lethal weapons. Included are legal and ethical concerns, mission creep, unrealistic expectations, rules of engagement and training matters.

Over time there have been numerous declarations and conventions that have some applicability or relationship to non-lethal weapons. As a world leader the United States chooses to accept the moral obligations imposed by these documents. Therefore, it is DoD policy that a legal review must take place before a contract is awarded for producing a new non-lethal weapon.[53] In so doing, the key issues to examine are: whether the weapon causes suffering that is needless, superfluous, or disproportionate to the military advantage reasonably expected from its use; can the weapon be controlled so as to be directed against a lawful target and be discriminate in its effects; and are there any extant rules of law that prohibit its use in the law of armed conflict.[54] The intent is to balance between suffering and military necessity. "In general, most non-lethal weapons meet all the tests. Certainly it seems preferable to incapacitate temporarily by employing non-lethal means rather than to kill."[55]

Two areas that probably generate the most emotional debate are chemistry and lasers. There have been several attempts to control lasers on the battlefield. The Red Cross has argued "that anti-personnel blinding weapons pose a threat to civilians and soldiers alike, that they cause unnecessary suffering and superfluous injury, and that these particularly cruel weapons should be outlawed."[56] However, they have also acknowledged that antisenor lasers or other antimaterial applications of lasers are considered legal. "Some opponents want all lasers that have the capacity to blind eliminated from the battlefield. Unfortunately this would include those used for range finding and precision weapons. This is not going to happen."[57] It

is worth noting that the legal opionon of the Army's Judge Advocate General and concurred to by those of the Navy and Air Force, is that the use of a laser to blind does not constitute unnecessary suffering, nor is it illegal.[58] The bottomline on military applications of lasers is that "they are legal on the battlefield provided their primary purpose is not to intentionally cause permanent blindness."[59]

The legal issues surrounding chemical weapons are also confusing. The use of some chemical weapons depends on the circumstances involved. The best known chemical agents are designated riot control agents (RCAs). Although RCAs are currently prohibited as a method of warfare, they are legal for use by law enforcement agencies, including being employed to control riots. "Under the Chemical Warfare Convention ratified in 1997, RCAs can probably be used during peacekeeping operations, but not if an engagement escalates to international conflict."[60] Furthermore, it appears "that most anti-material non-lethal chemical systems would meet the test of legality. In general, they are discriminate in that they are designed to attack a small portion of the target, and frequently nontoxic."[61]

Other non-lethal weapons systems that must be considered include low-impact kinetic rounds and acoustic systems.

> Before deployment to Somalia, a number of non-lethal weapons were reviewed and approved for use. This included several low-impact rounds, sting grenades, and sticky foam. Each passed the test. Acoustic weapons are questioned because of the area effect, but advances in directionality should meet the requirements in the field.[62]

At the strategic level, there is substantial concern that non-lethal weapons may place American policymakers on a slippery slope to war. [63] The belief is that the National Command Authority may be more readily inclined to commit U.S. forces to actions it would otherwise avoid, believing that non-lethal weapons could be viewed as making engagements less bloody or dangerous. These weapons may create options that appear so attractive to policymakers that they will be tempted to use them in inappropriate circumstances and be led into a quagmire. However, "widespread understanding of the capabilities and limitations of non-lethal weapons, admission of the need for careful acknowledgement of the adversary, coherent, integrated plans of action, and the practice of early congressional consultation should limit the risk of entry into the slippery slope."[64]

Unrealistic expectations are also a valid concern. Exaggerated claims of the capabilities of non-lethal weapons could create false expectations. Deputy Secretary of Defense John Deutch cautioned that "non-lethal weapons are not a panacea," as he addressed the Council on Foreign Relations study group.[65] They have a vital place in future warfare, and peace operation

in particular, serving to accommodate some of the complex problems of national security the United States faces as it heads into the 21st century. The Council on Foreign Relations study group concluded that an expectation of bloodless battles is doomed to disappointment and a requirement that non-lethal weapons be employed before lethal means are used could expose U.S. forces to needless dangers. Troops deployed with non-lethal weapons should always have clearly adequate lethal weapons available together with the authorization to use them as necessary. It also must be clearly understood that the term non-lethal comes back to "intent" not to kill and not the zero probability of fatal consequences in employing these tools. "The intent of non-lethal weapons is to allow use of force in an attempt to prevent escalation without producing irrevocable fatalities."[66] False expectations could result in unwarranted criticism of the military when casualties inevitably result. Furthermore, exaggerated claims of their capabilities could create a false sense of security, with potentially disastrous consequences to the soldier who overly relies upon them. However, "in certain circumstances the existence of non-lethal options may increase the safety of U.S. troops and the effectiveness of U.S. actions."[67] Non-lethal weapons should be clearly viewed as an additional capability available to the commander, one that is not a substitute for lethal weapons, and never thought of as a necessary step in the escalation ladder when threatened with deadly force.

Rules of Engagement (ROE) are a contentious legal and policy issue in respect to non-lethal weapons. The drafting of ROE must not be left solely to the lawyers, but rather a joint effort with the commanders who will have to employ them. Among the points requiring consideration when drafting these ROE are that:

> ...they must be simple and clear for the troops who must apply them; there should only be one set covering both lethal and non-lethal; they should permit a logical escalation of force from non-lethal to lethal means as circumstances change; if a soldier is allowed to use lethal force when he deems necessary, the ROE should also allow him to use non-lethal force; and release authority for weapons organic to a particular command level should be at that level of command. [68]

Recently published DoD standing rules of engagement specifically mention non-lethal weapons, thus elevating their utility on the scope of U.S. military leaders.[69]

Training concerns also come to the forefront. A crucial resource issue is whether military personnel can be effectively trained for their primary warfighing mission where lethal weapons are the norm and properly trained and ready to use non-lethal weapons in various contingencies. This is an issue of psychology or mindset, as well as time and money. Leaders

must ensure that extensive training in the employment of non-lethal weapons does not impact negatively on the willingness of troops to employ lethal force when appropriate.

RECOMMENDATIONS

As the largest service, it seems sensible that the U.S. Army should become the Executive Agent for non-lethal weapons. Furthermore, it is the service that will most likely deploy and provide the preponderate number of personnel on peace operations. Logically it will have the greatest need for these weapons. While the achievements of the Marine Corps in getting the DoD program up and running are laudatory, the time is right for this switch as the Army embarks on its transformation process to maintain viability in implementing national security and military strategy.

Additional money for non-lethal weapons Research, Development, Test and Evaluation (RDTE) should also be provided. There currently are 14 projects backed with $15 million to $20 million each year.[70] In this era of decreased resources this is a tough sell. However, the potential benefits that non-lethal weapons provide national policymakers and commanders in the field dictate elevating the attention and funding these programs have received. Along these lines, the work done between the NIJ and DoD concerning non-lethal weapons should aggressively continue as future systems are sure to provide increased options to both law enforcement and military leaders. Moreover, where as the current trend among non-lethal weapons employment seems to be driven by adopting technologies or off the shelf products to operational uses, it's time to aggressively determine the operational needs of commanders first and then develop the necessary technologies to make it happen.

Similarly, DoD should accelerate the development of future non-lethal weapons. It may be time to change the prevalent military mindset of repeatedly sending the inventor back to the drawing board asking them to tweak or militarize technologies. "Some inventors have privately grumbled that DoD nit-picks to the point that new technologies struggle to make it out of the laboratory."[71] The mindset should change from inflexible perfection to immediate practicability.

Improvements in educating key leaders about non-lethal capabilities, be it Congressional leaders or military ones, is essential. A likely result of educating policymakers on the valuable utility of these tools, is increased funding for further developments and additional purchases. Likewise, with the realization of the potentials and limitations that these systems provide, leaders can hedge against the slippery slope of war. Increased training for military leaders should occur at each level of professional development, from basic and career courses, to field training and as part of computer simulations. By increasing this training and education process

these weapons will gain acceptance and confidence with the leaders who will be responsible for their effective employment, switching the mindset from them being something bizarre to being recognized as another tool on the use of force continuum.

The media must be educated on non-lethal weapons capabilities, policies and direction as well. The way these weapons are conveyed to the public will go a long way in painting their acceptability to friends and foes alike. The intent behind these technologies can either be made to appear sinister, or benevolent, depending on how the story gets told. Furthermore, the whole story needs to be told, including the key point that these weapons allow us additional options, but do not equate to never lethal, nor will they tie our hands to employing lethal means when we deem necessary.[72] The general thrust of any public affairs campaign should emphasize that non-lethal weapons represent an opportunity to employ a proportional response to various provocations, primarily out of concern for the sanctity of life.

Furthermore, the accessibility to, and unit training on, non-lethal weapons must be improved. The Army embarked on improving accessibility when it presented a concept for fielding non-lethal capability sets for deploying soldiers. The plan is to buy 30 sets over the next five years.[73] Another milestone should be to include non-lethal capabilities in normal Tables of Organizations and Equipment (TOEs) and make these weapons part of the Army's future objective force.

As far as the time and money aspect of training on non-lethal weapons is concerned there are a number of possible solutions. One is to designate and train a separate non-lethal subordinate unit within each larger unit. While this subordinate unit should still be equipped and trained with lethal weapons, it would provide liaison teams to units for training and operations. Another option is to provide non-lethal familiarization training to all individuals, while another solution would be to provide a non-lethal expert to each unit of a certain size who would be responsible for non-lethal training and proper employment. [74] Troops must not disregard their warfighting skills, nor lose their lethal capabilities. However, they must be capable of developing the mindset that peace operations are not an "all or nothing" proposition.

CONCLUSION

Sustaining a safe and secure environment as part of peace operations is sure to play a major role for the United States as it heads into the 21st century. Current non-lethal weapons provide a valuable tool in dealing with these situations. Present scenarios such as Bosnia and Kosovo illustrate situations where non-lethal weapons do offer strategic political advantages. Properly orchestrated, non-lethal weapons can gain strategic advantages by exploiting the CNN

effect to our benefit. Furthermore, proper investment and direction for the development and procurement of additional technological advances in the relatively new field of non-lethals can provide improved capabilities to help shape and respond in concert with our national security and military strategies.

The U.S. urgently needs to provide its military forces involved in peace operations with additional non-lethal weapons. This will ensure the troops are provided a credible, incremental ability to turn up the levels of force, while improving their utility as authority figures in tumultuous environments. All of this results in greater strategic and operational flexibility for national policymakers as the U.S. maintains the moral high ground as the world's sole superpower.

WORD COUNT= 7,005

ENDNOTES

[1] Council on Foreign Relations Report, Non-Lethal Technologies: Military Operations and Implications, (New York: Council on Foreign Relations Press, 1995), vii.

[2] John B. Alexander, Future War: Non-Lethal Weapons in Twenty First Century Warfare, (New York: St. Martin Press, 1999), 29.

[3] Lois Pilant, "Crime & War: An Analysis of Non-Lethal Technologies and Weapons Development," The Police Chief, 6 (June 1998): 58.

[4] Nick Lewer and Steven Schofield, Non-Lethal Weapons: A Fatal Attraction? (London & New Jersey: Zed Books, 1997), 78.

[5] Alexander, 29.

[6] Lewer and Schofield, 5.

[7] Department of Defense, Policy for Non-Lethal Weapons, Department of Defense Directive 3000.3 (Washington, D.C.: U.S. Department of Defense, 9 July 1996), 2.

[8] Ibid.

[9] Council on Foreign Relations Report, xii.

[10] Defense Planning Guidance, cited in unclassified Army Briefing Slides Titled "The Army Perspective on Non-lethal Weapons", presented at the DoD Non-Lethal Defense IV Conference, Tysons Corner, VA, 21 March 2000. Slides obtained through U.S. Army Military Police School, Directorate of Combat Developments.

[11] U.S. Marine Corps, Joint Concept for Non-Lethal Weapons, (Washington, D.C.: U.S. Marine Corps, 5 January 1998), 1-17.

[12] Department of the Army, Military Operations: Concepts for Nonlethal Capabilities in Army Operations, TRADOC Pamphlet 525-73, (Fort Monroe, VA: U.S. Army Training and Doctrine Command, 1 December 1996), 1-19.

[13] Department of Defense, Dual Use Technology: A Defense Strategy for Affordable , Leading Edge Technology (Washington: Government Printing Office, February 1995), p. 16.

[14] US Marine Corps, Joint Concept for Non-Lethal Weapons, 10-11.

[15] Alexander, 60.

[16] Ibid, 67.

[17] Ibid, 70.

[18] Ibid, 78.

[19] Ibid, 71.

[20] Ibid, 78.

[21] Ibid, 77.

[22] Ibid, 101.

[23] Ibid, 82-85.

[24] Ibid, 92.

[25] Ibid, 91.

[26] Ibid, 78

[27] Pilant, 58.

[28] Department of Defense, Doctrine for Joint Operations, Joint Publication 3-0 (Washington, DC: U.S. Department of Defense, 1 February 1995), II-2.

[29] Military Analysis Network, "Non-Lethal Weapons," January 5, 2000; available from < http://www.fas.org/man/dod-101/sys/land/non-lethal.htm>; Internet; accessed 1 September2000.

[30] Rick Atkinson, "Warriors Without a War-- U.S. Peacekeepers in Bosnia Adjusting to New Tasks: Arbitration, Bluff, Restraint," The Washington Post, April 14, 1996, A1, A22.

[31] Ibid.

[32] Department of Defense, Joint Tactics, Techniques, and Procedures for Peace Operations, Joint Publication 3-07.3 (Washington, DC: U.S. Department of Defense, 12 February 1999), I-12.

[33] Larry M. Forster, "Peace Operations: An Update", in U.S. Army War College Department of National Security and Strategy, Course 2 readings: War, National Policy and Strategy, Volume IV., 23 August-18 October 2000, p. 80.

[34] TRADOC Pam 525-73, 6-7.

[35] Bert Tussing, "US/UK Non-Lethal Weapons/Urban Operations War Game," memorandum for Director, Center for Strategic Leadership, U. S. Army War College, Carlisle Barracks, PA, 18 September 2000.

[36] Chris Morris, Janet Morris and Thomas Baines, "Weapons of Mass Protection: Nonlethality, Information Warfare, and Airpower in the Age of Chaos," Airpower Journal Vol. IX, No.1 (Spring 1995): 16.

[37] Council on Foreign Relations Report, 4.

[38] Lewer, 68.

[39] F.M. Lorenz, "Non-Lethal Force: The Slippery Slope to War?", Parameters XXVI (Autumn 1996): 54.

[40] Lewer, 68.

[41] Lorenz, 3.

[42] Lewer, 69.

[43] Alexander, 24.

[44] Ibid, 27.

[45] Ibid.

[46] Rick Bragg, "I Never Seen Nothing Like That," The New York Times Magazine, 6 November 1994, 52-57.

[47] Alexander, 27.

[48] Ibid, 28.

[49] Ibid, 166.

[50] Ibid, 29.

[51] Council on Foreign Relations Report, viii.

[52] Jonathan Crane, "Riot in Sevce," Stars and Stripes April 00, obtained through U.S. Army Military Police School, Directorate of Combat Developments.

[53] Department of Defense Directive 3000.3, 4.

[54] Alexander, 193.

[55] Ibid, 197.

[56] Lewer, 92.

[57] Alexander, 194

[58] Hays Park, Special Assistant to the Judge Advocate General of the Army, "Memorandum of Law: Travaux Preparation and Legal Analysis of Blinding Laser Weapons Protocol," 20 December 1996, and published in The Army Lawyer, June 1997, 33-41.

[59] Alexander, 194.

[60] Ibid, 195.

[61] Ibid.

[62] Ibid, 196.

[63] Council on Foreign Relations Report, 8; Department of Defense, US/UK Non-Lethal Weapons/Urban Operations Wargaming Program Policy Seminar Assessment, Strategic Assessment Center Project No. 01-1536-02-1259-000, 19-20 January 2000, 6; and Lorenz.

[64] Council on Foreign Relations Report, ix.

[65] Alexander, 179.

[66] Alexander, 182.

[67] Council on Foreign Relations Report, p. x.

[68] US/UK Non-Lethal Weapons/Urban Operations Wargaming Program Policy Seminar Assessment, p. 6

[69] Joint Chiefs of Staff, Standing Rules of Engagement for US Forces, Chairman of the Joint Chiefs of Staff Instruction 3121.01A (Washington, D.C.: U.S. Department of Defense, 15 January 2000), A-14.

[70] Pilant, 58.

[71] Ibid, 60.

[72] Tussing.

[73] Army Briefing Slides Titled "The Army Perspective on Non-lethal Weapons", presented at the DoD Non-Lethal Defense IV Conference, Tysons Corner, VA, 21 March 2000. Slides obtained through U.S. Army Military Police School, Directorate of Combat Developments.

[74] US/UK Non-Lethal Weapons/Urban Operations Wargaming Program Policy Seminar Assessment, p. 8

BIBLIOGRAPHY

Alexander, John B. Future War: Non-Lethal Weapons in Twenty First Century Warfare. New York: St. Martin Press, 1999.

Alexander, Lexi R., and Julia L. Klare. "Nonlethal Weapons: New Tools for Peace." Issues in Science and Technology 12 (Winter 1995): 67-73.

Atkinson, Rick. "Warriors Without a War--U.S. Peacekeepers in Bosnia Adjusting to New Tasks: Arbitration, Bluff, Restraint." The Washington Post, 14 April 1996, p. A1, A22.

Barry, Ellen. "Non-Lethal Weapons: Sci-Fi Meets Pentagon." Boston Globe, 20 November 2000, p. B1.

Barry, John and Tom Morganthau. "Soon, Phasers on Stun." Newsweek 123 (7 February 1994): 24-26.

Bragg, Rick. "I Never Seen Anything Like That." The New York Times Magazine (6 November 1994): p. 52-57.

Council on Foreign Relations: Report of an Independent Task Force. Non-Lethal Technologies: Military Operations and Implications. New York: Council on Foreign Relations, 1995.

Crane, Jonathan. "Riot in Sevce." Stars and Stripes, April 2000. Obtained through U.S. Army Military Police School, Directorate of Combat Developments.

Downie, Leonard Jr. "Shelton: Peacekeeping Missions Unavoidable." The Washington Post 17 November 2000, p. 2.

Fink, Donald E. "Nonlethal Weapons Give Peacekeepers Flexibility." Aviation Week & Space Technology 137 (7 December 1992): 50-51.

Forster, Larry M. "Peace Operations: An Update." In U.S. Army War College Department of National Security and Strategy, Course 2 Readings: War, National Policy and Strategy. Carlisle Barracks: U.S. Army War College, 23 August-18 October 2000.

Lamb, Timothy J. Emerging Nonlethal Weapons Technology and Strategic Policy Implications for 21st Century Warfare. Strategy Research Project. Carlisle Barracks: U. S. Army War College, 12 February 1998.

Lewer, Nick and Steven Schofield. Non-Lethal Weapons: A Fatal Attraction?. London & New Jersey: Zed Books, 1997.

Lorenz, F.M. "Non-Lethal Force: The Slippery Slope of War?" Parameters XXVI (Autumn 1996): 52-62.

Lynch, Gregory R. The Role of Non-Lethal Weapons in "Special Wars". Thesis. Monterey, CA: U.S. Naval Postgraduate School, March 1995.

McNabb, Richard B. U.S. Military Intervention and the Role of Nonlethal Weapons. Strategy Research Project. Carlisle Barracks: U.S. Army War College, 7 April 1998.

Morris, Chris, Janet Morris and Thomas Baines. "Weapons of Mass Protection: Nonlethality, Information Warfare, and Airpower in the Age of Chaos." Airpower Journal IX (Spring 1995): 15-29.

Page, Clyde A. The Strategic Implications of the Use of Nonlethal Force. Strategy Research Project. Carlisle Barracks: U.S. Army War College, 15 April 1998.

Park, Hays, Special Assistant to the Judge Advocate General of the Army. "Memorandum of Law: Travaux Preparation and Legal Analysis of Blinding Laser Weapons Protocol." Published in The Army Lawyer, Department of the Army Pamphlet 27-50-295, June 1997: 33-41.

Pasternak, Douglas. "Wonder Weapons." U.S. News & World Report 123 (7 July 1997): 38-46.

Pilant, Lois. "Crime & War: An Analysis of Non-Lethal Technologies and Weapons Development." The Police Chief 6 (June 1998): 55-63.

Siniscalchi, Joseph. Non-Lethal Technologies: Implications for Military Strategy. Occasional Paper No.3. Maxwell Air Force Base: Air War College, March 1998.

Stanton, Martin N. "What Price Sticky Foam?" Parameters XXVI (Autumn 1996): 63-68.

Tussing, Bert. "US/UK Non-Lethal Weapons/Urban Operations War Game." Memorandum for Director, Center for Strategic Leadership, U.S. Army War College. Carlisle Barracks, PA, 18 September 2000.

U.S. Department of the Army. Military Operations: Concepts for Nonlethal Capabilities in Army Operations. TRADOC Pamphlet 525-73. Fort Monroe, VA: U.S. Army Training and Doctrine Command, 1 December 1996.

U.S. Department of the Army. Peace Operations. Field Manual 100-23. Washington, D.C.: U.S. Department of the Army, 19 September 1996.

U.S. Department of the Army. Briefing Slides Titled "The Army Perspective on Non-Lethal Weapons" presented at the DoD Non-Lethal Defense IV Conference. Tysons Corner, VA: 21 March 2000. Slides obtained through U.S. Army Military Police School, Directorate of Combat Developments.

U.S. Department of Defense. Doctrine for Joint Operations. Joint Publication 3-0. Washington, D.C.: U.S. Department of Defense, 1 February 1995.

U.S. Department of Defense, Dual Use Technology: A Defense Strategy for Affordable, Leading-Edge Technology. Washington, D.C.: U.S. Government Printing Office, 1995.

U.S. Department of Defense. Joint Tactics, Techniques, and Procedures for Peace Operations. Joint Publication 3-07.3. Washington, D.C.: U.S. Department of Defense, 12 February 1999.

U.S. Department of Defense. Policy for Non-Lethal Weapons. Department of Defense Directive 3000.3. Washington, D.C.: U.S. Department of Defense, 9 July 1996.

U.S. Department of Defense. Standing Rules of Engagement for U.S. Forces. Joint Chiefs of Staff Instruction 3121.01A. Washington, D.C.: U.S. Department of Defense, 15 January 2000.

U.S. Department of Defense. US/UK Non-Lethal Weapons/Urban Operations Wargaming Program Policy Assessment. Strategic Assessment Center Project Number 01-1536-02-1259-000. Quantico, VA: 19-20 January 2000.

U.S. Department of Defense. US/UK Non-Lethal Weapons/Urban Operations Wargaming Program War Game Two Assessment. Strategic Assessment Center Project Number 01-1536-02-1260-002. Quantico, VA: 13-16 June 2000.

U.S. Marine Corps. Joint Concept for Non-Lethal Weapons. Washington, D.C.: U.S. Marine Corps, 5 January 1998.