

Stability Operations: The Role of Non-Lethal Weapons

by

Colonel Robert A. Davel
United States Army

Under the Direction of:
Colonel Carter A. Oates



United States Army War College
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Abstract

US forces remain increasingly engaged in stability operations throughout the world. Achieving the level of operational adaptability needed to perform these operations requires the Army to complement its traditional lethal capabilities with Non-Lethal Weapons (NLW). NLW enable U.S. forces to achieve strategic objectives while minimizing collateral damage both inside and out of mega-populated urban centers – such as harming non-combatants, destroying critical infrastructure, and poisoning the environment. The use of NLW is essential to stability operations. Accordingly, the DoD should develop NLW capabilities to enhance full spectrum operations. In an era of austere budgets, NLW must be affordable, effective, and suitable. NLW must provide feasible support to all services, regardless of the service's mission set and personnel. The DoD must incorporate NLW and synchronize efforts to meet our strategic and operational challenges for all forces 2025 and beyond. This SRP describes tactical, operational, and strategic applications of non-lethal weapons. It concludes with recommendations for the military's employment of non-lethal weapons in full spectrum operations.

Stability Operations: The Role of Non-Lethal Weapons

The smart warrior is the one who understands how to use a diverse arsenal of capabilities, and is not afraid to think beyond the traditional way of conducting military operations.

—General Anthony C. Zinni, USMC

America's military forces remain globally deployed and therefore face numerous challenges. The conventional linear battlefields of armies engaged in frontal clashes are long gone. Social and political changes have created a need for Non-Lethal Weapons (NLW) in the 21st century in order to maximize mission effectiveness and minimize risk to U.S. forces, coalition partners, civilians, and critical infrastructure. Non-state actors, unconventional warfare, peacekeeping, and stability operations dominate the world stage. US forces are increasingly undertaking the mission of performing stability operations throughout the world. Achieving the level of operational adaptability requires the U.S. military to build upon its foundation of offensive and defensive operations while incorporating non-traditional effects. Developing capabilities enables our forces to achieve strategic objectives while minimizing adverse effects on major urban population centers. This capability and their internal and external support environments remains essential for successful Army operations. The NLW capabilities must be affordable, adaptable, and versatile. The Army will procure NLW to effectively train, equip, and employ them in order to execute offensive, defensive, and stability operations.

Non-lethal capabilities enhance the Army's ability to achieve strategic objectives in a volatile, uncertain, complex, and ambiguous (VUCA) environment; while reducing unintended adverse effects on the civilian population. A non-lethal strategy incorporated into future operations should employ a holistic approach to development, procurement, and training resulting in the fielding of viable non-lethal capabilities. Commanders

employ such capabilities complementing the uses of lethal capabilities, especially in situations where the use of lethal force would be counter-productive to mission requirements. Operations with social impacts, in politicalized, densely populated areas have created a need for Non-Lethal Weapons (NLW). The Army Chief of Staff's Strategic Studies Group recently analyzed the effects of fighting in major built-up population centers (megacities) and concluded that urban terrain is the great equalizer for determined adversaries. NLW plays a major role in mega city scenarios by providing warfighters with additional options, thereby reducing collateral damage.

Non-Lethal Weapons: Political and Social Realities in 21st Century Operations

Civilian casualties remain an unfortunate component of irregular conflicts, especially peacekeeping, and humanitarian operations. Distinguishing between civilians and combatants in hybrid warfare and peacekeeping operations is even more problematic than it has been previously.¹ DoD acknowledges that irregular warfare (IW) is as strategically important as conventional warfare.² It now seeks to achieve a balanced approach to warfighting that enables the Joint Force to operate effectively in IW as it has in conventional warfare.³

Cyber communications and social media have transformed the global environment. Websites, such as 'You Tube', 'Twitter', and 'Facebook,' are now used by civilians and non-state actors to conduct adversarial information operations in an underground network of communications that attracts recruits and spreads propaganda. They adeptly exploit civilian casualties of military operations, instantaneously providing graphic images of victims throughout the world. "The use of nonlethal weapons can have a strategic...effect by avoiding collateral damage...to infrastructure, minimizing...civilian casualties, overcoming negative perceptions of the United States,

and denying opportunities for enemy propaganda victories.”⁴ Non-lethal technologies offer viable alternatives for future conflicts. Our military is challenged to decrease the lethality of conflicts in the 21st century. In January of 2009, Defense Secretary Robert Gates noted:

What is dubbed the war on terror is, in grim reality, a prolonged, worldwide irregular campaign – a struggle between the forces of violent extremism and those of moderation. Direct military force will continue to play a role in the long-term effort against terrorist and other extremists. But over the long term, the United States cannot kill or capture its way to victory.⁵

Nonlethal Weapons Policy

Operational capability gaps prompted the DoD to develop a NLW policy and launched a development program in the mid-1990s. DoD established the NLW program in 1996 as a direct result of Operation United Shield in Somalia. Although forces deployed to Somalia seldom used NLWs, commanders believed that the deployment of these weapons, with associated media coverage, aided in deterring violence and facilitated a successful withdrawal from Somalia. General Anthony C. Zinni pioneered NLW use; he is the leading advocate for DoD to develop its own program and weapons. Although many U.S. states and jurisdictions employ some counter-personnel and/or counter-materiel non-lethal capabilities, no national policy governing employment of non-lethal weapons or their development has been promulgated above the DoD level.

The FY96 National Defense Authorization Act directed DoD to centralize responsibilities for the NLW program. DoD Directive 3000.3 created the Joint Nonlethal Weapons Program (JNLWP). The Under Secretary for Defense for Acquisition, Technology and Logistics [USD(AT&L)] exercises primary oversight of the DoD program. Considerations of policy development and employment for non-lethal weapons is the responsibility of the Under Secretary of Defense for Policy [USD(P)]. The Marine

Corps Commandant serves as the DoD Executive Agent (EA) for the Joint Non-Lethal Weapons Program (JNLWP); all of the other DoD services, including the Coast Guard and USSOCOM, provide flag-level representation in support of the JNLWP via a general-officer level integrated product team chaired by the Marine Corps Deputy Commandant (Plans, Policies, and Operations) (DC PP&O). The JNLWP supports studies, identification and assessment of technology, human effects studies, legal reviews, and development of analytical tools.⁶

The Joint Non-Lethal Weapons Directorate (JNLWD) is a jointly staffed research and development (R&D) organization; it serves as DoD's focal point for issues pertaining to NLW. The JNLWD also coordinates NLW activities of other DoD services, manages day-to-day NLW development activities, manages and directs joint R&D funding lines, provides oversight on joint nonlethal matters, and tracks service-specific NLW efforts. Approximately 80 weapons and systems were designed, developed, tested, and fielded/deployed since the establishment of the JNLWP in 1996.

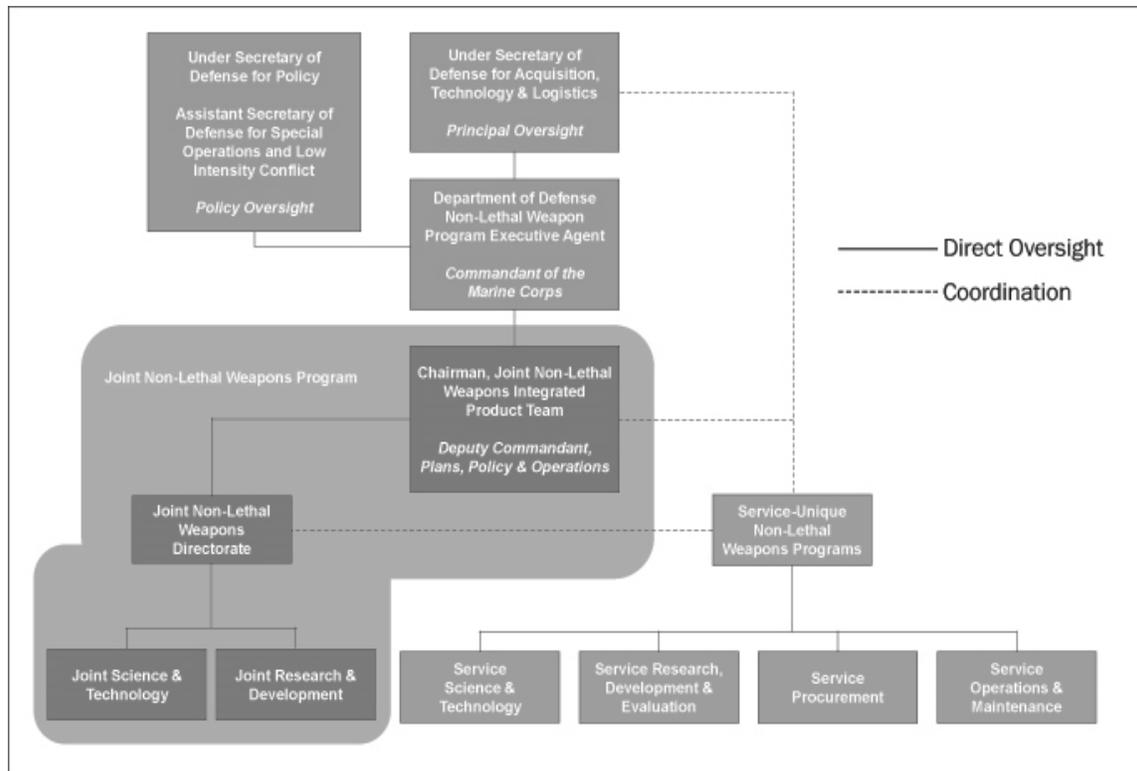


Figure 1: DoD Non-Lethal Weapons Program

In 2000, the US Army Training & Doctrine Command (TRADOC) established single proponenty for the Army’s non-lethal weapons program at the U.S. Army Military Police School (USAMPS). In 2011, the Department of the Army DCS G-3/5/7 designated the Commanding General (CG) of the U.S. Army Maneuver Support Center of Excellence (MSCoE) as Army NLW force modernization proponent; with USAMPS continued in its role as the internal MSCoE lead. The Army Nonlethal Scalable Effects Center (ANSEC), established at USAMPS, provides the overall lead for solutions involving any combination of doctrine, organization, training, materiel, leadership and education, personnel and facilities (DOTMLPF). ANSEC, “supports, develops and serves as the Army's chief advocate for nonlethal issues to and on behalf of other Army proponents. Acts as the Army's single voice for non-lethal issues, with direct liaison to

DoD, the Joint Nonlethal Weapons Directorate, Army Materiel Developers, and the other military Services.”⁷ The inclusion of “scalable” in ANSECs title is significant. This key non-lethal concept affirms the Army’s intent to achieve the flexibility in providing a measured response in the use-of-force continuum throughout the range of military operations. A scalable weapon yields effects ranging from non-lethal to lethal; such a weapon is rheostatically controlled to deliver the desired non-lethal effects.

Defining non-lethal weapons is a controversial matter since its inception. The 1996 DoD Directive 3000.3 defined non-lethal weapons as “weapons that are explicitly designed and primarily employed so as to incapacitate personnel or materiel, while minimizing fatalities, permanent injury to personnel, and undesired damage to property and the environment.”⁸ In 2010, TRADOC directed all of its Centers of Excellence, Battle Labs, and other facilities responsible for non-lethal developments and training within the Army to use “non-lethal” terminology that complies with the joint definition of non-lethal weapons. NLWs are characterized by the following characteristics: 1) relatively reversible effects on materiel or personnel; and, 2) objects are affected differently within their area of influence.

DoD recognizes that the employment of non-lethal technologies inadvertently has lethal effects; so, while the design intent and employment considerations remains to deliver non-lethal effects against targeted personnel and or materiel systems, DoD acknowledges that employment of NLW does not totally assure a benign outcome. While complete avoidance of lethal effects is not guaranteed, NL capabilities, properly employed, will significantly reduce the lethal effects that would be generated by attacking the same targets with lethal means. Forces equipped with NLW thus have

capabilities that are designed and intended to deliver immediate, predictable, and reversible effects against personnel or materiel targets.

There remain legal and ethical issues in the acquisition and employment of non-lethal weapons. The United States is not a party to any law of war treaty which regulates non-lethal weapons.⁹ The United States, nevertheless, chose to accept on moral grounds certain declarations and conventions that apply to non-lethal weapons. DoD policies regulate development, employment, and procurement of NLW. As with lethal weapons, acquisition of NLW is subject to legal review. The DoD also stipulates no requirement to use non-lethal weapons before using lethal weapons against military objectives.¹⁰ Acquisition of NLW, however, includes consideration of ethical questions which must be addressed: Will the NLW cause needless suffering? Will the NLW wreak damage disproportionate to its anticipated military advantage? Can the NLW be sufficiently controlled to discriminate between a lawful and unlawful target? Are there laws prohibiting use of this NLW in an armed conflict?¹¹

NLWs fall into two categories: counter-materiel and counter-personnel. Employment of counter-materiel non-lethal solutions stop and disable vehicles, vessels and aircraft; divert aircraft in air; and deny access to a facility. Counter-personnel non-lethal solutions effects deny, move, disable and suppress individuals.¹²

NLWs supports multiple missions, but they are not a substitute for lethal force when lethal force is required. Non-lethal capabilities, however, are intended to complement the lethal capabilities available to the warfighter in contingency operations. They play a vital role in other operations. They provide warfighters with additional options that enable them to tailor their responses more precisely to complex threats in a

hostile environment. They provide commanders the necessary flexibility to reduce negative effects of collateral damage, so they can greatly enhance operational options and planning. A myriad of operational situations must be met with the proper level of force, which should neutralize the threat without resulting in adverse consequences that imperil overall mission success. NLW are valuable not only in terms of their reduced physical effects but also in terms of their behavioral and psychological effects. The use of selected NLW capabilities, for example, can favorably change the behavior of a potential adversary before use of lethal force becomes necessary. NLW have the potential to enhance the commander's ability to protect the force, to capture or incapacitate high value targets, and to de-escalate situations to preclude the need to employ lethal force.

Non-lethal capabilities influence, stop, deny, move, suppress, or disable personnel and equipment; employment of these capabilities also is intended to minimize the unintended adverse effects of military operations on civilian populations, on their infrastructure, and on their environment. NLW provide an unconventional approach to force protection and force application, so their use requires a shift in the mindset of the nation's warriors. They must be persuaded to accept the employment of non-lethal capabilities, together with other available capabilities; they should not regard use of NLWs as a degradation of or of impeding mission accomplishment.¹³ The 2010 Quadrennial Defense Review asserts that, "stability operations, large scale counterinsurgency and counterterrorism operations are not niche challenges or the responsibility of a single Military Department, but rather a portfolio capability."¹⁴ NLW are suited for these operations in which the use of lethal force could lead to undesirable

casualties and the destruction of civilian infrastructure which leaves senior DoD leaders struggling with the long-term fallout of liability for damages and responsibility for creating an unstable, exploitable host government.

Non-Lethal Technologies

Fielding new technologies throughout DoD remains a historical challenge. Since the initial deployment on NLWs in the 1960s, NLWs were used by police forces throughout the world, often in situations where law enforcement personnel use protective shields and clubs to control demonstrators. “Technologies with a potential for generating non-lethal military capabilities cover a very broad spectrum. These include riot batons, pepper spray, and rubber bullets. Their advantage is simplicity. Their disadvantages are their lack of ‘standoff’ capability and their applicability only to limited scenarios like hand-to-hand confrontations and riot control.”¹⁵

Future military operations may depend on exponential growth in NLW developments and the resultant capabilities delivered to the warfighters. The Global Positioning System (GPS) and unmanned aerial vehicles (UAV) technologies met institutional resistance throughout development, training, and subsequent fielding of these new technologies. The development and fielding of these capabilities would not have been possible without senior leaders’ significant, long-term commitment to them. In a fiscally restrained environment, cost typically is the driving, often deciding, factor when new technologies and capabilities are being developed. The development and procurement of NLW capabilities in a resource-constrained era faces the additional challenge of persuading senior leaders to procure them rather than some new lethal weapons, platforms, and capabilities. These traditional warfighting assets receive higher prioritization and interest in the Services’ budget scrambles. They receive huge portions

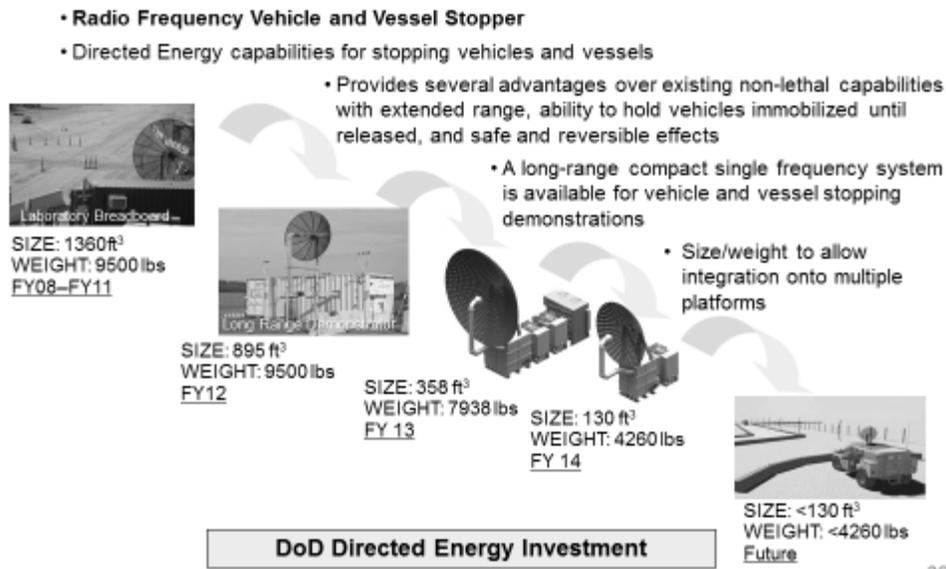
of the modernization resources still available. Procurement of big-ticket weapons further limits the resources that could be dedicated to NLW development and procurement. Our national security decision makers cannot dismiss the real and potential value associated with NLWs and their role in contributing to mission accomplishment. Lieutenant General Bedard, USMC, claims that, “Every warfighter eventually realizes that non-lethal weapons are vital in creating the effects needed to defeat an adversary.”¹⁶

Specific NLW technologies, either currently available or developed under the JNLWP, are limited only by financial support and creative thinking. Military forces already have a wide array of non-lethal capabilities at their disposal. Consider some of the following counter-personnel and counter-materiel capabilities under development or currently in use. The following list is far from comprehensive; however, it does suggest the range of NLWs potential uses, especially in peace and stability operations.

Counter-Materiel Capabilities

The Radio Frequency (RF) Vehicle and Vessel Stopper is a directed energy technology under development by the JNLWD. It offers several advantages over current non-lethal capabilities: extended range; the ability to shut down targeted systems (e.g., vehicles, vessels) as long as needed; and, reversible effects. The current plan is to develop mobile and stationary high-power microwave payload to stop small vessels, to swarm defensive apparatus, and to disrupt ships’ systems by creating malfunctions in their propulsion and electrical systems.¹⁷ Electromagnetic Pulse (EMP) weapons generate a pulse that directly affects the electronic components of the targeted systems, thereby immobilizing or rendering the equipment inoperable. The JNLWD views RF as the most promising concept for providing a standoff, non-lethal vehicle stopping capability based on demonstrated effectiveness of the long-pulse waveform.

Future: Counter-Materiel



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Figure 2: Concept of Radio Frequency Vehicle and Vessel Stopper

Vehicle stopping capabilities are available to our military forces through previously fielded systems as well as commercial-off-the-shelf purchases (COTS). These vehicle-stopping systems include items such as caltrops, spike strips, and vehicle arresting nets or barriers. Caltrops and spike strips do not specifically stop the momentum of a vehicle, but they slow the vehicle to an eventual stop by deflating the tires. Both industrial and government laboratories continue to improve these COTS vehicle-stopping technologies.



Figure 3: Depiction of Vehicle Stopping Technologies

Counter-Personnel Capabilities

The Active Denial System (ADS) supports a full spectrum of operations, ranging from crowd dispersal and checkpoint security to suppression of vehicle operators or occupants. This technology received extensive, even lurid, media coverage and is often referred to as the “pain ray”. The ADS’s directed energy, millimeter wave RF beam can engage targets at extended ranges. It provides a clear warning to potential aggressors while increasing the force protection of military personnel due to its extended standoff capability. The ADS’s projected RF millimeter wave penetrates the skin of targeted personnel only to a depth of one sixty-fourth of an inch; it induces an intolerable heating sensation, but results in no permanent injury or lasting residual effects.¹⁸ ADS may have a significant impact on enhancing warfighting capabilities through the escalation-of-force continuum available to our military forces.

Future: Counter-Personnel



Active Denial System

- Advanced Concept Technology Demonstrator
- Proven Effects – 95 GHz effects
- Effective at long-ranges

Compact ADT

- Demonstrate the same effectiveness in an operationally suitable configuration
- Develop a compact, lightweight second harmonic Gyrotron with a room temperature electropermeant



Solid State (SS) ADT

- Develop a compact, self-contained, NL SS-ADT demonstrator
- Significant reduction in size and weight
- Cost sharing effort between Army Research and Development Center and JNLWP

DoD Directed Energy Investment

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Figure 4: Concept of Active Denial Technology

The Long Range Acoustic Device (LRAD) is designed for hail/warn, move, deny, and suppression missions. The LRAD emits warning messages and warning tones over longer distances than those achieved by normal loudspeakers. LRAD represents just one of many COTS Acoustic Hailing Devices (AHDs) that are being manufactured and available for use by military forces. Used to support counter-piracy missions, LRAD systems can also be essential as non-lethal devices to disperse crowds, and as long-range communication devices. Deployed in Afghanistan, Iraq, and on U.S. Navy ships an upgrade to the LRAD system incorporates laser dazzlers to temporarily optically disorient aggressors.



Figure 5: Long Range Acoustic Device

Optical Distractors are eye-safe laser devices that possess reversible dazzling optical effects on human targets. These laser devices use coherent, directional, optical energy to support hail/warn and suppress missions. “The laser’s optics temporarily expand to generate a blinding light that can penetrate smoke or fog at twice the range of white light. It is particularly useful against drivers in approaching vehicles, snipers, or RPG operators.”¹⁹



Figure 6: Example of an Optical Distractor Currently Available

Electro-Muscular Incapacitation (EMI) technologies temporarily override the central nervous system of the targeted individual, limiting the person’s voluntary muscular control. EMI incapacitates even the most aggressive person, and is effective against aggressive personnel under the influence of drugs and/or alcohol. Generally known as stun guns, the most common of these weapons is the TASER---the “Thomas

A. Swift Electric Rifle.” This designation is taken from a favorite childhood book of the inventor. TASERs are now used by many civilian law enforcement departments as well as several DoD services. “Basically, an Electronic Control Weapon (ECW) fires a wire-connected dart containing two electrodes that, when they strike a target, deliver a series of electric shocks over a 5-second cycle.”²⁰ In 2014, TASERs were fielded to Army military police units. The Army designates the TASER devices as the “Launched Electrode Stun Device (LESD).” U. S. Army Military Police personnel and security guards performing law enforcement missions use them extensively.



Figure 7: X26 Taser

“The Non-Lethal Capability Sets (NLCS) are versatile packages of commercial and government off-the-shelf mission enhancing equipment and munitions. NLCS provide the warfighter with a variety of acoustic, optical distraction, blunt trauma, irritant, and vehicle stopping non-lethal options. NLCS components are employed at access control points and checkpoints. They provide convoy protection, vessel boarding, crowd control, and various other missions. The NLCS contains a mixture of counter-materiel and counter-personnel systems, protective equipment and enhancement devices.”²¹ Since the late 1990s, the Army has procured multiple versions of the NLCS, beginning with a plan to procure 30 complete battalion-sized NLCS intended to be fielded in

support of world-wide operational needs. One of these early NLCS was used successfully by Task Force Falcon in Kosovo. The Army in 2003 reconfigured the NLCS to a platoon-sized, single container of equipment intended for use in OIF and OEF. The materiel developer procured 96 of these NLCS and issued them to gaining units in theater. The latest changes, in response to feedback from operational units, include reconfiguration of the sets for issue to AC, Reserve, and NG Brigade Combat Teams, Maneuver Enhancement Brigades, and Military Police Brigades. The configuration of these enhanced NLCSs also enabled the gaining units to sub-allocate assets to subordinate units based on their particular mission needs. More than 100 of these newly reconfigured 'BCT NLCSs' were procured and fielded, beginning in late FY08 and continuing through mid-FY14.

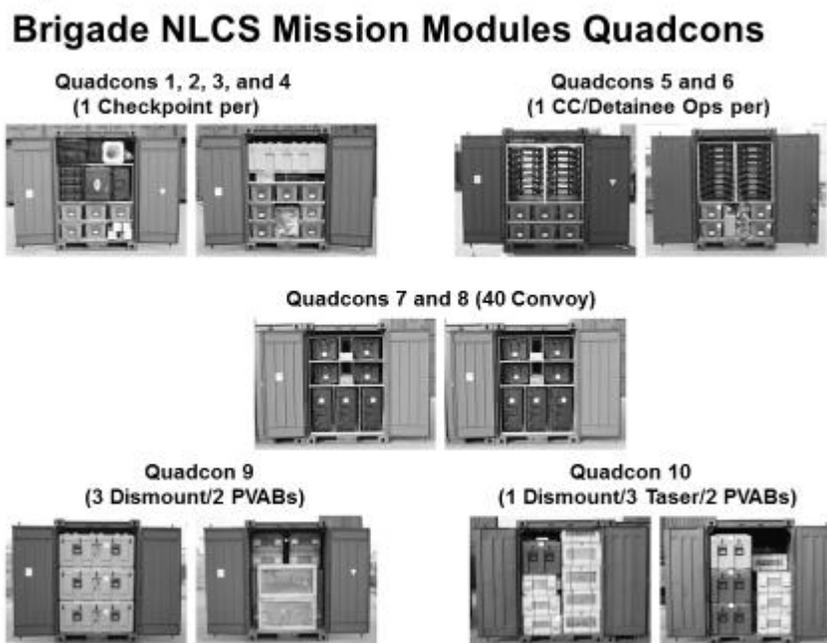


Figure 8: Non-Lethal Capability Sets

NLW technologies range from simple mechanical devices to advanced electronically-based devices. New and emerging technologies are constantly enhancing and expanding the potential of NLW. To be advantageous to military forces, “non-lethal weapons must advance the national security interests of the United States; they must increase the ability of DOD to execute its mission of creating and implementing a national military strategy to support the national security strategy.”²²

Peace and Stability Operations

“The world will look to us to help solve these problems, and our answer needs to be more than tough talk or calls to carpet bomb civilians. That may work as a TV sound bite, but it doesn’t pass muster on the world stage.”²³ The first deployment of non-lethal weapons in support of a peacekeeping operations occurred during Operation United Shield in Somalia. In 1994, The Council on Foreign Relations conducted an after-action review of the violent experience in Somalia:

They indicated the reported death of an estimated 6,000 to 10,000 Somalis from actions by U.N forces, many as a result of fire from helicopter gunships, seems counter to the stated purpose of the intervention even apart from the moral repulsion of needless death. The effect on U.S. forces of firing into crowds including women and children in which snipers are concealed is also relevant. In Somalia street and point control through the use of incapacitating foams and flight-inducing smells could have offered significant advantages over deadly fire from helicopter gunships.²⁴

“Stability operations include both developmental and coercive actions. In order to enhance a government's willingness and ability to care for its people, developmental actions remain critical: simply providing humanitarian relief following a natural disaster is a good example. Coercive military actions involve the application of limited, carefully prescribed force, or the threat of force, to achieve specific objectives.”²⁵ U.S national leaders are currently intent on minimizing both U.S. military and indigenous civilian

casualties, as well as limiting collateral damage to infrastructures, with this intent applicable for both current and future military operations. These desired end states become critical as the enemy moves into and blends amongst non-combatants in built up urban centers. Continued rapid urbanization also will make stability operations more difficult to sustain.

Military operations have strategic, operational, and tactical dimensions. “Our national leaders can use the military instrument of national power in a wide variety of activities, tasks, missions, and operations that vary in purpose, scale, risk, and combat intensity.”²⁶ In *Modern Strategy*, Colin Gray asserts that “Poor strategy is expensive, bad strategy can be lethal.”²⁷ Urban areas offer potential adversaries concealment within congested populations and sanctuary in ungoverned districts. This accounts for recent demands for additional language and cultural training, the introduction of human terrain teams, and the recognition that we now operate and fight among the people. In this global environment, our military will continue to rely on the importance of non-lethal technologies.

Strategy for military operations is inherently a human endeavor. Based upon our experiences in Afghanistan and Iraq, the U.S. realized that cultural features significantly impact uses of military force. In fact, the awareness that culture matters are a thread woven deeply throughout the history of strategic thought. One can make a strong argument that Carl von Clausewitz, based on his studies and his own military experience and analysis, understood and reflected in *On War* the impact of culture on the development of strategy, operations, and tactics.²⁸ Differences in perceived threats exist on a cultural level, and parties in a conflict should attend to these differences.

Culture defines what is acceptable or unacceptable behavior based on its own values and norms. Unconventional forces such as the Islamic State of Iraq and the Levant (ISIL), however, make it difficult for commanders to gain situational awareness to decide how best to support stability operations. To mitigate a host country crisis, commanders at every level must remain situationally aware that in the global environment of constant, immediate communications, any single incident may traverse through all levels of warfare. Soldiers in peace and stability operations must cope with crowd disturbances and civil unrest which possess the potential to escalate into uncontrolled brutality.

Non-lethal weapons fill operationally significant gaps in important warfighting processes, particularly escalation of force situations. Operational commanders in the U.S. Central Command (CENTCOM) area of responsibility have increasingly demanded reduction of unintended civilian casualties, and they have advocated the use of non-lethal weapons as a means to reduce mission risk. Combatant commanders historically are not vocal advocates of the Services' respective development of requirements. For this task, they are dependent upon user requirements generated via the Joint Capabilities & Integration Development System (JCIDS) and the follow-on deliberate acquisition efforts. These processes take many years to fund, procure, and field an eventual materiel solution. Demands from CENTCOM's operational forces for NLWs to support current/ongoing operations, however, have been communicated through Joint Urgent Operational Needs Statements (JUONS). These demands for NLW, from the combatant commands, to prevent civilian casualties historically are sporadic.

Additionally, when contingency operations are launched, training and equipping of the military forces for non-lethal operations becomes a priority.

In 2012, U.S. service members at Bagram Air Base in Afghanistan burned Islamic religious material, thereby inciting a number of civilian demonstrations with varying degrees of violence throughout the country of Afghanistan and the world. Engaging rioters with lethal means would inflame the situation; unfortunately, NLW and capabilities, despite their availability in country, were not employed. As a result, there were avoidable injuries and damages to the civilian population and infrastructure. One lesson learned from this incident is that, even after the immediate need for non-lethal weapons is fulfilled and assets made available, there exists a reluctance to employ non-lethal technologies due to Rules of Engagement (ROE) criteria, misinformation regarding their uses, and risk aversion. Innovative technologies frequently raise political, ethical, and cultural concerns and enemies continue to exploit mischaracterizations of these new technologies.

Non-lethal capabilities are available to military forces in Afghanistan, but rarely used. The Chairman of the Joint Chiefs of Staff, General Dunford, stated that the “demand for effective non-lethal weapons right now exceeds the inventory...squad and platoons that are interacting with people [in Afghanistan] want to take decisive action but limit the possibility of injuring civilians.”²⁹ Combatant commands and services’ interests, nonetheless still are not at the level needed to gain senior DoD leadership support for NLW procurement and employment of non-lethal technologies. This lack of senior interest limits the JNLWP’s ability to effectively support services fielding NLW technologies. Based on the misguided perceptions of NLWs unsuitability on the

conventional battlefield, military services failed to integrate NLWs with current weapons platforms or employing reduced non-lethal capabilities like those used by law enforcement agencies. The potential for using NLW will continue to be unexploited until current attitudes change. Non-lethal technologies allow for a range of employment alternatives across a broader continuum of contingencies. They support the objective from the tactical to the strategic levels. The Army Vice Chief of Staff bluntly asserted that, “If we’re really serious about fighting an insurgency, we have to change our culture and accept the importance, and sometimes preeminence, of non-lethal effects.”³⁰

A stabilization strategy cannot succeed if we are harming the population who we are striving to protect. The ‘CNN factor’ brings quick condemnation of any aggressive act for which the peacekeeping force is deemed responsible. But a “wider use of non-lethal capabilities in such scenarios could mitigate this risk, allowing U.S. forces who must make split-second decisions to pull the bullet back should they engage suspicious individuals later deemed to be noncombatants.”³¹ Surveys conducted by the JNLWD validate our shortfalls in non-lethal education, knowledge, training, and availability.³² Our national values and guidance from senior leadership requires our military leaders to be responsible for protecting innocent civilians while rapidly and decisively defeating the enemy.

This responsibility means the Army must develop, test, procure, integrate, and train non-lethal technologies and tactics, techniques, and procedures (TTPs) to ensure protection of our Soldiers and innocent civilians while also providing robust capabilities to defeat our enemies. Soldiers and leaders must be trained, knowledgeable, and confident in their reliance on non-lethal systems, in relevant doctrine, and their abilities

to employ non-lethal capabilities in all facets of military operations. The challenges of future armed conflict make it imperative for the U.S. military to produce leaders and forces that exhibit considerable operational adaptability. We must develop the capabilities that enable our forces to achieve our campaign objectives while simultaneously minimizing the adverse effects of military operations on civil populations and their environments. Our Army cannot successfully conduct current or future operations without a robust NLW capability.

Strategic Communication

An effective non-lethal communications plan involves all parties of interest, from DoD policy-makers to commanders to operators-and from legislators to non-governmental organizations to the public. The Army must continue to seek effective and innovative techniques to revise and enhance the non-lethal weapons program by communicating successes, responding to feedback, and capitalizing on positive trends as DoD seeks new opportunities to exploit non-lethal technologies. We must showcase NLW capabilities and explain how they support the warfighter in achieving U.S. military and national interests to gain mainstream acceptability and political support. "Strategic communication is essential for generating understanding and advocacy of technological solutions to contemporary military/operational issues."³³

Congress was informed of the unique role for NLW, so there is bipartisan support for the operational effectiveness on non-lethal weapons. The House Armed Services Committee (HASC) emphasized "the value of non-lethal weapons in reducing risks to the warfighter and to non-combatants in current and prospective contingency operations."³⁴ The HASC implored DoD to "accelerate its effort to field such systems, including active denial technologies; to ensure adequate funding for the non-lethal

weapons science and technology base; and to develop policy, doctrine and tactics for their employment.”³⁵ The Committee expressed concerns that DoD “does not fully appreciate the important role non-lethal capabilities can play in helping to ensure mission success,” noting that “budgetary trends do not reflect an urgent need for non-lethal capabilities.”³⁶

There exists some discussions of integrating NLW into the force, but there exists a much greater emphasis on lethal capabilities. The non-lethal program remains handicapped unless leaders throughout all levels of government and command embrace a cultural shift which highlights the value of non-lethal technologies in achieving national and military strategies. To foster a better understanding of non-lethal capabilities, DoD should continue to encourage awareness of NLW among warfighters, decision makers and the public through strategic communication, educational initiatives, the incorporation of NLW information into existing professional military education curricula, and strategic outreach.³⁷ By increasing the knowledge and training of NLW, this program will gradually gain cultural acceptance and build confidence in the employment of NLW capabilities. In this cultural shift, leaders will exhibit a self-assurance that non-lethal weapons provide another tool on the escalation-of-force continuum. In order to share the story, we must also educate the national media on non-lethal capabilities and DoD policies. The capability of these technologies appear either sinister or benevolent, depending on how the story is told. Furthermore, the whole story needs to be told, stressing the message that these weapons provide additional options. But they do not equate to ‘never-lethal’, nor will their presence and availability to the

force tie the forces hands in employing lethal means when the forces commander deems them necessary.³⁸

Conclusion

“The tank was first used by the United Kingdom in World War I but had no profound effect on warfare until it was incorporated into the doctrine of blitzkrieg by Germany in World War II.”³⁹ It generally takes 20 years before new technology is incorporated into military doctrine and eventual employment of revolutionary technologies becomes commonplace in military operations and tactics. The volatile, uncertain, complex, and ambiguous environment of today’s asymmetric world makes things less predictable. We cannot afford to simply wait for non-lethal technologies to happen upon the strategic stage. In one way, “non-lethal technologies of today are at the stage of the bi-plane of 1914; warfighters want the capability, and, while the capabilities are not yet as shiny and efficient as the user might want, the technology will evolve.”⁴⁰ The U.S. possesses and maintains the ability to support stability and peace keeping operations throughout the world. Regional crises, non-state actors, and terrorists, however, have caused the U.S. to think twice before reflexively assuming the lead and attempting to resolve a conflict. Throughout recent history, however, UN sanctions and diplomacy failed to achieve the desired political end states. Domestically and internationally, the use of purely lethal force in many operations remains politically unacceptable. Non-lethal weapons offer an effective capability to deal with a wide variety of global crises. Non-lethal capabilities provide a solution that falls between the continuum of diplomacy and lethal force.⁴¹ Like our experiences with the tank and unmanned aerial vehicle, “the transformation of non-lethal weapons from a niche capability to one with scalable effects useful across the spectrum of contingencies

depends on those with the vision to see their broad-based, across-the-board utility in helping achieve mission success.”⁴²

In the years ahead, our leaders will confront complex, dynamic, and unanticipated challenges to our national security. These challenges occur in many forms across the spectrum of conflict, ranging from peaceful competition to conventional war and all points in between. Adversaries will employ tactics which endanger innocent civilian populations and jeopardize cultural landmark. They will employ sophisticated information campaigns to instill fear and terror. Combatant commanders need non-lethal capabilities that complement lethal capabilities in order to subdue a wide range of threats while protecting non-combatants, cultural and historical landmarks, and critical infrastructure. Striking a balance enables our Army to achieve our national objectives, while we earn the support and trust of civilian governments and their populations.

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