The Legal and Ethical Considerations for Canada in Using Non-Lethal Weapons in an Operational Environment

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ABSTRACT

This paper examines some of the legal and ethical considerations of using Non-lethal weapons, raises some concerns which the Canadian Forces should address if some of the new Non-lethal weapons are to be incorporated into the National Use of Force Model, and presents some recommendations to ease in the transition of these new options. This paper concludes by recommending the introduction of the Taser into the Canadian Forces Military Police Branch.

Since the early 12th century, there have been efforts by the church and state(s), and more recently the international community to codify the laws of armed conflict. Although the international community recognized a nation's right to use deadly force in defence of its national interests, international treaties like the Hague Convention (IV) Respecting the Laws and Customs of War on Land, ratified in 1907, forbid the use of arms, calculated to cause unnecessary suffering. But what constitutes unnecessary suffering?

The existing international treaties are insufficient to support and provide guidance to nations which currently use or are considering using some of the new Non-lethal weapons. The manner in which some Non-lethal weapons function may render an opponent incapacitated, but will result in the infliction of some pain and suffering. Therefore, is it better to kill your opponent, accepting the fact that there may or may not be any suffering, or is it better to use a Non-lethal weapon which will incapacitate your opponent but is specifically designed to cause suffering, the infliction of which is contrary to the Hague Convention (IV)?

The dilemma of using Non-lethal weapons to incapacitate, even though it was designed to cause some suffering, also brings the Just War Theory, ethical criteria of proportionality into play. Is the critical issue, the survival of the opponent, regardless of the amount of pain inflicted, or is the most important consideration the infliction of suffering, and whether or not that suffering is temporary or permanent?

The selection of a suitable Non-lethal weapon for the CF must be examined from both a legal and ethical perspective. Once a suitable Non-lethal weapon has been identified, the CF must educate the Canadian public on the specifics of the weapon while dispelling Non-lethal weapon myths, and we must properly train our soldier so that they will be able to perform their duties with complete confidence in the Non-lethal weapon and the chain of command. By understanding the implications and potential pitfalls of using a specific Non-lethal weapon, we will be better prepared to provide these new options to our soldiers.

The Canadian Forces must begin the slow process of incorporating some of the newer Non-lethal weapons into the CF military. The *Oleoresin Capsicum Irritant Aerosol Spray*, or Pepper Spray, which is currently being issued to Canadian troops in operational missions abroad, is an example of how the introduction of a Non-lethal weapon has progressed from law enforcement to military operations. An effective first step would be the adoption of the Taser as part of the CF Military Police Branch. The Taser has been used by the Royal Canadian Mounted Police for the past six years, and it is surprising that this non-deadly option has not yet been made available to CF Military Police personnel.

THE LEGAL AND ETHICAL CONSIDERATIONS FOR CANADA IN USING NON-LETHAL WEAPONS IN AN OPERATIONAL ENVIRONMENT

"For to win one hundred victories in one hundred battles is not the acme of skill.
To subdue the enemy without fighting is the acme of skill.
Thus, those skilled in war subdue the enemy's army without battle.
They capture his cities without assaulting them and
overthrow his state without protracted operations. " [1]

Introduction

Today, we live in a complex world, and there is a great deal at stake when trying to protect national interests. Disputes amongst states can have a significant impact on the economic stability or prosperity of any country, and this could force heads of state to take the necessary steps in order to protect their national interests and the welfare of their citizens. Each step taken is part of the battle for public opinion, which must be carefully considered so as not to threaten the public support for the specific action a specific government chooses to take.

Heads of state can resort to a number of different options, including diplomatic, economic, international opinion and military, in which one, a combination of some, or all may be used to achieve resolution of the dispute, or in extreme circumstances force capitulation. Each option, with the exception of a Military intervention, increases the risk of direct conflict between states, and it is therefore important that every alternative is considered and ruled out before resorting to military intervention. David Morehouse, in his book *Nonlethal Weapons, War Without Death*, offers this quote from the US Directorate of Joint and Combined Environments. "The military element of power is the means through which a nation may focus its national power most directly and most

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1. Sun Tzu, *The Art of War,* Oxford University Press, New York, 1971, p. 77-79

quickly against another nation. Military force is the ultimate statement of national will in international relations and is interrelated with the political element of power." [2]

When confronted with rogue states or terrorist, some of the options may become moot. For example, you may be able to sway public opinion against a terrorist group, and you may be able to interrupt or seize their funding, however, it may be difficult to apply military means against them, simply because you may not be able to find them.

Sun Tzu's quote above, addresses the ultimate objective, which is the achievement of ones goal without having to resort to fighting your opponent. But what if your diplomatic efforts, international public opinion, and economic sanctions fail to influence your opponent's actions and you are forced to resort to military intervention? Can you still achieve the spirit of Sun Tzu's goal of winning without having to kill your opponent?

Imagine the possibility of facing an opponent on the battlefield, who is armed with the latest technology and fully motivated to the fight. But before the first shot is fired and full scale hostilities break out, a Non-lethal weapon (NLW) is activated and your opponents become incapacitated. With your opponents unable to offer any significant resistance, friendly forces can move in and safely remove, even if only temporarily, your opponent's capacity to wage war. Although the victory may be short lived because your opponents are still alive and able to fight another day, the immediate conflict has been won without having to resort to killing anyone. Sun Tzu would be so proud.

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2. Morehouse, David, *Nonlethal Weapons, War Without Death*, Praeger Publishers, Westport, CT, 1996, 11 in U.S. Directorate of Joint and Combined Environments, "Military and National Objectives. p. 24

Some of the new NLWs can incapacitate an opponent, however, in order to accomplish this, the impact on the human body may result in pain and suffering. Therefore the following question must be asked. Is it better to kill your opponent, accepting the fact that there may or may no be any suffering, or is it better to use a Non-lethal weapon which will incapacitate your opponent but is specifically designed to cause suffering, the infliction of which is contrary to the Hague Convention (IV)?

We are entering a new era in high tech weapons. In his book *Nonlethal Weapons, War Without Death*, David Morehouse understands that a significant change is coming when he states, "Until recently, destructive mechanical means have been the weapons of war, but now, a technological revolution has begun that will rival the discovery of atomic weaponry." [3] We must prepare for the changes which are coming if we are to take advantage of the benefits that these changes will bring.

With huge government defence contracts as an incentive, high-tech corporations are busy trying to develop the must-have NLWs of tomorrow. In his book *Asymmetries of Conflict – War Without Death*, John Leech provides a little insight into the focus of scientific research and development. He states,

> In the wake of the 'Star Wars' initiative, more than 50 percent of scientific research and development in British universities and institutes of higher education was related to military ends. In the USA, half a million scientists depend on military budgets. [4]

We are caught in this race to develop the latest NLW. In their book *Non-Lethal Weapons*, Nick Lewer and Steven Schofield believe that we have no choice but to

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3. Morehouse, David, Nonlethal Weapons, War Without Death, Praeger Publishers, Westport, CT, 1996. p. 16

4. Leech, John, Asymmetries of Conflict - War Without Death, Frank Cass Publishers, Portland Oregon, 2002, p. 138

continue along in this race because we can't afford not to. They state, "For all the attempts to market non-lethal weapons as new and different, what they really represent is the latest in a long line of weapons development based on the belief that advanced technology is the basis for military superiority." [5] If the Canadian military wants to remain effective in the hi-tech world of tomorrow, efforts must be taken to keep up with the latest advances in weaponry.

However, with huge financial incentives as the prize, major hi-tech industrial companies are busy trying to provide military and civilian law enforcement agencies with the latest NLW which will give the military an edge during a United Nations Security Council Resolution mission or an advantage during law enforcement activities. Nick Lewer and Steven Schofield believe that the level of NLW research and development is just beginning by stating that, "Although non-lethal weapons R&D may be relatively small-scale in comparison to other forms of conventional research, it is playing a growing role in sustaining both high levels of military R&D overall and high levels of military spending." [6] The development of any NLW will always result in secrecy surrounding the effects and the manner in which the technology works, the effects of the weapon, and if possible the method to counter those effects.

The advances in technology continue to outpace our ability to comprehend how new weapon systems will impact on our ability to project military power in the future? If we are to keep pace with these new technologies and fully understand their impact, we

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5. Lewer, Nick and Schofield, Steven, Non-Lethal Weapons: A Fatal Attraction?, Zed Books Ltd, London, 1997, 131

6. Lewer, Nick and Schofield, Steven, Non-Lethal Weapons: A Fatal Attraction?, Zed Books Ltd, London, 1997, 131

must examine how we can introduce these NLWs into the National Use of Force Model, and what issues we must consider if we are to avoid the pitfalls which lay before us.

This essay will examine the legal and ethical implications for the Canadian Forces (CF) in using NLWs in an operational environment, and the problems or concerns which must be addressed if NLWs are to be introduced to the Canadian Forces' Use of Force Model. To achieve this end, this essay will present a generic definition of NLWs, examine the various means that NLWs employ, briefly describe from a scientific perspective how these NLWs work, and introduce some common misconceptions about NLWs. A differentiation will be made between NLWs designed to specifically target individuals, those designed to specifically target material and equipment, and those designed to target both. It will also provide some background information regarding the different capabilities of various NLW systems, and provide some historical examples of efforts to ban new weapons from the battlefield, and the impact of NLWs used in recent operational environments. This will be followed by an examination of both the legal considerations and ethical restrictions facing military forces when NLWs are used in an operational environment. The essay will present a number of basic recommendations which should be considered if the Canadian people are prepared to support the Canadian Forces' use of additional NLWs during military operations. In addition, some consideration will be given to how we, as members of the Canadian Forces, can fine tune the military machine so that NLWs are more easily introduced as part of the Use of Force Model. There will be a requirement to adjust our thinking and how we conduct operations, but it is my contention that we have no choice in the matter. NLWs are here to stay and they will become part of our military identity. This will be but the latest

change that we as professional soldiers must endure, if we are to remain current and effective compared to our allies around the world. This essay will conclude by recommending that the Taser be made available to CF Military Police officers. Once a formal part of the force continuum, the Taser will be available to CF personnel conducting Three-Block-War operations abroad. This will require education and training if the CF is to integrate NLWs and function at a level expected by the people of Canada.

As a point of clarification, this essay will focus primarily on the use of NLWs within an operational environment. It will not examine the use of NLWs in a Canadian domestic law enforcement role, even though it is recognized that certain existing law enforcement NLWs are equally suitable as non-deadly force options in a military situation. And finally, this essay will briefly mentioned but not address those NLWs which render equipment or material ineffective or unserviceable. This essay will focus primarily with those NLWs which directly impact human beings.

Definitions and Terminology

"The really ultra-smart weapon
is not the one released furthest from its target,
nor the one we can use to track and disable at a distance.
It is the one that prevents the use of all others." [7]

Before we can delve into a discussion of the legal and ethical questions which arise from the introduction of NLWs into our military arsenal, it is critical that a basic level of understanding about what is and what is not a NLW, some of the terminology which is currently being used to describe NLWs, what is the National Use of Force Model, and where NLWs fit into this model.

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7. Leech, John, Asymmetries of Conflict - War Without Death, Frank Cass Publishers, Portland Oregon, 2002, 43

The first step is a basic definition. The *US Department of Defence* defines non-lethal weapons as follows:

"3.1 Weapons that are explicitly designed and employed so as to incapacitate personnel or material, while minimizing fatalities and undesired damage to property and environment.
3.1.1 Unlike conventional lethal weapons that destroy their targets principally through blast, penetration and fragmentation, non-lethal weapons employ means other than gross physical destruction to prevent the target from functioning.
3.1.2 Non-lethal weapons are intended to have one, or both, of the following characteristics:
3.1.2.1 They have relatively reversible effects on personnel or materiel.
3.1.2.2 They affect objects differently within their area of Influence." [8]

The author John Leech provides another definition of NLWs, as "discriminate weapons that are explicitly designed and used to incapacitate personnel or materiel, while minimizing fatalities and undesired damage to property and environment. They should have reversible effects and be able to discriminate between targets and non-targets in the weapon's area of impact." [9]

Both definitions use the term 'minimizing fatalities' to acknowledge the fact that deaths may occur but the true objective is not the application of deadly force. As soon as the definition allows for a fatality, then should it not, by definition, be excluded from the category of 'non-lethal' weapons? The definition presented by John Leech goes a little bit further than the *US Department of Defense* definition by bringing the aspect of discrimination into play. This is a critical component in trying to define NLWs as the

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8. United States of America, Department of Defense Directive, Policy for Non-Lethal Weapons, Number 3000.3, July 9, 1996, p. 2, available from http://dtic.mil/whs/directives/corres/pdf/d30003_070996/d30003p.pdf; Internet; accessed on 2 April 2006

9. John Leech, Asymmetries … P. 172 in Nick Lewer, "Non-Lethal Weapons: A New Dimension,' Bulletin of Arms Control, Centre for Defence Studies, King's College London, 3 September 1996

ability to properly control the application of force is the first step in trying to achieve the non-lethal status of a NLW. As will be presented shortly, some NLWs can have permanent effects, some effects wear-off, and some effects will require immediate medical attention. Some NLWs have the ability to set the level of intensity, from minor to life-threatening effects. Some NLWs are designed to target one individual; others are designed as area weapons. These definitions, however, are too detailed for a series of new technological weapons which are as different from each other as individual snowflakes. Every day, new advances in technology and science are examined for an application to warfare. Therefore, the definition must be generic enough to capture all the NLWs available today, and those which will be available tomorrow.

The next issue to address is the term NLWs itself. When people hear the term non-lethal weapon, many believe that technology has finally provided a weapon which is one hundred percent non-lethal. All military conflicts are inherently dangerous and there will always be an aspect of lethality in any military operation. Even if concerted efforts are taken to prevent fatalities, no one can ever guarantee that everything will proceed according to plan. We cannot afford to fall into the trap in believing that because there is no such thing as a true non-lethal weapon. However, when you look at any weapon, the degree of lethality will always depend on the intention of the soldier, and how that soldier uses the specific weapon.

However, just because weapons can be misused is no reason to ban them from military use. The author John Alexander, in his book *Future War*, provides the following example to demonstrate the fact that no matter which weapon is used, it all comes down to the intent of the user. "The North Koreans are reported to employ a simple but

effective method for obtaining information … they use a hammer to smash a joint on the prisoner's finger … The argument has nothing to do with non-lethal weapons, but rather, the intent of the perpetrator." [10] There is no difference between a baton and a rubber bullet used in crowd control situation, if both weapons are used improperly. If the result is death, then is there really a difference? It all comes down to the decision of the soldier as to how and when the weapon will be used.

Now that we've examined the definition and terms related to NLW, the next issue to address is the public's understanding of NLWs. We would like to have a weapon system which can safely incapacitate the enemy, while leaving non-combatants free of the system's effects. In John Alexander's *Future War*, he addresses this fallacy when he discusses the variables involved, "There is no magic dust or chemical dart that will instantly put people to sleep and then allow them to recover fully … While there are fast-acting drugs, all pharmaceutical reactions with humans are based on many complex factors, including body weight and physical condition." [11]

Perhaps, that is why a number of different terms have started to surface. Terms which could replace 'NLW', with those which attempt to better describe the outcome. In his book *Non-Lethal Weapons as Legitimizing Forces*, Brian Rappert presents four terms which are being used to refer to NLWs, specifically, less-lethal, worse-than-lethal, soft-kill, and pre-kill. The use of the term 'less-lethal' weapon may provide some legal liability protection in the event death occurs from the use of such a weapon. 'Worse-

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10. Alexander, John, Future War: Non-Lethal Weapons in Twenty-First-Century Warfare, St. Martin's Press, New York, 1999, 186

11. Alexander, John, Future War: Non-Lethal Weapons in Twenty-First-Century Warfare, St. Martin's Press, New York, 1999, p. 77

than-lethal' is used to describe a weapon which results in serious and permanent disabilities, and 'soft-kill' refers to the use of area weapons which have the potential to kill. The term 'pre-lethal' is used to denote weapons which are used to incapacitate the enemy before a conventional weapon is used to kill them. [12]

These new terms do not bring anything to this discussion. In fact, the only thing they do is create more confusion. How can something be called 'less-lethal'? This term implies that a degree of lethality exists. Perhaps 'less-than-lethal' would be more appropriate? The terms 'worse-than-lethal' and 'soft-kill' actually sounds worse that lethal. Finally, the description of the term 'pre-lethal' is so wrong that it raises a serious question. If the 'pre-lethal' weapon is used to incapacitate an opponent before a conventional weapon is used to kill them, then why would it be necessary to kill that opponent when they are already incapacitated? According to the *Protocol Additional to the Geneva Convention of 1949, and Relating to the Protection of Victims of International Armed Conflicts, (Protocol I) – 1977*, Article 41, "A person who is recognized or who, in the circumstances should be recognized to be *hors de combat* shall not be made the object of attack." According to paragraph 2 of the same article,

> A person is *hors de combat* if:
> (a) he is in the power of an adverse Party;
> (b) he clearly expresses an intention to surrender; or
> (c) he has been rendered unconscious or is otherwise incapacitated by wounds or sickness, and therefore is incapable of defending himself;
> provided that in any of these cases he abstains from any hostile act and does not attempt to escape. [13]

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12. Rappert, Brian, Non-Lethal Weapons as Legitimizing Forces? Technology, Politics and the management of Conflict, Frank Cass Publishers, London, 2003, 17

13. Protocol Additional to the Geneva Convention of 1949, and Relating to the Protection of Victims of International Armed Conflicts, (Protocol I) – 1977, Article 41, 148

This concern is supported by John Alexander in his book, *Future War: Non-Lethal Weapons in Twenty-First-Century Warfare* when he states, "… there are equally thorny administrative legal problems. One that has been raised contends that if lethal weapons are employed when non-lethal ones are available, it might constitute excessive force." [14]

From this article, it would appear that the opponent, once incapacitated, is hors de combat and therefore entitled to be protected from an attack. One can argue that there are obviously varying degrees of incapacitation, from temporary blindness from a flash grenade, to the use of a NLW which causes the skin to feel like it's on fire, or another which causes vomiting and nausea. The inappropriateness of the term pre-lethal, clearly demonstrates how difficult it is to try to categorize these new weapons and weapon systems into one, all-inclusive category. In order to further demonstrate this fact, an examination of the various types of NLWs currently available or being researched is required.

It is important to understand just how vast this relatively new area of warfare has become. Only by understanding the different technology behind the numerous types of NLWs, can we begin to appreciate just how difficult it will be to try to categorize these weapons, to educate the Canadian public, obtain their support in using NLWs, conduct proper training for our soldiers, and write clear doctrine to better control their use. There are a variety of different types of NLWs, based on a combination of technology and science. "Unlike conventional weapons systems, with which most military people have experience, non-lethal weapons incorporate an extremely wide variety of technologies. Generically, they cover chemistry, biology, physics, electrical engineering,

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14. Alexander, John, Future War: Non-Lethal Weapons in Twenty-First-Century Warfare, St. Martin's Press, New York, 1999, 197

acoustics, and information technology." [15] The following paragraph provides a brief look at some of the different NLWs, either operational or in the development stages, and a general explanation as to how they work. The categories of modern NLWs include the following:

- Kinetic or impact munitions. This category includes rubber bullets and batons;
- Mechanical. This category targets the mobility of individuals and can include entanglers, immobilizers (foam), and physical barriers;
- Chemical. An example of this type of incapacitating agent includes mustard gas. "Highly irritating to the eyes, it quickly causes conjunctivitis and blindness. If inhaled, it attacks the respiratory tract and lungs, causing pulmonary edema;" [16]
- Electroshock. The Taser, also known as a Conducted Energy Device (CED), is one of the most successful NLWs developed. The Taser "is a high-voltage, low amperage weapon. Powered by a nine-volt battery, it delivers a 25,000-volt shock that causes loss of neuromuscular control; [17]
- Acoustic. (infrasound waves) One of the advantages of acoustic systems is that by controlling the frequency and / or wavelength, you can control the amount of force delivered. "Tunable systems can be employed initially at low levels … intensity can be increased until compliance, voluntary or otherwise, is

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15. Alexander, John, Future War: Non-Lethal Weapons in Twenty-First-Century Warfare, St. Martin's Press, New York, 1999, 57

16. The Columbia Encyclopedia, Sixth Edition, Copyright 2006 Columbia University Press, available from http://www.encyclopedia.com/html/m/mustartg.asp; Internet; accessed on 8 April 2006

17. Alexander, John, Future War: Non-Lethal Weapons in Twenty-First-Century Warfare, St. Martin's Press, New York, 1999, 67

obtained." [18] The ability to control the intensity makes it attractive for military operational use. Brian Rappert is not convinced that acoustics can be an effective NLW. In his book *Non-Lethal Weapons as Legitimizing Forces*, he states that although they can be annoying, they will not cause incapacitation because "the level required for such effects can only realistically be achieved in a sound chamber. While low-audio sounds can produce intolerable responses, the necessary levels would almost certainly cause long-term hearing loss. The laws of nature and the ease of possible counter-measures mean acoustic weapons are of limited potential as non-lethal weapons." [19]

- Lasers. This category includes tactical and dazzling lasers;
- Optical Munitions. This category targets the sight of your opponent and could include visible light radiators, blinding light, and strobe lights which can induce epileptic seizures;
- Microwave. One of the tactical directed-energy systems (DES) which has received some recent attention is the Active Denial System. A significant advantage to this system is the fact that it has a greater range than conventional weapons, and was designed to be non-lethal. The Active Denial System "projects a focused beam of millimeter waves to induce an intolerable heating sensation on an adversary's skin, repelling the individual without causing injury." In addition, "The beam does not cause injury because of the shallow

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18. Alexander, John, Future War: Non-Lethal Weapons in Twenty-First-Century Warfare, St. Martin's Press, New York, 1999, 96

19. Rappert, Brian, Non-Lethal Weapons as Legitimizing Forces? Technology, Politics and the Management of Conflict, Frank Cass Publishers, London, 2003, 55

penetration depth of energy at this wavelength … effective because it takes advantage of an innate instinctive response to escape harm." [20] John Alexander sees the great potential for DES and in his book, has predicted that directed-energy systems "will change the face of the battlefield forever." [21]

- Biological. The weapons from this category would fall under the international laws associated with the *Biological and Toxin Weapons Convention Implementation Act - 2002*. An example from this category would include infectious diseases like anthrax; and
- Psychological. This category includes any action taken to influence the normal functions of the mind, either an altering of the perception of reality or a debilitating effect.

This list is not all inclusive, but serves to demonstrate the wide variety of NLWs based on technology and science. [22] There are operational NLWs, those undergoing classified trials, and those still under development. The exact status of any initiative cannot be ascertained until it is ready for use. It is important to take a closer look at the last category, as this new area is just beginning to witness serious advances.

In Timothy Thomas' article *The Mind Has No Firewall*, he quotes N. Anisimov of the Moscow Anti-Psychotronic Center, who has coined the term 'psycho-terrorism.'

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20. United States Air Force Fact Sheet, Active Denial System, Air Force Research Laboratory, Office of Public Affairs, 3550 Aberdeen Ave, SE Kirtland AFB, NM 87117-5776, September 2005, p. 1, available from http://www.de.afrl.af.mil/; Internet; accessed September 2005

21. Alexander, John, Future War: Non-Lethal Weapons in Twenty-First-Century Warfare, St. Martin's Press, New York, 1999, 59

22. Rappert, Brian, Non-Lethal Weapons as Legitimizing Forces? Technology, Politics and the Management of Conflict, Frank Cass Publishers, London, 2003, 52

According to Anisimov, "psychotronic weapons are those that act to 'take away a part of the information which is stored in a man's brain. It is sent to a computer, which reworks it to the level needed for those who need to control the man, and the modified information is then reinserted into the brain.' These weapons are used against the mind to induce hallucinations, sickness, and mutations in human cells, 'zombification,' or even death." [23] Is this realistic or fantasy? Thirty years ago, the idea of super computers and the internet would have been considered fantasy. At the least, it does provide an insight into possible avenues being examined for the latest technological advantage.

According to Timothy Thomas, a Russian army Major I. Chernishev, writing in the military journal *Orienteer* in February 1997, identifies the term Psychotropics, which is defined as "medical preparations used to induce a trance, euphoria, or depression. Referred to as 'slow-acting mines,' they could be slipped into the food of a politician or into the water supply of an entire city. Symptoms include headaches, noises, voices or commands in the brain, dizziness, pain in the abdominal cavities, cardiac arrhythmia, or even the destruction of the cardiovascular system." [24]

This new area is particularly frightening because if an opponent can alter the perceptions of our soldiers, it is conceivable that our soldiers could be manipulated into acting against the best interest of our country. Timothy Thomas makes the following prediction. "In reality, the game is about protecting or affecting signals, waves, and impulses that can influence the data-processing elements of systems, computers, or

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23. Thomas, Timothy L., The Mind Has No Firewall, Parameters, US Army War College Quarterly – Spring 1998, p. 88

24. Thomas, Timothy L., The Mind Has No Firewall, Parameters, US Army War College Quarterly – Spring 1998, p. 89

people. We are potentially the biggest victims of information warfare, because we have neglected to protect ourselves." [25] Is this propaganda or is there some truth behind this idea? If we could look into all the secret laboratories around the world, perhaps we could determine in what areas the current research is being conducted.

It would be a safe bet that new efforts are being directed towards nanotechnology. According to the internet site Wikipedia, nanotechnology "is any technology which exploits phenomena and structures that can only occur at the nanometer scale, which is the scale of several atoms and small molecules." [26] The future belongs to nanotechnology, as it might be impossible to counter things you can't even see.

There is another category of NLWs which is directed against resources and equipment. As explained in the introduction, this paper will not address the implications of using these NLWs, however, it is important to recognize the significant contribution that this side of the equation could bring to the battle space. Some of the areas of interest for this category of NLWs include:

- Hydrogen Embrittlement. This effort renders the surface area of equipment susceptible to structural failure;
- Combustion Modifiers. These modifiers are designed to choke internal combustion engines;
- Super Caustics. This substance, when applied or introduced to military weapons or war machines, will destroy the internal components;

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25. Thomas, Timothy L., The Mind Has No Firewall, Parameters, US Army War College Quarterly – Spring 1998, p. 90

26. Nanotechnology, available from http://en.wikipedia.org/wiki/Nanotechnology; Internet; accessed 23 April 2006

- Super Polymers. Polymers are introduced into moving components and renders the equipment ineffective;
- High powered microwaves. These microwaves can disrupt, scramble or jam electronic components;
- Computer viruses. The goal is to introduce computer viruses into the computer network of your opponent. This could include military as well as diplomatic, information, or economic systems. [27]

If you can render equipment such as computer networks, global positioning system, and transportation platforms unserviceable, then your opponents would be at a significant disadvantage against a fully integrated, hi-tech, and mobile force.

Background

The first weapon attempted to be formally banned from the field of battle was the crossbow. According to Robert Stacey, in the book *The Laws of War*, "The church did show some minor concern with particular weaponry. Several efforts were made in the twelfth century, for example, to ban bows of all sorts, especially crossbows … By the fourteenth century, when gunpowder was introduced into European warfare, the church had abandoned altogether the efforts to discriminate between weaponry, not to revive it until the twentieth century and the advent of the nuclear age." [28]

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27. Morehouse, David, Nonlethal Weapons, War Without Death, Praeger Publishers, Westport, CT, 1996

28. Stacey, Robert C., The Age of Chivalry, in The Laws of War: Constraints on Warfare in the Western World, eds Michael Howard, George J. Andreopoulos, and Mark R. Shulman, Yale University Press, 1994, 30

In 1500, the "*Corpus juris canonici*" tried to ban the use of darts and catapults. [29] Were the efforts to ban certain weapons initiated because they were perceived as more brutal than others, or was it that they were just something new? Were people scared of these weapons because there was a 'new technology' aspect about them? Either way, efforts to ban crossbows, darts, and catapults and other weapons over the years, have not been that successful. With no authoritative body able to enforce these bans in the past, and the individual soldier free to use weapons of his/her choice during a battle, these historical efforts to ban specific weapons simply did not work.

The lethality of conventional weapons systems, from the incendiary bombs dropped on Japanese cities during WWII to the Precision Guided Munitions – bunker busters used during Gulf War II, have had devastating effects. There is no doubt that the massive destructive power of these weapons has fueled the desire of many to seek alternative ways of incapacitating the enemy, without having to resort to the use of deadly force. This is not to say that NLWs will replace the devastating weapons in today's military arsenal, but simply provide another option to military commanders. Considering the complex situations our soldiers will be facing in the Three Block War of the future, they deserve nothing less than the tools available to help resolve a situation with the minimum amount of loss of life and serious injury as possible.

The idea of incapacitating an opponent on the field of battle is not something new. There have been numerous examples throughout history of NLWs being used during military conflict to achieve an advantage over an opponent. Granted, the technology and

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29. van der Wolf, Rene, and Willem-Jan van der Wolf. Laws of War and International Law. Nijmegen, The Netherlands: Wolf Legal Publisher, 2002. Chapter 1, History of Laws and Customs of War, p. 11

the sophistication of the methods have evolved over time when you compare the earlier use of NLWs to those used today, but that is to be expected. What has not changed is the human body's susceptibility to external influences. Years ago, the technology may not have been available to target a specific vulnerability, however we see today in the new NLWs, a highly technical and scientific approach to the incapacitation of man.

In his book *Future War*, John Alexander provides the reader with some historical background information which provides a sample of the historical uses of NLWs. His first example was the use of chemical weapons, "over 2,000 years ago, when the Chinese used ground pepper to blind opposing troops temporarily. In 428 B.C., the Spartans used fumes from sulfur and pitch, and later "Greek Fire" was employed to suffocate enemy soldiers." [30]

Mustard gas, which can cause severe blistering even in small quantities, was first used by Germans in warfare against the British at Ypres, Belgium, in July 1917. [31] Its' use claimed a heavy toll of casualties, and although it can be fatal, procedures were developed to limit the exposure which, over a short period of time, resulted in significantly less casualties.

From January to March of 1995, approximately 6,200 UN peacekeeping troops were evacuated from Somalia. Operation United Shield was the mission to cover the extraction of those UN troops. "For the first time in military operation - riot control excepted - the U.S. Marines publicly announced that they had been issued non-lethal

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30. Alexander, John, Future War: Non-Lethal Weapons in Twenty-First-Century Warfare, St. Martin's Press, New York, 1999, p. 77

31. The Columbia Encyclopedia, Sixth Edition, Copyright 2006 Columbia University Press, available from http://www.encyclopedia.com/html/m/mustartg.asp; Internet; accessed on 8 April 2006

weapons. Though rudimentary and limited in number, it was the first-ever deployment of these systems and posed the first real test in the field." [32] Although not specifically identified, the Marines could have simply been issued Tasers.

In the late 1960s, the British developed what could be considered a low kinetic impact round. The initial projectile was a wooden round, but "By 1970, the British developed rubber and plastic bullets for use on the streets of west Belfast in Northern Ireland." [33] The wooden round was replaced with a rubber round when the wooden projectile struck a child in the head and killed him.

In 1995, the Chinese displayed the ZM-87 Portable Laser Disturber. It is a laser type NLW, described "as being designed to dazzle and blind up to ranges of 3,000 meters. The ZM-87 was being made available to armies around the world." [34] This is the natural progression of a flash grenade, with a significantly extended range and the ability to affect multiple targets.

During the Soviet occupation of Afghanistan, Soviet forces used a substance called a pyrophoric tar, as an area denial weapon. When placed on the ground, the pyrophoric tar remains dormant until the substance is disturbed. "Once the sealant breaks from pressure, air combines with the pyrophoric agent and flames erupt." [35] This is a pretty effective NLW which is inactive until it is disturbed. In this case, the NLW is used

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32. Alexander, John, Future War: Non-Lethal Weapons in Twenty-First-Century Warfare, St. Martin's Press, New York, 1999, 59

33. Alexander, John, Future War: Non-Lethal Weapons in Twenty-First-Century Warfare, St. Martin's Press, New York, 1999, 89

34. Alexander, John, Future War: Non-Lethal Weapons in Twenty-First-Century Warfare, St. Martin's Press, New York, 1999 in N. Cook, "Chinese Laser Blinder Weapons for Export," Jane's Defence Weekly, 27 May 1995, 61

35. Alexander, John, Future War: Non-Lethal Weapons in Twenty-First-Century Warfare, St. Martin's Press, New York, 1999, 79

as an area denial weapon and it is the threat of the flames which produces the deterrence effect. It would be interesting to learn how this substance is removed once hostilities cease, as failure to remove this substance safely could pose a problem following the cessation of hostilities.

Shortly after 23 October 2002, Russian Special Forces using a supposedly non-lethal gas raided a theatre where over 900 hostages were being held by armed Chechen men. The decision to resolve this hostage situation with this NLW resulted in the death of 42 terrorists, and 130 hostages. Following a review of the situation, it was determined that the Russian government had failed to advise the medical personnel which specific gas had been used during the raid. In the article *Russian Hostage Rescue Shows the Danger of "Non-lethal" Weapons* by Margaret McLean and S.L. Bachman, they raise a critical point regarding the responsibility of those employing NLWs to take proper action after the weapon has been used. In the article they state, "A weapon may not kill when used to defuse a disaster peaceably, but it could kill later if management of the aftermath is careless." [36]

Was the Russian government trying to protect the tactics used by the Special Forces or was this simply an honest mistake? Either way, the deaths of the majority of the hostages can be directly attributable to the decision of the Russian government in delaying the release of the information. This is a perfect example of how a stressful situation, which received world media coverage, went terribly wrong, and all that people

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36. McLean, Margaret, Dr., and Bachman, S.L. Russian Hostage Rescue Shows the Danger of "non-lethal" Weapons, Markkula Center for Applied Ethics, available from http://www.scu.edu/ehtics/publications/ethicalperspectives/nonlethal.html; Internet; accessed on 22 January 2006, p. 2

can remember is that the Russian special forces used a gas which was supposed to put everyone to sleep, and ended up killing 130 innocent civilians.

The use of NLWs is not something new to warfare. History has shown us examples where new weapons have been effectively used and at least one example where the results have been disastrous. We must not rush to use new NLWs in warfare until a thorough examination of how the weapon can best be employed can be conducted.

Legal

There seems to be a contradiction in the spirit of the law regarding the use of NLWs. It stems from the international treaties and conventions that the majority of civilized countries have signed and agreed to when conducting military operations. The existing international treaties are insufficient to support and provide guidance to nations which currently use or are considering using some of the new Non-lethal weapons. The manner in which some Non-lethal weapons function may render an opponent incapacitated, but will result in the infliction of some pain and suffering. Even conventional weapons used to kill opponents on the battlefield may inflict serious pain and suffering. So it comes down to the question, is it not preferable to use a Non-lethal weapon which will incapacitate your opponent, but because of the manner in which it works will result in causing pain and suffering? Even if this is in direct conflict with the Hague Convention (IV)?

In his article *Warriors, Obedience and the Rule of Law*, Colonel Kenneth Watkin, CD, states, "For soldiers in Canada's Army being a warrior must mean being a

professional soldier subject to the directions and values of the country." [37] It is the international agreements Canada has agreed to, and the values we hold as Canadians which must shape our response during times of hostilities. This section of the paper will examine the legal agreements and treaties, while the following section will deal with the ethical guidelines. Together, they will enable most soldiers to respond appropriately in times of stress.

The introduction of any new weapon system has always resulted in an impact assessment by various authoritative bodies. Military authorities look at the advantages and disadvantages of the weapon system to better prepare for the next encounter. Political authorities look at how this weapon system can be used to achieve their national objectives, and assess the international reaction to its use. Legal authorities examine its impact on existing laws and treaties, and what issues must be addressed.

If the legal review determines that the new weapon system contravenes the regulations within international treaties, or if human rights groups determine that the new weapon system inflicts unnecessary suffering, then the process to restrict the use of that weapon system in all military conflicts can begin at the international level. But efforts to limit or ban the use of specific types of weapons because they were too violent or destructive, is not a simple process and it is not something new. It has been ongoing since the early 12 Century, when the church tried to ban the crossbow.

There is an advantage in examining the historical efforts of powerful nations and the international community to curtail weapons which cross the line of what is considered an acceptable level of conduct for civilized nations. The growing tide of support to limit

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37. Watkins, Kenneth, Colonel, CD, The Army Doctrine and Training Bulletin, Volume 3, No 4/Volume 4, No 1, 27

or ban weapons can be followed from generation to generation. The Canadian Forces manual, *Directorate of Law Training*, *Collection of Documents on the Law of Armed Conflict, 2005 Edition*, provides a historical review of national and international efforts to codify the Law of Armed Conflict. An examination of some of the more relevant conventions will demonstrate the concern of civilized nations over the past 150 years, in limiting the types of weapons which could be used during wars, or the manner in which the weapon was used.

The document, *The Lieber Code – Instructions for the Government of Armies of the United States in the Field*, was signed by President Lincoln in 1863. This was the first attempt at codifying the law of armed conflict. Article 16 specifically addresses the issue of the infliction of suffering as follows, "Military necessity does not admit of cruelty – that is, the infliction of suffering or wounding except in fight, nor of torture to extort confessions." In addition, Article 44 addresses the punishment for prohibited acts of wanton violence, "A soldier, officer or private, in the act of committing such violence, and disobeying a superior ordering him to abstain from it, may be lawfully killed on the spot by such superior." [38] Granted, that this document was written in 1863 specifically for the United States Armies, but it marks the beginning of a concentrated effort to explain the expected behavioural limits of a soldier, both from a legal and an ethical perspective.

The next significant effort to ban the use of a weapon, considered by many to cause unnecessary suffering, was in the form of an International Military Council which was convened by the Russian Government in 1868. The primary concern was the

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38. Directorate of Law Training, Collection of Documents on the Law of Armed Conflict, 2005 Edition, 4, 5

introduction and use of 'exploding bullets' and its impact on the battlefields. Their efforts resulted in the document known as '*The Declaration of St. Petersburg*.' [39] It wasn't until 1899, when the *Hague Declaration (IV,3) Concerning Expanding Bullets* was ratified. This international treaty, which required all signatories "to abstain from the use of bullets which expand or flatten easily in the human body", marked a significant milestone in the development of binding efforts to ban certain weapons world wide. [40] It was not the fact that the lethality of these weapons was greater, but more importantly, the brutality of these weapons.

The next international treaty which attempted to further restrict the use of certain weapons was the *Hague Convention (IV) Respecting the Laws and Customs of War on Land*, which was ratified in 1907. Article 23 (e) of Section II, to the Annex of the Convention states, "In addition to the prohibitions provided by special Conventions, it is especially forbidden – to employ arms, projectiles, or material calculated to cause unnecessary suffering." [41]

The next significant step forward in the international efforts to restrict the use of certain types of weapons was the *Geneva Protocol for the Prohibition of the Use of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare*, which was signed in 1925. Specifically, "Whereas the use in war of asphyxiating, poisonous or other gases, and of all analogous liquids materials or devices, has been

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39. John Alexander, Future War: Non-Lethal Weapons in Twenty-First Century Warfare, St. Martin's Press, New York, 1999, p. 195 from a quote by Nick Lewer and Steven Schofield, Non-Lethal Weapons: A Fatal Attraction? London: Zed Books, 1997

40. Directorate of Law Training, Collection of Documents on the Law of Armed Conflict, 2005 Edition. p. 12

41. Directorate of Law Training, Collection of Documents on the Law of Armed Conflict, 2005 Edition. p. 16

justly condemned by the general opinion of the civilized world … To the end that this prohibition shall be universally accepted as a part of International Law … the High Contracting Parties … agree to extend this prohibition to the use of bacteriological methods of warfare …" [42] This protocol was established in part to limit the use of weapons such as Mustard Gas, which was used during World War I.

The *Judgment of the International Military Tribunal at Nuremberg: Extracts on Crimes Against International Law* was ratified in 1946. For the first time within international law, principles were established which would define the concepts of 'War Crimes', and 'Crimes against Humanity.' War Crimes would include, "… violations of the laws or customs of war" and Crimes against Humanity would include, "… murder, extermination … and other inhumane acts committed against any civilian population." [43]

In 1949, persons taking no active part in hostilities and members of the armed forces who laid down their arms or were *hors de combat* due to illness, wounds or detention, were afforded protection through the international treaty, *Geneva Convention (IV) Relative to the Protection of Civilian Persons in Time of War*. According to Article 3 (1), "the following acts are and shall remain prohibited at any time and in any place … violence to life and person, in particular murder of all kinds, mutilation, cruel treatment and torture;" [44] This treaty brings the principle of discrimination into play. The ability to select specific military targets while avoiding any impact on non-combatants is critical.

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42. Directorate of Law Training, Collection of Documents on the Law of Armed Conflict, 2005 Edition. p 55

43. Directorate of Law Training, Collection of Documents on the Law of Armed Conflict, 2005 Edition. p 76

44. Directorate of Law Training, Collection of Documents on the Law of Armed Conflict, 2005 Edition. p 118

In 1977, *Protocol I to the Geneva Conventions of 1949, and relating to the Protection of Victims of International Armed Conflicts* was ratified. Part III, Section 1, Article 36 addresses the introduction of future weapons. It stipulates that all parties to the Geneva Conventions must ensure that the introduction of new weapons does not violate any prohibition contained within existing international treaties, "In the study, development, acquisition or adoption of a new weapon, means or method of warfare, a High Contracting Party is under an obligation to determine whether its employment would, in some or all circumstances, be prohibited by this Protocol or by any other rule of international law applicable to the High Contracting Party." [45] This article holds governments to follow the protocols previously agreed to. It is impossible however, to be able to apply previous restrictions and regulations, when the introduction of new NLWs could make those specific arguments irrelevant.

Part IV, Section I, Article 57 of the same Protocol I, addresses the responsibility of military leaders when planning operations. It is simply unacceptable to not consider the possible impact that your actions might have on non-combatants. When contemplating military action, "those who plan or decide upon an attack shall … take all feasible precautions in the choice of means and methods of attack with a view to avoiding, and in any event to minimizing, incidental loss of civilian life, injury to civilians and damage to civilian property." [46] This article places the onus of the protection of the civilian population directly with the military commander and by default

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45. Directorate of Law Training, Collection of Documents on the Law of Armed Conflict, 2005 Edition. p 147

46. Directorate of Law Training, Collection of Documents on the Law of Armed Conflict, 2005 Edition. p 151

each soldier under his or her command. Therefore the discrimination of the effects of the NLWs must be considered prior to its use.

The *Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction* was ratified in 1972. In this treaty, the goal was not to prohibit the use of specific weapons, but to prohibit the development, production and stockpiling of such weapons. "Each State Party to this Convention undertakes never in any circumstances to develop, produce, stockpile or otherwise acquire or retain microbial or other biological agents, or toxins … in quantities that have no justification for prophylactic, protective or other peaceful purposes." [47]

In early 1945, during the War in the Pacific, the commander of the 21st Bomber Command, Gen Curtis Lemay made the decision to utilize incendiary bombs on Japanese cities, in an effort to target the civilian population. According to R. Hall in his book *Case Studies in Strategic Bombardment*, "the preponderant purpose appears to have been to secure the heaviest possible morale and shock effect by widespread attack upon the Japanese civilian population." [48] And according to Bartlett Kerr's *Flames over Tokyo*, he describes the incendiary bombs in this manner, "the resulting explosion blew burning gel out of the tail of the casing and – like a miniature cannon – shot it as far as 100 feet. If the gel struck a combustible surface and was not extinguished, it started an intense and

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47. Directorate of Law Training, Collection of Documents on the Law of Armed Conflict, 2005 Edition. p 199

48. Hall, R., Case Studies in Strategic Bombardment, Air Force History Museum and Museums Program, 1998, p. 348

persistent fire." [49] When the city of Tokyo was attacked with incendiary bombs during the evening of 9 March 1945, the allies were able to destroy twenty-two industrial targets, along with over fifteen square miles of the heart of the city. Official records list the dead during that evening / early morning at 83,793, the injured at 40,918, and more than a million people rendered homeless. Today, this type of military action would result in world wide condemnation.

An improved incendiary bomb, common referred to as napalm, was used during the Vietnam War. Although it took a long time to recognize the horrible suffering caused by incendiary weapons, the *Geneva Protocol on Prohibitions or Restrictions on the Use of Incendiary Weapons (Protocol III)* was ratified in 1980. This protocol restricted the use of "any weapon or munition which is primarily designed to set fire to objects or to cause burn injury to persons through the action of flame, heat, or combination thereof, produced by a chemical reaction of a substance delivered on the target." [50]

The *Geneva Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May be Deemed to be Excessively Injurious or to Have Indiscriminate Effects*, was ratified in 1980 and was created to prohibit the use of certain types of weapons. "This convention contained three protocols at the time of ratification: *The Protocols on Non-Detectable Fragments*; *on the Use of Mines, Booby Traps and other Devices; and on the Use of Incendiary Weapons*. In October 1995, the Protocol on

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49. Hall, R., Case Studies in Strategic Bombardment, Air Force History Museum and Museums Program, 1998, p. 316

50. Directorate of Law Training, Collection of Documents on the Law of Armed Conflict, 2005 Edition. p 216

Blinding Laser Weapons known as Protocol IV was added." [51] This protocol is applicable to existing optical NLWs, and because of the permanent effects of Blinding Laser Weapons, they will be limited for use against primarily optical sensors.

From the *Lieber Code*, to the latest Protocol to the Geneva Convention, great strides have been made in formulating rules of conduct and behaviour for armed forces personnel involved in military operations. When you consider the different prohibitions which deal with the protection of non-combatants, military personnel, military personnel *hors de combat*, the prohibition of using certain types of weapons, the responsibility of military planners to avoid targeting civilians, or the imposed guidelines when introducing new weaponry to the battlefield, it is no wonder that the process of introducing NLWs into the military arsenal is and will continue to be a complex issue.

From a legal perspective, the use of any NLWs must satisfactorily address a number of specific concerns. Considering the conventions previously identified, it would seem reasonable to assume that if a specific NLW met the intent of the various conventions, then from a legal perspective, it would be acceptable to use NLWs in a military operational environment. That would mean that the NLW must not violate any existing prohibition within international treaties, it must not cause unnecessary suffering, and it must not result in the death of the civilian population. In addition, it must be used in a manner which permits those in authority to avoid and minimize incidental loss of life or injury to civilians.

What is important to distinguish is the fact that some of the prohibitions apply to civilian personnel while other prohibitions apply to military and civilian personnel alike.

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51. Directorate of Law Training, Collection of Documents on the Law of Armed Conflict, 2005 Edition. p 204

While the death of military personnel on the battlefield is expected, the death of a civilian is not. The issue of unnecessary pain and suffering applies to everyone, as does the prohibition of using certain weapons, like incendiary devices. But at what level does the suffering become unnecessary? Although avoiding any suffering should be the primary goal, how can any minor level suffering, which could include temporary blindness, vomiting, nausea etc, be considered unacceptable, when compared to the possible alternative of death? From a Canadian perspective, NLWs must function in a manner which will satisfy the legal concerns of the existing conventions and treaties. They must not cause unnecessary suffering and must be able to be discriminate in the selection of targets.

In future conflicts, Canadian soldiers will be required to respond to various situations within the Three-Block War. General Charles Kruluk, Commandant of the Marine Corps described the Three Block War as, "In one moment in time, our service members will be feeding and clothing displaced refugees, providing humanitarian assistance. In the next moment, they will be holding two warring tribes apart - conducting peacekeeping operations, and finally, they will be fighting a highly lethal mid-intensity battle - all on the same day … all within three city blocks." [52]

This is the environment that CF military personnel are operating in at the present time. In Afghanistan, Canadian troops face suicide bombings and booby traps while trying to conduct their missions. Our soldiers will be asked to provide this military, humanitarian, or urban warfare response in non-conventional battlefields. We must provide our soldiers with every available advantage. So the critical issue seems to be

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52. Krulak, Charles, General, The Three Block War: Fighting in Urban Areas, Vital Speeches of the Day, December 15, 1997, Vol 64, No 5, p. 139

whether or not our soldiers have the scale of weapons, with which they can select the appropriate response, given the specific situation.

Before examining the ethical concerns of NLWs, it is important to discuss one final issue, and that is how NLWs will be incorporated into the National Use of Force model. The National Use of Force model was endorsed by the *Canadian Association of Chiefs of Police* in November 2000, and was adopted by the Canadian Forces thereafter. It was developed as one standard for all police agencies within Canada, and provides a measured response model for CF members who may be required to use lethal force in the performance of their duty. The response options increase progressively from: "officer presence; communication, including verbal and non-verbal; physical control, including pressure points and restraining techniques; intermediate weapons, including baton and OC Spray; and lethal force." [53] The use of any force by a member of the Canadian Forces will always be examined after the fact, and the soldiers will have to explain why they chose to use non-deadly or deadly force. Therefore, the use of a NLW must be consistent with the graduated response, and identified as a non-deadly force option.

The author of *Asymmetries of Conflict*, John Leech quotes General Zinni, the former Commanding General of the US Marines Expeditionary Force in Somalia, who described the modern force continuum, from the minimum to the maximum, as:

> Deterrence
> Show of Force
> Riot Control
> Use of Non-lethal Weapons

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53. National Use of Force Model, *Military Police Technical Procedures Policy, A-SJ-100-004/AG-000*, Chap 4, Annex A, 4A1 1/1

Combination of Non-lethal and Lethal Weapons
Lethal Conflict." [54]

In every situation, the absolute minimum amount of force is always used to achieve the desired end state. Although different, the principles are the same. And this example demonstrates that the National Use of Force model, while originally designed for law enforcement purposes, is applicable to members of the Canadian Forces. The National Use of Force model in its present form, can easily accommodate the introduction of NLWs into the 'intermediate weapons' category.

Ethical

The ethical issues associated with the use of NLWs during military operations, will be examined from the Just War Theory perspective, the principles of unnecessary suffering, discrimination, treachery or perfidy, moral obligations, and the Canadian Forces. How soldiers have used weapons morally, has been the subject of countless discussions ever since soldiers have engaged in conflict. Just War Theory evolved from the question, "can the use of violence be ever morally justifiable to protect and preserve values? Are there situations or conditions where killing is a moral requirement? If killing can ever be justified, what, if any, moral restrictions should be placed?" [55]

One of the more noteworthy scholars, whose work on the morality of the use of force, was Hugo Grotius. Hugo Grotius' (1583 – 1645), was known for his Just War Theory, which "addresses the morality of the use of force … when it is right to resort to

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54. Leech, John, Asymmetries of Conflict - War Without Death, Frank Cass Publishers, Portland Oregon, 2002, p. 181

55. Just War theory, Wikipedia, available from http://en.wikipedia.org/wiki/Just_war; Internet; accessed on 22 January 2006

armed force (the concern of jus ad bellum) and what it is right to do in using such force (the concern of jus in bello)." [56] The jus in bello or 'justice in war' criteria of the Just War theory, which addresses the issues of 'military necessity,' 'discrimination,' and 'proportionality,' provides a starting point for this ethical examination.

The first concept, that of 'military necessity,' seeks to limit the destruction of targets to those vital to the pursuit of the military objective. The availability of NLWs during military operations has no impact on the aspect of military necessity. It is simply an option, one of many, available to the military commander. The use of NLWs during a given situation, and consequently the outcome of the confrontation, does not invalidate the necessity of the military action. It is the next two issues which are very applicable to the use of NLWs within a military environment.

The second concept within the jus in bello criteria of the Just War Theory is 'discrimination,' which seeks to ensure that the use of any weapon is controlled in such a manner so as not to be directed towards a non-valid target. This criterion involves the ability to control the targeting of the weapon. This is critical when confronted with combatants and non-combatants in an operational environment. Some NLWs like the Taser, have the ability to be directed against a single target while NLWs like the stun or flash grenade can be used as an area weapon against more than one target. By its very nature, this area weapon will affect everyone within a certain range, and like any other weapon available to the soldier, they must choose when it would be appropriate to use an area weapon. When choosing to use a NLW, the soldier must consider a number of

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56. Johnson, James Turner, Just Cause Revisited, Ethics and Public Policy Center, 1 September 1998, available from http://www.eppc.org/publications/pubID.1998/pub_detail.asp; Internet; accessed on 5 April 2006

factors including the threat, the situation, the proximity of non-combatants or friendly forces, the urgency of taking action, and the possibility that something might go wrong. Because some NLWs are area weapons, it is impossible for soldiers to guarantee one hundred percent discrimination, but considering they have been entrusted with making life and death decisions in the past, is there really a difference?

The final concept within the jus in bello criteria of the Just War Theory is probably the most important when dealing with NLWs. The concept of 'proportionality' seeks to minimize the level of destruction to that which is required by the military objective and no more. Allen Snyder, in his article *The Minimum Requirements for 'Just' Warfare*, defines proportionality as, "the probable 'good' to be produced by intervention must outweigh the likely 'evil' the use of force will cause." [57] This concept addresses the desire to minimize the suffering and reduce the number of deaths by choosing the least deadly weapon which can still achieve the military objective.

In his book *The Just War: An American Reflection on the Morality of War in Our Times*, Peter Temes includes the destructiveness of modern weapons in defining proportionality. He states, "the use of arms must not produce evils and disorders graver than the evil to be eliminated. The power of modern means of destruction weighs very heavily in evaluating this condition." [58] Peter Temes has shed some light on the ever increasing destructiveness of today's and tomorrow's weapons and that it will have a significant impact on the proportionality assessment of its use. The combination of the

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57. Snyder, Allen, The Minimum Requirements for 'Just' Warfare, OpEdNews.com, available from http://www.opednews.com/snyder_%20minimum_requirements_for.htm; Internet; accessed on 22 January 2006, p. 2

58. Temes, Peter S., The Just War: An American Reflection on the Morality of War in Our Times, Chicago: Ivan R. December 2003, p. 79

destructiveness and the unfamiliarity of these new weapons have created a level of fear of the unknown. If NLWs are to move beyond this uncertainty, then the public must be educated on how they work, and why it can be referred to as a non-lethal weapon.

Amy Truesdell, in her article entitled, *The Ethics of Non-Lethal Weapons*, states "if means are determined to be capable of fulfilling a mission in a less destructive and lethal fashion than other more practiced means, do we not have, as a society which upholds certain moral beliefs such as the value of human life, the responsibility to pursue the use of those means?" [59] Amy Truesdell argues that it is our moral responsibility to use weapons which will inflict the least amount of pain, and cause the least amount of deaths as possible. As members of a civilized nation, we should be striving to do nothing less. So why is it that our society is not fully supportive of NLW initiatives? Is it the high costs associated with research that would not be available for other social programs? Is it that the members of our society are not willing to support these initiatives, because there are other social priorities? Is it simply the fact that the welfare of our soldiers is not the highest priority of the Canadian public? Regardless of the reason, you can rest assured that although the public may not be interested in NLWs at this time, they will be ready to criticize the politicians and the military when something goes wrong during a military operation. If the use of a NLW by Canadian soldier causes the death of a non-combatant, then there will be criticism regarding the decision to use it. If the soldier uses a NLW which results in temporary pain but does not result in death, there will be criticism regarding unnecessary suffering, and a question regarding the availability of

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59. Truesdell, Amy, The Ethics of Non-Lethal Weapons, The Strategic and Combat Studies Institute, The Occasional, Number 24, 1996, p. 3

NLWs which inflict no pain, should have been made available. In either way, there will always be political, social, and scientific groups ready to engage in a heated discussion.

In their book *Non-Lethal Weapons: A Fatal Attraction*, the authors Nick Lewer and Steven Schofield introduce "three general principles governing the prohibition and control of weapons, the unnecessary suffering principle, the discrimination principle, and the treachery or perfidy principle." [60] As the discrimination principle is the same as provided above, only the principles of unnecessary suffering and treachery or perfidy will be discussed.

The unnecessary suffering principle prohibits soldiers from using a NLW which has been specifically designed to cause unnecessary suffering. It is against this principle in which NLWs will be ultimately judged by the Canadian public. If any NLW cannot be used without causing unnecessary suffering, then it fails to meet this principle, and there is little hope that it will be introduced as an option within the framework of the National Use of Force Model.

The treachery or perfidy principle prohibits soldiers from using NLWs in a disloyal or treacherous manner. [61] This would apply to the continued use of a NLW beyond the point in which the desired effect of the weapon has already been achieved, or setting the intensity of the effect higher than that which is required to achieve the objective. It would include NLWs in which the duration of the effect can be manually controlled by the user, or when the weapon is used repeatedly.

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60. Lewer, Nick and Schofield, Steven, Non-Lethal Weapons: A Fatal Attraction?, Zed Books Ltd, London, 1997, p. 83)

61. Lewer, Nick and Schofield, Steven, Non-Lethal Weapons: A Fatal Attraction?, Zed Books Ltd, London, 1997, p. 85

The concept of double effect addresses the fact that despite the moral responsibility and precautions taken by soldiers to minimize the lethal impact of military operations, there will always be injury and death of non-combatants on the battlefield. Michelle Maiese, in her article *Jus in Bello*, states that "The doctrine of double effect suggests that civilian casualties are justifiable so long as their deaths are not intended and merely accidental." [62] This concept will be used to justify the use of any NLWs that is both lethal and non-lethal. Take for example, a NLW which can be set at various levels. At the non-lethal setting, it can incapacitate, while at the lethal setting it could result in permanent injuries or death.

All these principles and concepts attempt to control the manner in which soldiers use weapons on the battlefield. Because any weapon can be used to kill, there is no real difference between a NLW which incapacitates an opponent, or a NLW which can kill. The ethical issue in dealing with NLWs does not concern the weapon itself, but the intention of the individual using the NLW.

For soldiers in the Canadian Forces, there are regulations which dictate the appropriate response given a specific type of situation. There are specific regulations which deal with the concepts of minimum force, and the use of deadly force. In the Canadian Forces Joint Doctrine Manual, *Use of Force in CF Operations*, the concept of minimum force is considered "related to both non-deadly and deadly force and is the minimum degree of authorized force which is necessary and reasonable in the

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62. Maiese, Michelle, Jus in Bello, Beyond Intractability, available from http://www.beyondintractability.org/essay/jus_in_bello/; Internet; accessed on 22 January 2006, p. 2

circumstances." [63] This reinforces the principle that the soldier is required to limit the use of the force to the minimum level required to achieve the objective, even when using NLWs. Therefore just because a soldier is using a NLW, does not release him from his responsibility of using the NLW in an appropriate manner. But the regulations do recognize the possibility that even if non-lethal force is applied, and there is no intention of killing or inflicting serious injury, it is still possible that someone could die or be seriously injured. *The Use of Force in CF Operations* recognizes the possibility of death in any conflict by defining non-deadly force as "that force which is not intended to cause death or serious injury." [64] Again, the critical issue when using a NLW is the intention of the soldier. Even if it is used appropriately, there is always the possibility that something wrong will happen. Regulations such as these will help establish a comfort level when the debate begins as to whether or not the Canadian Forces will introduce NLWs into the National Use of Force Model.

In June 2001, the Canadian Forces adopted the *Defence Ethics Program*. The purpose of this program is to provide CF members with training on ethical decision-making processes, integrity issues, and an expressed ethical focus. [65] Within the *Leadership in the Canadian Forces – Conceptual Foundations* manual, the ethical framework for use of force is addressed in the Values Based Leadership chapter. The recognition of "the principles of military necessity and proportionality are intended to

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63. National Defence Joint Doctrine Manual, Use of Force in CF Operations, B-GJ-005-501/FP-000, 2001-06-01, p. 1-3/10

64. National Defence Joint Doctrine Manual, Use of Force in CF Operations, B-GJ-005-501/FP-000, 2001-06-01, p. 1-3/10

65. Defence Ethics, Policy Direction, available from http://www.dnd.ca/ethics/conflict/policies_e.asp; Internet; accessed on 7 April 2006

avoid needless destruction and suffering, while the principle of non-combatant immunity is intended to protect the weak and defenceless from harm." [66]

According to the *Canadian Forces, Statement of Defence Ethics*, the first ethical principle is "respect the dignity of all persons." [67] Through discussions of ethics and morality, and through the development of the *Canadian Forces Defence Ethics Program* and the *Statement of Defence Ethics*, members of the Canadian Forces are provided with the ethical and moral perspective expected by the Canadian public. It is this framework which will provide our soldiers with the understanding of the ethical concerns involved when the use of any weapon is considered. This program of ethical discussions and training, along with the regulations discussed in the previous paragraphs will demonstrate that with proper education and weapons training, soldiers can use some NLWs in an ethically sound and moral manner. The principles of military necessity, discrimination, proportionality, unnecessary suffering, treachery or perfidy, and the concept of double effect will always be used to assess the conduct of soldiers on the battlefield. The introduction of some of the new NLWs will receive a great deal of attention, then the novelty will wear off, and some NLWs will become fully integrated as an option in the National Use of Force Model.

If there is a possibility to resolve a situation without having to resort to deadly force, should we as Canadians not be taking a greater interest in the development of suitable NLWs? Is it ethical to continue to use conventional weapons when some NLWs

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66. Department of National Defence, *Leadership in the Canadian Forces - Conceptual Foundations*, Canadian Defence Academy - Canadian Forces Leadership Institute, Canada, 2005, 22

67. Defence Ethics Program, Statement of Defence Ethics, available from http://www.dnd.ca/ethics/expectations/statement_e.asp; Internet; accessed on 25 October 2005

are available? The deployment of Canadian troops to Afghanistan, and the level of threat that our soldiers are confronted with, compared to previous peacekeeping missions, will have an impact on the Canadian public. Ultimately, the Canadian public will determine just how quickly NLWs will be made available to our troops.

Concerns

There are a number of concerns which must be addressed if the Canadian Forces decides to incorporate NLWs into the National Use of Force model. Each of the following concerns play an important role in the effectiveness in which NLWs are employed and accepted, not only by the soldiers, but by Canadian citizens, and the international community. It is necessary to examine the role of the media and how it must be used to gain Canadian public support, the importance of training the soldiers including the requirement to provide them with detailed Rules of Engagement, the pros and cons of NLW development, the positive arguments for using NLWs, the Political Obstacles to overcome, the human variables to NLW effectiveness, and the inherent misconceptions associated with introducing new NLWs. Following the examination of these issues, a number of recommendations will be brought forward to ensure that some critical concerns are addressed before the CF embraces NLWs into the National Use of Force model.

The Media.

The true nature of war has been exposed ever since the war in Vietnam, when the media broadcasted graphic images of war straight into the homes of the American public. John Alexander, in his book *Future War*, states, "The dawn of the Information Age had dramatic impact in shaping all future conflict. The reporting on the war in Vietnam was

the harbinger that brought about the distinct change." [68] What has become known as the CNN effect has forever changed how quickly world events are reported around the world. The horrors of war are no longer only visible to soldiers.

But this change was just the beginning. The introduction of the internet has linked all of us together, and almost nothing can happen without the media recording it and making it available for public consumption. Today, with the ability to transfer data and images around the world almost instantaneously, anything that happens on the battlefield will be immediately subjected to world opinion. If the issue being presented involves the use of NLWs, there should be no mistake that the manner in which the story is presented will have consequences on if and when NLWs will be used in the future. As John Alexander states, "This means that use of deadly force will be viewed and adjudicated in the court of public opinion … In the development of non-lethal weapons, one consideration must be how such weapons will be represented by the media. There may be serious trade-offs between effectiveness and visual impact." [69]

This would seem to present us with a dilemma. In order to ensure the media coverage is accurate with respect to NLWs, then it would make sense that efforts should be taken to educate members of the press on how the NLWs work and just how 'non-lethal' they are. On the other side of the coin are the security concerns associated with the NLW. Failure to safeguard the technology behind NLWs, may provide an opponent with the opportunity to develop counter measures, thereby rendering the NLW

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68. Alexander, John, Future War: Non-Lethal Weapons in Twenty-First-Century Warfare, St. Martin's Press, New York, 1999, 162

69. Alexander, John, Future War: Non-Lethal Weapons in Twenty-First-Century Warfare, St. Martin's Press, New York, 1999, 163

ineffective. Failure to adequately protect the NLW may result in that weapon being used against our own troops. Counter measures will only be valid for a specific period of time, as eventually, the technology associated with the NLW will become public knowledge and available on the internet. Once that happens, the NLW will be replaced by the latest NLW, and the cycle will continue. The Canadian Forces must make a significant effort to educate the Canadian public on the benefits and non-lethality of NLWs if the public relations struggle is to be won. We must use the media as a conduit to present accurate information regarding the capabilities and limitations of specific NLWs, and what safeguards are in place to ensure that the use of the NLW is never abused. After all, the Canadian public will have a significant role to play in the acceptance of NLWs into the CF National Use of Force Model.

Training and Rules of Engagement.

The misconceptions regarding the lethality of a Taser is a perfect example of how little is know about this NLW, eventhough it has been used by Canadian law enforcement agencies for the past five years. Law enforcement officers must undergo detailed training before they can use a Taser in a duty related event. This example demonstrates how important it is to conduct training on any NLW. The training will dispel any myths about the technology behind the weapon and will establish a level of confidence within the user. John Alexander, in his book *Future War*, remarked on the importance of training when he stated, "Part of the opposition to non-lethal weapons by troops on the ground is that they are unsure of how well the weapons systems will perform." [70] If soldiers are to use the tools of tomorrow in exercising their military might, then they must become

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70. Alexander, John, Future War: Non-Lethal Weapons in Twenty-First-Century Warfare, St. Martin's Press, New York, 1999, 183

proficient in the weapons that they use. The expression 'train with the weapons you fight with' is as applicable now as it has been in the past.

This weapon proficiency is only one part of the equation. Along with the weapon skills, there must be clear policy, doctrine, regulations, and ROEs. In his article "D*octrine is Not Enough: The Effect of Doctrine on the Behavior of Armies*", Paul Johnston provides the following definition of doctrine "… the US Army officially defines doctrine as: Fundamental principles by which the military forces or elements thereof guide their actions in support of national objectives. It is authoritative but requires judgment in application." [71]

Thus doctrine is rules based, but allows for the judgment of individual soldiers to make moral decisions based on the unique circumstances in which they find themselves. The critical issue is once the doctrine has been amended to reflect NLWs, how do we translate the written word within the doctrine, into military standard operating procedures?

The link between new weapons and the importance of military doctrine is explained by Malcolm Wiener, the chairman of an independent task force on *Non-Lethal Technologies: Military Options and Implications*. In his report, Wiener states, "The development of military doctrine must of course go hand in hand with the development of weapon systems to produce satisfactory results. Military history teaches that the time elapsing between the introduction of a weapon and its satisfactory incorporation in doctrine is typically 20 years … The pace of technological change today brooks no such

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71. Johnston, Paul, Doctrine is Not Enough: The Effect of Doctrine on the Behavior of Armies, Parameters, Vol XXX, No 3, Autumn 2000. p 30 in US Department of Defence, Joint Publication 1-02, DOD Dictionary of Military and Associated Terms, available from http://www.dtic.mil/doctrineljel/doddict/data/d/02018.html; Internet; accessed 15 February 2000

delay. It is accordingly essential that the Department of Defence establish policy, doctrine, and structure covering all aspects of non-lethal conflict." [72] These written directives must be carefully articulated. Once that has been achieved, the directives must be clearly understood. This will necessitate proper education to ensure that each individual soldier fully comprehends the authority given and the limitations imposed by the directives.

Nick Lewer, in his book *The Future of Non-Lethal Weapons*, provides an example of the breakdown in this concept when he states, "In summary, the Somalia experience in 1995 exposed a lack of continuity between the Pentagon's NLW policy, ROE and legality, doctrine and training." [73] If individual soldiers will be required to make life and death decisions under stressful circumstances, then the regulations pertaining to the use of NLWs must be so clear that the soldier does not hesitate, and has no doubt in his or her mind that the application of non-lethal force is in accordance with international regulations and treaties.

Development of NLWs.

Hi-tech companies will compete against each other to develop state of the art NLWs, in the hopes of landing a lucrative defence contract. There is however, another race that is going on which will eventually reduce the effectiveness of any new technology. The goal of this competing effort race is to market this new technology and make it available to others beyond the scope of the contract. John Alexander, in his book

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72. Wiener, Malcolm, Chairman, Non-Lethal Technologies: Military Options and Implications. Report of an Independent Task Force, Council on Foreign Relations, Inc, USA, 1995, 15

73. Lewer, Nick, The Future of Non-Lethal Weapons: Technologies, Operations, Ethics and Law, Frank Cass Publishers, London, 2002, 148

Future War, provides insight into the inherent dangers associated with new NLWs, the importance of implementing security measures to protect the information relating to this new technology, and the additional steps which must be taken after the technology has been effectively trialed. John Alexander states, "The United States has a lucrative foreign military sales program that almost guarantees that our soldiers will fight against our own systems. Therefore, to protect against this, it should be axiomatic that when development of a new weapons system is initiated, we simultaneously begin work on the countermeasures." [74]

The demand for security and protection related equipment is equally lucrative to the private sector or other militaries, and given enough money, legitimate or illegal methods will be employed to obtain access to this technology. Once the information is available to anyone willing to pay, then the possibility exists that eventually, this new technology will be used against our own soldiers. Efforts must be taken to provide our soldiers with every conceivable safeguard, because if we can have access to and use these NLWs in the operational environment, then our opponents could as well. For every new development, there will be efforts to develop countermeasures, and for every countermeasure, efforts to render these countermeasures ineffective. Necessity truly is the mother of invention, provided that there is a great deal of money to be made.

So, why not simply decide to stop playing this game. The problem is that we can't stop the development of NLWs. This train is moving forward, and we can't stop it. John Alexander explains why we have no choice when he states, "Banning research and development of technologies does not mean they won't exist, only that we will not have

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74. Alexander, John, Future War: Non-Lethal Weapons in Twenty-First-Century Warfare, St. Martin's Press, New York, 1999, 182

access to them. It is better to understand the technologies, at least from a defensive perspective, than to be surprised when they are used against us." [75] New developments in science and technology will continue to amaze us, and someone will always find a way to apply this new technology to the military. So, we continue down this road, unable to alter its course. This does not mean that we have to use them. There will be occasions when soldiers will have no choice but to use lethal force.

There have been many who argue against using NLWs, claiming that the use of these weapons will create other problems. John Alexander has identified three arguments against NLWs and calls them 'slippery slope,' 'risk of retaliation,' and 'risk of proliferation' respectively. [76] The 'slippery slope' argument contends that the availability of NLWs provides a greater sense of security for our politicians, and this false sense of security may result in sending our soldiers into dangerous situations. Once involved there may be 'mission creep,' forcing our soldiers to stay in situations well beyond what would normally have been acceptable.

The 'risk of retaliation' argument contends that given time, the technology will be available to others, and the probability exists that those same NLWs may be used against our own troops. This argument also supports the idea that it is not only important to develop NLWs, but it is equally important to develop countermeasures. Given time, the technology will become available to our opponents, and without counter measures, it will

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75. Alexander, John, Future War: Non-Lethal Weapons in Twenty-First-Century Warfare, St. Martin's Press, New York, 1999, 186

76. Alexander, John, Future War: Non-Lethal Weapons in Twenty-First-Century Warfare, St. Martin's Press, New York, 1999, 180

all come down to which side can employ the NLW first. Once the stalemate has been achieved, military forces will await the next step forward in advanced weaponry.

John Alexander's third argument is the 'risk-of-proliferation.' He argues that the availability of these NLWs to non-state organizations or the criminal element would pose a serious threat to the Canadian public. Unless the development of NLWs around the world could be curtailed, then the 'risk of proliferation' argument does not hold water. New technology is always available if someone is willing to pay for it, including non-state organizations and the criminal element. This concern is also addressed by John Leech in his book *Asymmetries of Conflict*, when he states, "What if non-lethal devices were to become generally available? How would they further the activities of terrorists, drug barons, organized crime, and even petty thieves? Would society and the guardians of law and order stand defenceless against them? Would this be a Pandora's Box to usher in a new age of lawlessness, gang wars and criminal excesses in our midst? [77]

A number of other arguments raised by Nick Lewer, include the misuse of NLWs with respect to, "biomedical concern, misuse (torture and punishment), use for political control and suppression, damage to the environment, blurring of civil and military operations, infringement of personal privacy and implications for conventions and treaties." [78] Do these arguments provide sufficient reason to support the contention that NLWs should not be developed at all, or are they simply irrelevant? At least, these issues can be considered when new NLWs are introduced into our weapons inventory. We will

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77. Leech, John, Asymmetries of Conflict – War Without Death, Frank Cass Publishers, Portland Oregon, 2002, p. 177

78. Lewer, Nick, The Future of Non-Lethal Weapons: Technologies, Operations, Ethics and Law, Frank Cass Publishers, London, 2002, 132

have to assume that our leaders have the intelligence to understand these pitfalls and can guide us through to the other side. There will always be the inappropriate use of weapons. It is up to society to impose the restrictions, and take appropriate action in the event those restrictions are violated.

Douglas Pasternak, in his article *Wonder Weapons*, raises another concern which deals not with the development of NLWs, but with the exploitation of medical research. In his article, he states, "medical researchers worry that their work on such things as the use of electromagnetic waves to stimulate hearing in the deaf or to halt seizures in epileptics might be used to develop weaponry. In fact, the military routinely has approached the National Institutes of Health for research information." [79]

Positive Issues.

Although there have been a number of valid concerns brought forward against the development of NLWs, it can just as easily be argued that there are valid arguments for the development of NLWs. It is important to examine both sides in order to fully understand the complexities of this issue. The pro NLW arguments below have been provided by the same authors who have brought forward the con arguments.

John Alexander's first argument for the development and use of NLWs is based on the fact that the international community will demand it. He states, "Technology and, more importantly, real-world situations will increase the pressure for acceptance of these

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79. Pasternak, Douglas, Wonder Weapons: The Pentagon's quest for nonlethal arms is amazing. But is it smart?, U.S. News 07/07/97, available from http://www.mindcontrolforums.com/us-news07-07-97.htm; Internet; accessed on 18 April 2006, 2

weapons systems." [80] He contends that world opinion will force nations to seek non-lethal methods to achieve their goals, particularly when NLWs exist and even if there are some fatalities, it is better than using conventional lethal weapons.

Another argument from John Alexander postulates that the use of NLWs will make it easier to return to normal relationships upon conclusion of hostilities. John Alexander argues, "By cutting down on casualties whenever possible, these weapons can assist in the enemy's acceptance of terms for termination of conflict while minimizing resistance and animosity that destabilizes the post-conflict situation." [81] It would be difficult to understand how governments around the world would not support this approach to conflict resolution, however, when any military is faced with defeat, they will use any and all weapons to change the outcome of hostilities. In an effort to bring as much attention to their cause as possible, non-state or terrorist organizations will also use lethal weapons over NLWs.

As the Canadian Military is required to perform in various circumstances within the 3 block war, specifically humanitarian, peace-keeping and peace-making, soldiers must be able to adjust their reactions based on the given circumstances. John Alexander provides one of the best arguments for the development of NLWs, when he states, "… show of force cannot be effective unless the threat to use that force can be substantiated. That leaves troops with the options of deterrence or using deadly force. We urgently need to provide military troops and law enforcement officers with options that provide a

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80. Alexander, John, Future War: Non-Lethal Weapons in Twenty-First-Century Warfare, St. Martin's Press, New York, 1999, 179

81. Alexander, John, Future War: Non-Lethal Weapons in Twenty-First-Century Warfare, St. Martin's Press, New York, 1999, 205

credible, incremental ability to ratchet up levels of force. This means development of additional NLWs." [82] He argues that we owe it to our soldiers to provide them with a multitude of options when they are placed in harms way. The obvious next step is to start taking advantage of these new NLWs. John Leech, in his book *Asymmetries of Conflict*, makes it clear when he states, "What is necessary now is the recognition that such devices are indispensable to the conflicts in which the West is likely to continue to be called upon to act, and urgently to pursue their development." [83]

Another basic fact is that NLWs are here to stay. According to Malcolm Dando, in his book *A New Form of Warfare*, he states, "… US documents cited make clear the official view that many other countries are proceeding down the same path … these new weapons will arrive and will have consequences in the real world of armed forces deployed in conflicts." [84] There is nothing to stop the development of NLWs, and steps must be taken to prepare ourselves so that these new weapons can become a part of our military capabilities.

Political Obstacles.

The rapid development of NLWs, and the possibility of something going wrong have retarded the development of national level policies and have stalled the introduction of NLWs which could provide a huge advantage to our soldiers. In their article *Nothing is so Strong as Gentleness*, Janet and Chris Morris and Colonel G.I. Wilson, U.S. Marine

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82. Alexander, John, Future War: Non-Lethal Weapons in Twenty-First-Century Warfare, St. Martin's Press, New York, 1999, 167

83. Leech, John, Asymmetries of Conflict - War Without Death, Frank Cass Publishers, Portland Oregon, 2002, p. 161

84. Dando, Malcolm, A New Form of Warfare, Redwood Books Ltd, Trowbridge, UK, 1996, p.197

Corps Reserve, state, "Secretary of Defence Donald Rumsfeld has stated that in many instances our forces are allowed to shoot to kill, but they are not allowed to use a nonlethal riot-control agent. Bureaucratic impediments dampen the development of non-lethal antipersonnel weapons, and range from arguably vestigial treaty limitations to institutional resistance to change." [85]

It is this political paralysis which prevents existing NLWs from being used by soldiers and law enforcement officers. Nick Lewer and Steven Schofield present an argument for peacekeeping, which in my opinion is equally valid for military operations in a Three Block War scenario. They state that, "The general framework for peacekeeping is based around consent, and in this policing role non-lethal weapons should be deployed as weapons of first choice before any resort to lethal force is considered. The ethos of peacekeeping by consent must be to minimize the number of casualties and the seriousness of their injuries." [86] If these NLWs are not made available, then soldiers and law enforcement officers will have fewer options and may be forced to resort to lethal means to resolve dangerous situations. Why this situation is allowed to continue is remarkable, because the use of NLWs, when compared to conventional lethal weapons, can only result in less injuries, and deaths.

Human Variables.

Mr. John Kenny, in his article *Are You Sure It's Nonlethal,* identifies one of the key challenges we face in trying to categorize NLWs by what effect they have on

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85. Morris, Janet and Chris and Wilson, Colonel G.I., Nothing is so Strong as Gentleness, UNSI Proceedings, Jul 2004 Vol 130, p. 53

86. Lewer, Nick and Schofield, Steven, Non-Lethal Weapons: A Fatal Attraction?, Zed Books Ltd, London, 1997, 129

individuals. John Kenny states, "The biggest challenge in making a weapon nonlethal is the variability of the human population. Human reactions to a particular weapon can vary with size, gender, age, attitude, and health. What may be non-lethal for one population segment could be lethal for another." [87] This variable is impossible to predict or identify. The physical condition of an individual, which may make them more susceptible to harmful effects, cannot be determined by observation alone, particularly during hostile action when the time to react is the absolute minimum. The possibility of lethality for those in a certain 'high-risk' category should not render these weapons unavailable.

Public Acceptance of NLWs.

The Taser is probably one of the most well known NLW used by law enforcement officers around the world. This NLW works by sending an electric current, which is modulated to the "current used within the human nervous system to voluntarily control muscles. The effect is to electronically jam the nervous system so that the target loses all control over movement and collapses." [88]

In an article by Joanne Kerr, entitled *RCMP Approves Taser Use Across Canada*, she reported that following a successful six-month field test in Saskatchewan, Alberta, and British Columbia, the RCMP had approved the M26 Taser for their members across the country effective November 2001. [89] The actual first use of the Taser in Canada was in Victoria BC in 2001. The use of CEDs has resulted in a significant reduction in the

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87. Kenny, John, Are You Sure It's Nonlethal, UNSI Proceedings, Apr 2001, Vol 127, 72

88. Williams, Mark, *A valuable option*, Public Service Review, PSCA International, Issue 12

89. Kerr, Joanne, RCMP Approves Taser Use Across Canada, The Gazette, Vol. 64, No. 1, 2002

risk to both the police officer and citizens. These advantages include, "less injuries to police officers while completing arrests; less injuries to persons; less use of lethal force; and less use of other force options." [90] But if the Taser is such an effective NLW, why has it not been put into use by the Canadian Forces Military Police, or made available to Canadian Forces personnel performing peacekeeping operations?

It's possible that the initial problems associated with the use of the Taser have left the public with serious doubts as to its effectiveness and lethality. There were documented cases within the United States where the Taser failed to work. According to Captain Sid Heal of the Los Angeles Sheriff's Department, "but then drugs – especially mind-altering drugs like PCP that reduce the pain threshold, and cocaine and central nervous system stimulants – gave individuals the ability to overcome the things that would debilitate a normal human being." [91] In addition, there have been reports that Tasers have resulted in the deaths of individuals in police custody, but according to Steven Tuttle, Taser International's director of government affairs, "police training programs require officers who carry Tasers to be zapped with the weapon. To date, thousands of officers have been tasered and no lasting effects or cardiac incidents have been reported." [92] Yet the fear of Tasers within the public continues. This is a perfect example of why it is so important to ensure the scientific research and studies behind a new NLW, have been thoroughly conducted.

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90. Canadian Association of Chiefs of Police, Canadian Police Research Centre Technical Report TR-01-2006 Review of Conducted Energy Devices, August 22, 2005, ii

91. Griffith, David, Electrical Storm, Police, The Law Enforcement Magazine, June 2002

92. Griffith, David, Electrical Storm, Police, The Law Enforcement Magazine, June 2002, 3

Recommendations

The ultimate goal is to gain public support for the military's use of NLWs. To do this, the CF must progress through a series of initiatives which will help to dispel the mystique surrounding NLWs. This effort is important because the initial approval of NLW will go a long way in allowing the CF to acquire NLWs. If the introduction of NLWs precedes a coordinated effort to dispel the misconceptions and the result of the use is negative, then the battle to win back public support will be that much greater.

The first step is the education of the Canadian people. They must be provided with accurate information regarding how the NLW works, the specific advantages and disadvantages of each NLW, and what short or long-term effects they can have on the human body. It is also important to explain why NLWs should be a part of the military's weapons inventory, as well as how and under what circumstances, the specific NLW will be used. The authority to use *Oleoresin Capsicum Irritant Aerosol Spray*, more commonly referred to as 'OC or Pepper Spray,' by members of the Canadian Forces Military Police, could be used as a starting point in trying to garner support for another NLWs, perhaps the Taser.

The next step in the series of initiatives is public debates. This step is important because through town hall and community meetings, it will allow misconceptions to be brought out into the open, and will provide the average citizen an opportunity to discuss their concerns with experts. The negative impact of a NLW must be compared with the negative impact of conventional weapons, some of which were specifically designed to kill. Winning public support for NLWs is so important, that without it the government will be reluctant to challenge the will of the Canadian people.

Once public support is behind the purchase of NLWs, the senior leadership, with the support of members of the legal branch, must develop the necessary policies and regulations which will guide our soldiers. These policies and regulations are essential as they will be used to develop specific ROE for operational commanders and individual soldiers.

Once support for NLWs has been attained, the next critical phase of this initiative is the conduct of proper weapons training and the development of operational tactics. Our soldiers must become proficient with NLWs, just as they are proficient with conventional weapons. The adage, train the way you fight, is totally accurate. However, they must also be educated on the fact that NLWs are just another tool in the toolbox. How they will chose to resolve a situation will depend on their thorough understanding of the capabilities and limitations of the NLW. And it is this training which will allow our soldiers to react instinctively to a threat. After all, it is the intention of the user and the manner in which the NLWs are employed which will result in either the incapacitation or the death of an opponent. However, along with the training of individual soldiers comes the responsibility of operational commanders to develop the best possible standard operating procedures for NLWs, so that our military can take full advantage of the positive aspects, while avoiding the negative aspects of the NLW.

As mentioned previously, Rules of Engagement will be developed for each unique mission. The ROEs will specify under which circumstances force can be applied. With this guidance, operational commanders and individual soldiers will be able to assess each stressful situation and determine if it is appropriate to use NLWs. We must remember that during stressful situations, individual soldiers do not have the luxury of taking time

to consider the pros and cons associated with using various weapons available to them. The NLW must be seen as just another option before deadly force is used. If it is perceived as the ultimate weapon, our soldiers may chose the NLW option when there may be insufficient time to move to a lethal option.

The next phase is one which depends solely on the availability of funding. In order for our soldiers to meet the challenges of the Three Block War, they must be equipped with the tools they require to complete their mission. Sufficient NLWs must be readily available to all soldiers. Not having sufficient numbers of NLWs defeats the purpose of having some at all. If you can't employ the weapon, because it is not readily available to you, then what's the point?

The last phase of this initiative involves the provision of information regarding the use of NLWs in an operational environment. This type of feedback, regardless of whether it is positive or negative, will be invaluable in the process of strengthening the public's resolve in supporting NLWs for the use by members of the Canadian Forces. We must accept however, that the only true test must take place on the battlefield, and only then will we be able to determine just how effective these NLWs really are.

These efforts must be taken if NLWs are going to be made available to members of the Canadian Forces during peacekeeping or peacemaking missions. The support of the Canadian citizens will determine whether or not we will see NLWs in the Canadian Forces of tomorrow.

Conclusion

There will always be individuals prepared to examine the advances achieved in science and technology for military and law enforcement applications. It is clear that

research will continue, and because of this, NLWs are here to stay. We as Canadians, must examine the advantages and disadvantages of using NLWs and make a determination as to whether or not our military should have ready access to these tools, but we must understand that it will take time to adopt these new NLWs.

One could simply argue that not enough research has been conducted on these new weapons, and because of this, there is a potential for the NLW to kill. The simple counter to this argument is that NLWs are nothing more than another weapon that a military commander and individual soldier can use to resolve a dangerous situation. If the situation warrants the application of lethal force and time permits, then why is it wrong to first try a NLW, even if in the worse case, it may cause some pain and suffering. If the pain and suffering is temporary, then the soldier has resolved the dangerous situation without having to resort to killing the opponent.

This essay has examined the definition of NLWs, has demonstrated the different technologies and principles that they are based on, and has briefly discussed the wide range of effects that these new weapons have on humans, material and equipment. It is clear that NLWs are based on various scientific principles and technological innovations, and the various degrees of effects they can produce, make it difficult to try to develop conventions or guidance on their use. The heart of the issue revolves around the conflict between the legal and ethical issues of using NLWs in an operational environment. Our first priority should be the removal of an enemy from the battlefield. If this can be done through the incapacitation of our opponent, then why are we not taking a greater interest in providing our soldiers with a method of resolving potentially dangerous situations with NLWs? If the Canadian Forces military is to embrace the new

technology associated with NLWs, then we must do our homework. We must develop a plan to obtain the support we need from the Canadian public. We must expend a great deal of effort if we are to ensure that from a technological perspective, the Canadian Forces is not left behind in the operational environment. And finally, a number of concerns which must be addressed, and a number of recommendations have been provided which might facilitate the introduction of some NLWs into the Canadian Forces weapons inventory.

In any Three Block War scenario, there will always be situations in which the use of a Taser would provide our soldiers with an effective non-deadly option; particularly when riot control measures are required. A soldier will always be held accountable for his actions on the battlefield. By giving him a NLW, which in fact is just another option, does not change his accountability. Yes, there are some NLWs which have extreme effects on the human body, some permanent. However, not all of them fit into this category. If the Canadian people support the selected use of certain NLWs for use by members of the Canadian Forces, then we can provide our soldiers with a huge advantage; one which may end up saving our soldier's life, and quite possibly our opponent's life as well. The successful use of the Taser by the RCMP and US law enforcement agencies, have proven the effectiveness of this NLW option. The next step is to make it available to the CF Military Police Branch for incorporation into the National Use of Force Model.

Although our ability to use deadly force may be considered our ultimate deterrence measure, it is important to remember that our soldiers must not be

disillusioned at the prospect of using a NLW. It is simply another option before having to resort to the application of deadly force.

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