



RESEARCH PAPER

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NATO and the challenge of non-lethal weapons¹

by Cees M. COOPS²

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I. Introduction: the emergence of Non-Lethal Weapons after the Cold War

The capability to apply lethal force *manu militari* has always been a hallmark of the military, as an instrument in the hands of their political masters to further the interests of the state. Driven by technological innovation, the means to apply lethal force and large scale destruction have been expanded tremendously over the centuries, to the extent that nation states decided that it was in their common interest to curtail or prohibit their use outright, but lethality remained as a qualifying factor. It is not surprising, therefore, that the phenomenon of Non-Lethal Weapons (NLW) was virtually non-existent during the Cold War.³

Adding NLW to the military toolbox was at least initially rather a consequence of changed political realities in the post Cold War era than a military requirement. NATO forces were tasked to undertake operations which were markedly different from the mission they were trained for when the Cold War was still on, like peacekeeping operations in the Balkans. The media were omnipresent in conflict zones, and the brutality of armed struggle was shown in real time on television. It had a negative impact on western constituencies, to the extent that negative media coverage in the case of tactical mistakes could even carry strategic consequences. Public resistance was growing against fatalities from war-like operations at the time when the so-called peace dividend was cashed, reinforcing the call for more "humane" warfare. The time was ripe to look for alternatives to lethal methods.

Civil law enforcement agencies were the main clients for NLW at the beginning of the 1990s. Looking for the potential of NLW to support a variety of military tasks in operations other than war (OOTW) was a small step, since most of the NLW already on the market had a dual use civilian/military capability. The renewed military interest in NLW stimulated their further research and development towards specific military requirements, resulting in a plethora of novel NLW. If not already on the market, they will reach the production phase within the next ten years.

Meanwhile, military tasks have expanded tremendously, and include nowadays major combat, anti- and counter terrorism, peacekeeping, peace enforcement, stability and security operations, humanitarian assistance and disaster relief, and counter insurgency operations. The conditions under which military forces operate in the emergent and still emerging security environment have changed, and the areas of operation are increasingly characterized by the presence of non-combatants. Limitation of casualties and collateral damage has become a major political requirement for the success of operations, to which the largely untapped potential of NLW could make a major contribution as they are designed to fill the gap between shouting and shooting.

Research Paper

NATO Defense College
Collège de Défense de l'OTAN
Research Division
Via Giorgio Pelosi, 1
00143 Rome – Italie

web site: www.ndc.nato.int
e-mail: research@ndc.nato.int

Imprimerie CSC Grafica
Via A. Meucci, 28
00012 Guidonia - Rome - Italie

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² Senior Researcher, NATO Defense College

³ With the exception of the use of CS gas and defoliating agents by the US in the Vietnam War, but US military interest in NLW waned during the stand-off in the Cold War. Moreover, international arms control treaties from the beginning of the 1970s prohibited or severely curtailed the possibilities of developing chemical, biological or toxin NLW

Their use is not uncontested. The aim of this article is therefore to analyze the present state of affairs as regards NLW. What is their value in modern warfare? Why are they so controversial? Why is NLW integration into NATO concepts and doctrine so dismally slow? These are the main questions that will be touched upon in the next few pages, leading to the conclusion that NATO has lost valuable time in acquiring a vital capability for its current and future operations, and should address this shortcoming as a priority.

II. The changing nature of conflict and NLW

Clausewitz once described war as an act of force to compel the enemy to do our will.⁴ With all technological advances, western powers have increasingly relied on one element of this observation: the act of physical force, to the detriment of the psychological campaign against an enemy's will. War is a contest of wills, and a correlation between coercive force and will has never been demonstrated, as Ralph L. Giddings Jr. already observed in 1971.⁵ The real object of the contest is to impose your will on the enemy, not to gain a victory by military superiority, as it is not decisive.

Contemporary writers on strategic issues like Van Creveld, Hammes, and Smith emphasize that fundamental shifts have taken place in the way we should think about war.⁶ War is evolving in conjunction with the political, economic and social changes affecting society as a whole, and change is pervasive in our present day western societies. The Westphalian nation-state is politically still the prime actor in the international arena, but has to share its once monopolistic position with a range of non-state actors. Economic integration and international trade agreements have further reduced the scope of its sovereign influence, including the unilateral use of its military power. The social fabric of our societies is being rearranged in non-traditional ways under the influence of international networks, and sub-national groupings promoting ethnic, religious and cultural ties reduce allegiance to the nation-state. In the process of further globalization, the world is re-organizing itself in a series of interconnected networks, while in contact with other networks not controlled by them.⁷

Existential wars between nation-states and defeating the enemy in a high-intensity conflict seem largely to belong to the past, but they cannot be totally excluded either, since a few potential adversaries will always retain or acquire the necessary capabilities to wage war at the mid- and high-intensity levels. It can be expected, however, that the majority of future wars will not be high tech and conventional, but rather a series of extremely complex low-intensity conflicts. Non-state actors using insurgency, terrorism and asymmetric methods have replaced regular armies. Their strategy is not aimed at superiority in the battlefield, but directly at changing the minds of enemy policy makers by using all networks

available: political, economic, social and military, under the mantra that superior political will defeat economic and political power. Campaign timing is measured in decades. The strategic shift from a military to a strategic communications campaign is accompanied by an operational shift: coalitions of the angry (your enemy is my enemy, at least temporarily) consist of many different players with a variety of backgrounds. Failed states often provide the matrix for clans, tribes, militias, criminals and families to engage in a protracted conflict with militarily superior powers. Ideologies provide the thrust to identify, recruit, indoctrinate, train, deploy, control, attack and fund.

In contemporary low-intensity warfare non-state actors often seek to compensate for military inferiority by using populations as a sanctuary, a shield, and a resource. They constantly find new ways to exploit civilian casualties and collateral damage as political, ideological and psychological weapons. The images of war are almost immediately delivered by the ubiquitous media to a global audience, and have the potential of decisively influencing public opinion before authorities have an opportunity to react or comment. Therefore, victory requires winning at the political and ideological levels by shaping the psychological, perceptual and media dimensions of the conflict. Militarily defeating the enemy will not be more important than winning the support, or at least tolerance, of the local population, according to Anthony Cordesman in his July 2006 article *Qana and the lessons for modern war*.⁸ Downplaying the ideological and political dimensions of war not only is self-defeating but also underestimates the dangers of civilian casualties and collateral damage.

The lesson is simple: coalition forces engaged in such limited wars must fight in ways that give avoiding collateral damage and civilian casualties at least as much priority as destroying the enemy.⁹ NLW emerged as an option that could play a decisive role in this new context.

III. NLW's main characteristics

The definition of NLW in the 1999 NATO policy document¹⁰ reflects the strategic significance of civilian casualties and collateral damage:

Non-Lethal Weapons are weapons which are explicitly designed and developed to incapacitate or repel personnel, with a low probability of fatality or permanent injury, or to disable equipment, with minimal undesired damage or impact on the environment.

NLW are not designed to replace lethal force (See box for Non-Lethal Technologies presently being developed or already on the market). They *are meant to complement*

⁴ Carl von Clausewitz, "On War", *Princeton University Press*, 1984

⁵ Col. R.L. Giddings, Jr. "Power, Strategy and Will", *Air University Review*, January-February 1971

⁶ M.van Creveld, "The Transformation of War", *Free Press*, New York, 1993; Col. T.X. Hammes, "The Sling and the Stone: On Warfare in the 21st Century", *Zenith Press*, St. Paul MN, 2004; Gen. Sir Rupert Smith, "The Utility of Force: The Art of War in the Modern World", *Alfred A. Knopf*, New York, 2007

⁷ Col. T.X. Hammes, *Ibidem*

⁸ A. Cordesman, "Qana and the lessons for modern war", *Center for Strategic and International Studies*, Washington DC, 31 July 2006

⁹ *Ibidem*

¹⁰ www.nato.int/docu/pr/1999/p991013e.htm

conventional weapons at NATO's disposal, as NATO policy clearly states. In situations where lethal force would be excessive and/or collateral damage unacceptable, NLW provide the commander with an opportunity to gain time before resorting to lethal force if ultimately necessary.

| Non-Lethal Technologies | |
|---------------------------|--|
| Electromagnetic | Directed energy Electromuscular incapacitation Optical disruption Electromagnetic pulses |
| Advanced materials | Anti-traction materials Encapsulating foams Riot control agents Obscurants Thermobarics Combustion modifiers/inhibitors |
| Mechanical/kinetic | Weapons/munitions Barriers Entanglements |
| Acoustic | Focused and omni-directional devices and weapons applying sound at audible and ultrasonic frequencies |
| Ancillary | Payload delivery systems |

Source: RTO SAS-060 panel

It is perhaps the most salient feature of NLW, and at the same time the least understood: they allow for creating space and time for decision making while discriminating hostile intent. Conventional weapons do not offer this kind of breathing space: after detecting a hostile target, the only safe option is to destroy it. NLW enable the commander after detecting a potential hostile target subsequently to deter, deny and defeat with non-lethal means. If warranted, he can back up his NLW with lethal force without delay at any time.

The increased flexibility created by the option of using NLW allows for breaking the cycle of increasing violence and the application of force at lower thresholds. NLW fill the capability gap between mere military presence and the application of lethal force in the continuum of force. Fluid levels of response, adapted to the situation, permit a proportionate use of force. The rheostat character of NLW offers the opportunity to reduce the level of violence and the possibility to de-escalate tensions.

However quick the Alliance was in adopting an NLW policy, it has not found its way (as of yet) into NATO concepts and doctrine. NLW were put on the scientific track under the aegis of the NATO Research and Technology Organization (RTO).

IV. NATO and Non-Lethal Weapons: A Critical Overview

a. First phase: towards a NLW policy

Early initiatives within NATO to respond to the new challenges were launched in the first half of the 1990s. Studies on the possible contributions of NLW to NATO crisis management, peacekeeping and peace support operations had already been embarked upon by the NATO Conference of National Armaments Directors as early as 1994.¹¹ Further study of the policy aspects led to the NATO Policy on Non-Lethal Weapons, issued by the North Atlantic Council on 27 September 1999.

NATO's reorientations of its aims after the Cold War, its experiences in the Balkans after the breakup of Yugoslavia, and technological advances in the last decade of the twentieth century were the main driving factors behind the Alliance's 1999 Strategic Concept, adopted at the Washington Summit meeting in December that year. The Defense Capabilities Initiative launched at the same time intended to align military capabilities with the newly anticipated security challenges.¹² Amongst the fifty-eight capabilities deemed necessary to ensure the effectiveness of future multinational operations across the full spectrum of Alliance missions in the (then) present and foreseeable security environment, NLW figured as attractive new instruments, seemingly holding the promise of fewer casualties and more humane warfare.

It is in retrospect a small miracle that NATO member states managed to agree on a NLW policy in 1999, especially when we look at the often acrimonious debate between proponents and sceptics that followed thereafter. NLW were largely terra incognita at the time: there was an odd assortment of technologies which were mostly forbidden by international conventions, and the NLW in use and newly developed in the last decade of the twentieth century were considered to be merely suited for police-style operations. The early US experiences in Haiti and Somalia, and those in the Balkans with NATO military forces engaged in peacekeeping and peace support operations seem to have been the decisive factor in crafting NATO's NLW policy. NLW held the possibility of filling the gap between vocal warnings and the use of lethal force in non-combat situations: an attractive option at a time when a general aversion to war and casualties pervaded our western societies.

b. Second phase: the roadmap for NLW

The task for NLW development set by the Defense Capabilities Initiative was assigned by the Conference of National Armaments Directors to the NATO Research and Technology Organization, which involved two of its seven Technical Panels in the effort: Studies, Analysis and Simulation (SAS) and Human Factors and Medicine (HFM).¹³ A preliminary SAS report concluded *inter alia* that *because of the unconventional nature of NLW issues the normal means by which NATO buys its equipment is inadequate to establish an initial NLW capability*, and issued a roadmap for further study. The original roadmap for the scientific

¹¹ Source : NATO Research and Technology Organization (RTO)

¹² www.nato.int/docu/pr/1999/p99s069e.htm

¹³ The DCI NLW Roadmap was developed by the RTO Systems, Analysis and Simulation Panel (SAS-E15) in November 2000, and updated in 2004 with the final report of SAS-035 panel.

approach to NLW was scheduled to last till the end of 2005. Studies were performed as planned, although as a result of delays the last study was only produced in 2007 (See box for an oversight of the RTO studies).

RTO Technical Reports on NLW

The RTO produced four technical reports, three by its SAS panel and one by its HFM panel. SAS-035, in a NATO Restricted report entitled *Non-Lethal Weapons Effectiveness Assessment*, proposed a mathematical methodology for assessing the effectiveness of NLW in specific military scenarios, noting that the lack of adequate target response data was a significant factor inhibiting its application. SAS-040, on the basis of a multinational exercise to evaluate future technologies for the period up to 2020, and in its report *Non-Lethal Weapons and Future Peace Enforcement Operations* identified five promising areas for further research: radio frequency devices, anti-traction approaches, rapid barriers, stun devices and nets. SAS-060 completed its *Non-Lethal Weapons Effectiveness Assessment: Development and Verification Study* in 2007, aimed at providing NATO with a common, agreed means for assessing NLW effectiveness by having a thorough look at the effectiveness of non-lethality. Finally, in its 2006 report *Human Effects of Non-Lethal Technologies* the Human Factors and Medicine Panel (HFM-073) concluded that information on human effects is essential to garner acceptance of NLW use by the military and the public in general, noting the absence of data, especially on the human effects of novel technologies with a tremendous potential for effectiveness. It drew attention to a general problem in studying human effects: medical organizations and medical professionals generally do not study better ways to incapacitate or repel people. The report recommended further study on the human effects of the promising NLW areas identified by the SAS-040 panel.

Source: Reports from the NATO Research and Technology Organization

Experts generally agree on the high quality of the technical output, but the scientific track as such, basically an advisory one, was not designed to cater for the integration of NLW into NATO concepts, doctrine, force planning, transformation etc. In all fairness to the scientists participating at the RTO panels, they cannot be blamed for the lack of implementation. On the contrary: their reports frequently mention the need to increase attention to legal and political issues, as well as the changing security environment and other problem areas for NLW deployment, which were strictly speaking beyond their mandates.

c. Third phase: a second roadmap?

There are several reasons why integration of NLW into NATO concepts, doctrine, force planning etc. was lagging behind in

the early years of the twentieth century:

- Cold War thinking at NATO and in its member states still lingered on in spite of the 1999 Strategic Concept, and minds occupied with missiles and battle tanks were not fertile ground for taking “surrealistic” concepts like NLW into consideration; furthermore, being but one out of 58 Defense Capabilities Initiative items, with a relatively low budgetary priority rating, the NLW profile was kept low.
- NATO had to pay attention to a large variety of other important issues: enlargement, Partnership for Peace, Mediterranean Dialogue, shrinking defense budgets, and, at a later stage, transformation, NRF, Iraq and expeditionary operations in Afghanistan;
- The attack on the Twin Towers and the subsequent war on terror declared by the US undoubtedly changed NATO strategic thinking, but in countering asymmetric warfare NLW were at least initially not considered as possible and viable options;
- The use of an incapacitating chemical to end the Chechen terrorist attack on a Moscow theatre in October 2002 heightened the already existing controversies in the debate about NLW (for details, see paragraph VII).¹⁴

Presumably not unaware of the raging debate in the aftermath of the Moscow crisis and with NLW safely on the scientific sidetrack, the Conference of National Armaments Directors was slow to pick up the lead again. In 2006 it decided to increase NLW priority by establishing a Quick Reaction Team for NLW under one of its subsidiary bodies. The Team was tasked to assess present capabilities and shortfalls, and to provide proposals for other NATO group activities. In addition to a capability review the Team recommended conduct of a policy review, to include *inter alia* a legal review, and an examination of wider considerations, such as ethical and presentational issues, Rules of Engagement, national caveats and the like: a new roadmap on NLW, formally endorsed by the North Atlantic Council, still to be implemented. When comparing the Quick Reaction Team's recommendations with the 1999 Defense Capabilities Initiative requirement for NLW as stated in DCI item EE 2(i):

The Alliance should complete work to ensure that NATO has sufficient range of capabilities for the full spectrum of crisis response operations, including: i) work on a policy for the development and use of non-lethal weapons technology in accordance with national and international law; ii) adapting weapons technologies for use in operations that have a particular emphasis on the requirement to minimize collateral damage.

it can be argued that hardly any progress was made on the conceptual track in almost a decade, and that the process of integration of NLW into NATO's concepts, strategies, doctrine, etc. is only at its inception. Only recently the Allied Command Transformation embarked upon a NLW concept development study in its working program. Of course, valuable and necessary insights have been obtained by means of the scientific track, which will undoubtedly continue

¹⁴ For a detailed analysis of the Moscow theatre siege see David P. Fidler, “The meaning of Moscow: “Non-lethal” weapons and international law in the early 21st century”, *International Review of the Red Cross*, Volume 87 Number 859, September 2005

to produce follow-up studies on the technical aspects of NLW. However, work on the major inhibitors of the integration and deployment of NLW, situated in the public, legal, and political domain, has still not started.

V. Obstacles on the road

As NLW hold the promise of less lethal force, fewer civilian casualties and less collateral damage, especially in the highly sensitive context of operations other than war (OOTW), why are they so controversial? In the relatively short period of fielding NLW, several successful operations, notably in Somalia and the Balkans, have proved that deployment of NLW in critical situations can avoid major bloodshed and reduce further escalation. As NLW seem to have a positive asymmetry for the military in operations other than war, it is essential to address the existing controversies in order to gain legitimacy and acceptance by politicians, the general public and the military alike, especially when taking into consideration the fact that the research community is continuously adding new non-lethal technologies to the already wide spectrum.

A first point to be made is related to terminology. It has been argued that the term NLW is a misnomer, and various other suggestions have been made, like less-lethal weapons, pre-lethal weapons, disabling weapons etc., but so far the new epithets have failed to stick. Other suggestions, objecting to the use of the word “weapons”, relate to the fact that the research community has developed such a wide range of NLW, which are in essence not weapons, that the term should be replaced with the word “systems”, “technologies” or “capabilities”. “Non-lethal capabilities” has indeed become an accepted term within NATO terminology, but not as a replacement for NLW. It seems, therefore, that the connotation NLW is here to stay, in spite of the inaccuracy of the term.

A second and more important point of controversy is the interpretation of the definition. The NATO definition is now widely, but not (yet) commonly accepted. The debate addresses the intended effects of NLW in contrast to the conceivable effects and outcomes when actually deployed, taking into account the context in which NLW are being used. Advocates have pointed out that NLW are by design technologically as well as ethically different from lethal weapons, but opponents have contended that difference in design does not automatically establish ethical superiority, and empirical analysis of how they are used and under which circumstances is virtually unknown, on account of lack of data.¹⁵ The limited supply of measured data and analysis is an increasing problem as a new generation of NLW comes of age. The SAS-060 working group on NLW under the umbrella of the NATO Research and Technology Organization (RTO) has recommended a clear methodology for assessing impact and performance of NLW, but establishing parameters is just the start of any analytical process. The difficult burden of proof is apparently in the camp of the advocates, but the debate seems to suffer from a high degree of artificiality. Is it fundamentally possible and required for NLW concepts to establish a well-defined level of certainty of not causing

unintended fatalities or permanent injury before being certified as non-lethal?

The main problem with this kind of discussion is that the alternative that NLW provide for lethal force is not taken as a criterion. NLW are appreciated because of their perceived characteristic feature of non-lethality, leading to the paradoxical situation that, in spite of their inherent capacity to considerably reduce fatalities and permanent injuries, their acceptance is much more controversial than that of lethal weapons.

A third complication has arisen from the way we have defined war in the past. Faced with the use of ever deadlier and more destructive weapons in interstate conflicts in the 19th and 20th centuries, international efforts to regulate and limit their use have resulted in numerous treaties and conventions, like the 1925 Geneva Protocol, the 1972 Biological and Toxin Weapons Convention and the 1993 Chemical Weapons Convention. The Law of Armed Conflict, regulating *ius in bello* on the basis of International Humanitarian Law (IHL), has set clear limitations on the use of force in case of war by means of its principles of military necessity, distinction and proportionality. Its scope has been extended gradually to armed conflicts which parties to the conflict do not regard as wars, but when faced with adversaries who do not respect these principles, sticking to the rules of the game as a one-sided commitment becomes a tall order. Al Qaida for instance has committed heinous acts in clear violation of international conventions, and papers originating from this organization indicate that it would not be shy of using further illegal means, like prohibited chemical weapons and weapons of mass destruction. It can be argued, therefore, that IHL has not (yet) evolved to the point at which the already changed nature of conflict is taken fully into consideration. The development of IHL has always been an evolutionary process, primarily driven by the conviction that it was necessary to impose restrictions on the means of warfare and the methods of their use for humanitarian reasons. A solution for dealing with any non-state entity which disqualifies itself as a party under the Law on Armed Conflict has not yet been found.

Caught in the middle are NLW: designed in line with the thrust of IHL to minimize civilian casualties and collateral damage, the main problem for their further implementation, next to lack of empirical data on their use, appears to be the slow development of IHL in accommodating the new situations on the ground. Opponents to NLW tend to take the status quo as non-negotiable: modifications in IHL can only lead to further restrictions, in their view. However, regulating non-lethality instead of curtailing lethality needs another approach, as the philosophy behind NLW was beyond imagination when the restrictive conventions were crafted. A further argument for adopting a different and more flexible approach to NLW is the rapid pace of technological development. Within the next ten years new NLW will be brought to the market for which no prior international conventions exist, like acoustic, millimetre wave, electromagnetic and kinetic weapons. If their use needs to be regulated, insisting on the status quo as regards the Conventions on Chemical Weapons and on Biological and Toxin Weapons cannot be considered as conducive to creating a favourable climate for international negotiations.

¹⁵ *Ibidem*

A fourth point in the current debate is not specific for NLW, but complicates their deployment by the military. According to international law, military forces are permitted to undertake extraterritorial law enforcement activities under certain conditions. Law enforcement is based on domestic law, which basically restricts its jurisdiction to the state's own territory: on the territory of another state domestic law can only be enforced with the consent of the other state. Peacekeeping operations on the territory of another sovereign state, either at its request or under the aegis of a Security Council Resolution under Chapter VII of the UN Charter, are considered as legitimate by international law. One of the challenges the military face is maintaining law and order in areas under their control. In the case of rioting by civilians, for instance, they are allowed under the CWC, which has several provisions regarding domestic law, to use riot control agents (RCAs, considered to be NLW), like CS gas or pepper spray for law enforcement purposes. However, it does not permit the use of RCAs against combatants, even if they use civilians as human shields or to mask attacks. In theory the situation is clear, but with unidentified combatants hiding in a civilian crowd, a multinational patrol could face an impossible situation. Dispersing the crowd is a clear objective, but how to assess the situation? Is it maintaining law and order, in which case RCAs could be used, or should the patrol wait until perhaps one of the hidden combatants opens fire, in which case the situation would qualify as armed conflict, the use of RCAs forbidden, and only lethal force remains as an option? The conundrum is further exacerbated by the different conditions under which the participants in the patrol operate: different nationals have different domestic laws, which may or may not approve of certain RCAs, and they also may have different rules of engagement as a result of national caveats. Equalizing the conditions under which NATO forces operate is in the realm of NATO's member states, but tackling the thorny issue of regulating NLW in the context of international law will be a lengthy process.

David Fidler¹⁶, in his often quoted article of 2001 in *Medicine, Conflict and Survival*, sees three possible scenarios:

- The Compliance Perspective, which does not accept that the changing nature of conflict and new technologies undermine the existing moral and legal principles embodied in international law, even if it prevents certain NLW from deployment.
- The Selective Change Perspective, which accepts that the nature of conflict have changed and will continue to change. Consequently, rules for NLW can be different from those for lethal weapons, but NLW need to be clearly defined to enable changes to be made to particular parts of international law regimes on a case by case basis.
- The Radical Change Perspective, which may have radical implications for international law, as the potential of more sophisticated and powerful NLW may alter how experts look at the morality and legality of humanitarian intervention, anticipatory self-defense and enforcement actions.

Whatever the scenario ahead of us, the emerging and partly existing international legal vacuum as regards NLW must be addressed to build international acceptance and legitimacy of NLW. NATO's 1999 policy is clear on the issue, but at the time of drafting the paragraph below the rapid development of NLW in areas beyond imagination could not be anticipated. Not even ten years old, the policy looks antiquated and in need of revision:

The research and development, procurement and employment of Non-Lethal Weapons shall always remain consistent with applicable treaties, conventions and international law, particularly the Law of Armed Conflict as well as national law and approved Rules of Engagement.

Given NATO's continued interest in NLW and the intricacies of the international legal battle ahead, member states would be well advised to jointly prepare themselves on the legal front by ironing out internal differences and harmonizing their domestic policies.

VI. NLW and Rules of Engagement

In the absence of an internationally agreed framework for their use and deployment, the setting of standards and procedures for NLW is largely a domestic affair for the leading countries in NLW research and development, notably the US, and to a lesser extent, the UK. Only a limited number of other NATO member states has shown interest in NLW, together with some PfP partner countries (mostly by participating in one of the RTO panels). The capability gap within NATO as regards NLW is widening, threatening interoperability. In joint operations it is of paramount importance that participating units are well trained and aware of the distinct peculiarities of the hardware to be deployed, and using NLW requires more than just the how-to, as their use is based on a different level in the continuum of force.

In conventional warfare, Rules of Engagement (ROE) set the limits for the recourse to deadly force, as a consequence of political considerations. Common ROE have always been a divisive issue within NATO. Even when unity of purpose led to a decision to undertake an operation, national political considerations often resulted in an array of limitations on the use of "their" forces: the infamous national caveats. Seriously complicating the task of the NATO commander to accomplish his mission, national caveats may originate from a failure by politicians to convince their constituencies of the necessity to participate fully in a certain operation. They may also be used pre-emptively, as sales arguments to convince constituencies that the risks to their troops are minimal. And yes, they may be used as a risk insurance policy, protecting not the troops but the politicians themselves from unwanted fall-out in case something goes terribly wrong and/or the fatality rate is higher than anticipated.

It may be clear that the lack of common ROE is a general problem for NATO, but the introduction of NLW tends to

¹⁶ D.P. Fidler, "Non-Lethal Weapons and International Law: Three perspectives on the Future", *Medicine, Conflict and Survival*, Vol.17 No.3, pp194-206, 2001

complicate matters further. Specific ROE for NLW need to be developed and agreed upon because the threshold for their use is lower than in the case of lethal force.¹⁷ They have to be combined with the ROE for the use of lethal force in such a way that soldiers understand and assimilate them. The commander will have a risk management tool at his disposal, but it presupposes that soldiers are well educated and trained, and therefore ROE must be classified, clear, simple, and not subject to interpretation. The political objective of lowering casualties and minimizing collateral damage in operations though the deployment of NLW can best be served by finding common denominators for ROE: a challenging task for politicians, who may find fulfilling this objective at odds with their inclination to apply national caveats to the deployment of their armed forces.

VII. NLW and the general public

Public acceptance of NLW is generally negative. Several incidents in which their use caused severe casualties linger on in public memory, and each time a Taser gun is used with fatal consequences it is widely reported in the media, reinforcing the negative perception. The worst case for NLW was of course the earlier mentioned Moscow theatre siege in October 2002, when Chechen rebels took about 900 hostages and threatened to kill them all. It was a no-win situation for the Russians. Their security forces pumped an incapacitating chemical, thought to be fentanyl, an opium derivative, into the theatre before storming the building. They killed all the terrorists, saved the majority of the hostages, but 129 of them were also killed by the fentanyl. The casualties among the hostages were due mostly to the lack of adequate medical facilities immediately after the attack, and along with congratulations on saving the lives of many hostages Moscow received harsh criticism for this omission. Although international legal experts generally agree that the use of fentanyl was legitimate in the face of an extreme law enforcement situation (assessing *inter alia* that the use of conventional weapons would only have led to the death of far more hostages), public perception was generally negative.

That something designed to be non-lethal can kill is a difficult sell to the public and the media, and NLW seem to suffer badly from this generic connotation. Indeed, NLW can kill. So can hammers and kitchen knives, but they are not marked as non-lethal by design and labelled as such. The term NLW is

an oxymoron, and non-lethality is not absolute or guaranteed. The NATO policy is clear on this point: *Non-Lethal Weapons shall not be required to have zero probability of causing fatalities or permanent injuries...*, but this part of the message is little known, and if known is poorly understood by the general public. By putting the emphasis on casualties rather than saved lives in their reporting the media are not exactly helpful in educating the uninitiated, but if our political leaders take their commitment to reducing fatalities and collateral damage in NATO's operations seriously, educating the general public on NLW to obtain their support is a *conditio sine qua non*. Strategic communications are key, but the question as to how formal organizations like NATO can influence informal networks is far from solved.

VIII. Conclusions and recommendation

An apparent lack of future vision, combined with many unexpected show stoppers, seems largely responsible for the fact that NATO's Policy on NLW is not (yet) integrated into its mainstream strategic thinking. As such it remains a stand-alone policy, running the risk of being marginalized and at times even forgotten. The policy aim stated in 1999 that

NATO planners shall ensure that the potential contribution of Non-Lethal Weapons is taken fully into account in the development of their plans.

can hardly be considered as implemented. Technological advances in NLW, growing disparities between the Allies on the possibilities of their deployment, and the changing nature of conflict indicate the need for a fast track approach for NLW integration into NATO concepts and doctrine, including a revision of its outdated policy. NLW do not provide silver bullet solutions, but their potential contribution to the recognized strategic objective and political imperative of reducing casualties and collateral damage in NATO operations should no longer be neglected.

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¹⁷ RTO Technical Report "The Human Effects of Non-Lethal Technologies", AC/323(HFM-073)TP/65, August 2006