

## Live to fight another day? Non-lethal weapons and the future of violent conflict

By Asle Toje, The Cambridge Review of International Affairs

*During the 1990s the global climate of violent conflict changed both in terms of tasks and tools. Increased demands for a non-lethal approach to violent conflict stems primarily from military forces, due to an increased focus on crisis management, but also from police forces which have voiced their concern about the need for a broader spectrum of weapons at their disposal. A strong and growing public aversion to casualties in modern warfare and civil conflicts points towards weapons that can bridge the gap between applying lethal force and doing nothing. The past decade has witnessed notable advances in non-lethal weapons technologies, which are also beginning to reflect themselves in procurement plans. However, current research is largely exploring areas uncontrolled by international law. This has caused Human Rights organisations to question the apparent benevolence of the new class of weapons.*

### A NEW SECURITY REALITY

The period of rapid systemic changes 1989-91 accelerated the shift away from static defence of territory to neo-interventionism on behalf of individuals. Likely future operations in Europe were summarised in the 1992 WEU Petersberg tasks as humanitarian and rescue operations, peacekeeping and crisis management – up to and including peacemaking. In such operations adversaries are often likely to be elusive and commingled with non-combatants. This leads to a considerable convergence of interests of the military and the police regarding the need for reliable non-lethal options.

The demise of the communist bloc has also proven to be the midwife for the birth of a long rumoured ‘revolution in military affairs’. A new generation of weapons technologies is emerging, benefiting from a synergy of technologies such as computing, telecommunications, robotics, bio-engineering and artificial intelligence.

The two trends converge in non-lethal weapons where the new fields opened by the revolution in military affairs are com-

bined with a wide spectrum of non-lethal weapons technologies ranging from electromagnetic, infra-sound and stun technologies, calming and incapacitating substances, to adhesives and corrosives. Among the emerging arsenal of non-lethal weapons are stun guns, stink bombs, electrical mines and pepper bullets. The rapid technological advances have led to procurement and deployment of non-lethal weapons, which, until recently, would have been dismissed as unreliable, impractical or outright unworkable.

### A NEW CLASS OF WEAPONS

The term “non-lethal” has the connotation of an intention neither to kill nor to permanently harm. The definition most widely used stems from the US Department of Defence and states that non-lethal weapons are “discriminate weapons that are explicitly designed and employed to incapacitate personnel or material, while minimising fatalities and undesired damage to property and the environment”. In other words “non-lethal” does not imply that such weapons cannot kill or permanently harm, just that they

are not designed to do so.

The US is currently leading the way in non-lethal weapons development and procurement. One high profile example is the Vehicle Mounted Active Denial System (VMADS). The electromagnetic weapon uses a radar dish to beam targeted microwave energy that causes a burning sensation on the skin of people up to 600 meters away. If the target moves out of the beam, the pain stops. The weapon is claimed to cause no long-term effects and can be envisioned to be used in crowd control or to encourage adversaries to withdraw from their positions.

Another apparently surprisingly effective technology stems from the appliance of revolting odours. While different odours generally cause a varying response in different cultures, researchers have isolated a number of smells that seem to transcend such differences. Based on this research, the US armed forces are currently developing a stink bomb that can be used to enforce no-go zones around sensitive military installations, but could also be used by the military to deter or repel enemy troops or hostile crowds.

Much non-lethal weapons research is dedicated to finding alternatives to explosives. One alternative is to apply super-adhesives or slippery substances for example to render bridges unusable as an alternative to bombing. During the Kosovo air campaign the US for the first time used graphite "bomblets" to short-cut power stations instead of destroying them with explosives. These experiences have no doubt been important in the development of the new so-called 'E-bomb' which experts predict will be the weapon of choice for the US in a potential confrontation between the US and Iraq. According to the New Scientist the bomb is designed to attack electronic systems rather than people and in this way paralyse its command structures. The bomb is designed to outsmart the alleged Iraqi tactic of building heavily fortified underground facilities beneath civilian structures such as

schools and hospitals.

In Europe France leads the development of non-lethal weapons. According to reports experiments are carried out on about 50 different types of non-lethal weapons including temporary blinding grenades, electrical guns, glues, incapacitating gases, nets, and soft large-calibre bullets. A top French concern is the need to develop an effective substitute for anti-personnel mines, which were banned by the 1997 Ottawa Treaty. For example, Modular Crowd Control Munitions uses the existing Claymore mine to eject rubber balls. Such mines are temporarily incapacitating at up to 15 metres, which makes it suited for perimeter defence. Mines have also been developed to release incapacitating agents such as CN and CS gas. These mines can be remotely triggered or set off by a trip wire like their lethal cousins.

Another non-lethal perimeter defence mine currently being tested is the TASER Area Denial Device. The defensive weapon is triggered by a trip wire or through the use of sensors. If activated the device fires darts which then jolt the target with a high voltage charge. A TASER side-arm is already on the market, which delivers 50,000 volts with a range of 10 meters and incapacitates by stunning the target. This weapon is currently being tested and deployed by a large number of law enforcement agencies and armed forces globally.

## NON-LETHAL WEAPONS AND THE POLICE

Internal developments have led a number of countries to have a fresh look at non-lethal weapons. Police forces around the world have used non-lethal weapons such as water cannons, rubber bullets and CS gas for a number of years. However, incidents such as the 2001 riots in Northern England, which left a large number of police officers injured, and the habitual violence at anti-globalisation rallies have highlighted the need for police

forces to be equipped with more effective non-lethal weapons. In most developed countries, if a worker is injured as a result of the failure to be issued with adequate protective equipment to do the job without risking personal injury, he or she can take legal action.

This aspect came into focus following the riots in Northern England, where officers who were injured during the riots took steps to claim compensation for injuries sustained in street fighting where they found themselves without an efficient non-lethal deterrent. In a parallel development, public acceptance of the police use of lethal force appears to be diminishing as police shootings routinely make it to the courts in a number of western countries.

Research has been carried out on a variety of non-lethal weapons and some have made it into active service. For instance, the Los Angeles Police Department uses the "Laser Dazzler" - a laser gun that fires a series of green flashes up to 400 meters that temporarily blinds the target causing disorientation. Furthermore, various "Bean bag" munitions are already in use. They are designed to knock the target down with bags of material, filled with lead. The bags are fired from conventional shotguns and are designed so as to not penetrate the body but to spread the impact of the blow over the surface area.

#### AT THE CROSSROADS OF ETHICS AND TECHNOLOGY

Although the development of non-lethal weapons is driven by a desire to minimise casualties, the emerging technologies raise important ethical questions. If non-lethal weapons become more sophisticated and powerful, their potential may alter the way we look at the morality and legality of intervention and the use of violence, by making the option of applying "non-lethal" force an attractive alternative to decision makers. By applying force

while limiting casualties, non-lethal weapons may blur the lines between political conflict, armed conflict and war, and can be applied as a continuation of 'policy by other means'.

A probably greater obstacle for the deployment on non-lethal weapons than concerns for the targets are the concerns of those who may have to trust the new technologies with their lives. Police officers and soldiers alike are understandably suspicious as to whether non-lethal weapons are as effective as their lethal equivalents. For example, when the Boston Police Commissioner suggested the introduction of "Bean bag" munitions, the local police union resisted, arguing that the new weapon was insufficiently tested.

The US armed forces have met such concerns with increased emphasis on Unmanned Vehicles (UV). Unmanned Aerial Vehicles (UAV) are currently being tested for possible missions in the future with non-lethal payloads of up to 80 kg. In cases where the physical presence of human operators cannot be left out, the worries of those who stand most to lose from trusting the new technology is in a number of cases attempted solved by moving from non-lethal to dual-use technology.

The emergence of dual use weapons, which can be switched from non-lethal to lethal or crippling effects depending on the circumstances, raises important ethical questions. One likely candidate for such a status is the VMAD microwave system where the information made public begs the question: -if the intensity of the beam is turned up, does it have the capability to cause serious injury or indeed death? The increasing popularity of the term indicates that the label 'non-lethal weapons' is also applied to weapons where it is largely misleading for public relations purposes.

Each class of non-lethal weapons raises different legal questions depending on the relevant convention governing its use. For example, biodegrading microbes that could eat away at certain types of material surfaces such as asphalt or body



armour would raise issues under the 1972 Biological Weapons Convention. Fresh attempts at regulation have also been made. The 1998 Blinding Lasers Ban initiated by the International Red Cross bans the use and transfer of any laser weapon specifically designed to cause permanent blindness. This is the first time that a weapon has been outlawed before being deployed on the battlefield since 1868, when exploding bullets were prohibited. However the international community has been slow in ratifying the treaty and grey areas persist. For example there is little agreement on whether a "tetanizing beam weapon" where a ultra-violet beam that would temporarily immobilise a person by paralysing their skeletal muscles, apparently under testing in the US, would be legal.

Joining the Red Cross and Amnesty International, Human Rights Watch (HRW) has also expressed concern about other types of non-lethal weapons under development. The organisation takes no position on non-lethal weapons *per se*, but argues that such weapons should be subject to legal and humanitarian review to ensure consistency with domestic and international humanitarian law. HRW was one of the first organisations that encouraged an open debate on the subject by questioning the military utility of these programmes given that such weapons often compensate for their lack of destructiveness by being indiscriminate and affecting civilians and military

personnel alike. Human Rights organisations warns against getting seduced by the words "non-lethal" and points to the permanent injuries that can be inflicted. However, human rights advocates have so far taken a pointedly low profile in this debate since the alternative to the non-lethal technologies is by far a greater evil.

As of yet, there is no international agreement that covers non-lethal weapons. In a situation where the technology itself offers few limits, prudent, well thought-out and rigorously adopted ethical standards are necessary. Such agreements are likely to be needed in the near future to avoid undermining other arms control agreements. As a long standing proponent for binding multilateral arms control it could be a worthy task for Norway to help prepare the groundwork towards a new regime that can help realise the positive potential in non-lethal weapons.

*The opinions and views expressed in this article are those of the author and are not necessarily those of CRIA. For further reading, the topic of ethics in foreign policy is discussed at length in the Volume 15, No. 1 issue of Cambridge Review of International Affairs and issue 17.3 of Medicine, Conflict and Survival is dedicated to the future of Non-Lethal Weapons*

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