

The Future of the Army Nonlethal Scalable Effects Center

By Lieutenant Colonel Jesse Galvan and Major Theo Kang

“The shifting military environment is likely to see greater mixing of enemy combatants with noncombatants and there are likely to be situations where lethal force is undesirable. . . . Increasing nonlethality widens the range of effect the joint force is able to achieve without using deadly force. Nonlethal ability should not detract from our ability to apply lethal means as required.”

—Force Application Functional Concept, February 2004

“Wider integration of nonlethal weapons into the US Army and Marine Corps could have reduced damage, saved lives, and helped to limit the widespread looting and sabotage that occurred after the cessation of major conflict in Iraq. Incorporating [nonlethal weapons] capabilities into the equipment, training, and doctrine of the armed services could substantially improve US effectiveness in conflict, postconflict, and homeland defense.”

—Council on Foreign Relations, February 2004

Background

In September 2000, the US Army Military Police School (USAMPS) was designated as the sole proponent for all Army nonlethal (NL) programs, to include law enforcement and tactical applications. In October 2002, the Army Nonlethal Center of Excellence was established and, in October 2004, it was redesignated as the Army Nonlethal Scalable Effects Center (ANSEC). ANSEC is the central hub for all Army NL efforts and consolidates the efforts of the other Army proponents to speak with one voice on all NL issues. The word “scalable” in an NL context means having the flexibility to apply a measured response in the use-of-force continuum across the range of military operations. According to the Army Concepts Summaries, Headquarters, Training and Doctrine Command, 1 March 2004, the desired end state of a scalable weapon should yield effects ranging from NL to lethal via a dial-up, rheostatic capability.

“The other thing I learned is we are good at lethal effects; but in a counterinsurgency, nonlethal effects are as important as, and, at times, more important than kinetic effects. We are very good at fighting and breaking things and

teaching other people to do the same. But nonlethal effects are critical to winning the war in Iraq. So, if we’re really serious about fighting an insurgency, we have to change our culture and accept the importance, and sometimes pre-eminence, of nonlethal effects.”

—Major General Peter Chiarelli, USA
Field Artillery
September-October 2005

The need exists for current and future NL capabilities throughout the spectrum of operations, from civil disturbances to major combat operations. That has been well documented through numerous lessons learned, after-action reviews, direct feedback from Soldiers on the ground, and various other joint sources. The greater flexibility mentioned above is also referred to as the “bullhorn to bullet” gap or the gap between civil disturbance and major combat operations. ANSEC’s mission is to bridge that gap.

Definition

Department of Defense Directive (DODD) 3003.3 defines nonlethal weapons (NLWs) 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....” It is important to note that this definition does not, however, include other capabilities that are mistakenly identified in some contexts as NL means, such as psychological operations, civil affairs, computer attacks, and information operations. NLWs are not required to have a zero probability of producing fatalities or permanent injuries. While complete avoidance of these effects is neither guaranteed nor expected, when properly employed, NLWs should significantly reduce destructive and lethal effects as compared with physically destroying the same target.¹

Current Nonlethal Capabilities

Current NL capabilities include, but are not limited to—

- The modular crowd control munition (MCCM) (also referred to as the NL claymore).
- 12-gauge point and/or area rounds.
- The flashbang grenade.
- The stingball grenade.
- M203 point and/or area rounds.
- The light vehicle obscuration smoke system (LVOSS) (CS) (O-Chlorobenzylidene malononitrile) round.
- The FN303™ less lethal launcher.
- The X26 Taser®.
- The vehicle lightweight arresting device (VLAD).
- The portable vehicle arresting barrier (PVAB).
- Caltrops (tire spikes).
- Riot control agent dispersers.

The Nonlethal Capabilities Set (NLCS) provides a platoon-sized packaged set. ANSEC is working to modularize the NLCS to allow units to order only what they need to complete their mission and to allow any unit to receive NL munitions (NLM). Now only units in possession of an NLCS can order NLM.

The effective ranges of current NLM are fairly limited. This capability gap is being addressed through efforts to extend the capability of NLM out to small arms ranges. Eventually, the capabilities of NLM will be extended beyond small arms range. Current NLM ranges are depicted in *Figure 1* (page 6).

Near-Term Nonlethal Capabilities

Efforts to improve each system’s capabilities (range, duration, effect, coverage, and reversibility) and to develop new or refine emerging NLW technologies are continuous. The near term ranges from

2007 to 2012, depending on the system. However, some near-term NL capabilities have already been fielded on a limited basis to fulfill approved operational needs statements and urgent materiel releases. Some have been fielded as part of a limited user and/or operational assessment. Near-term capabilities include, but are not limited to—

- The 12-gauge, extended-range NL cartridge.
- The modular accessory shotgun system as seen in *Figure 2*.
- The MK19 NLM (now called the high-volume, rapid-fire, multipayload NLM).
- The Tactical NLM (TNLM).
- The Active Denial System (ADS).
- Acoustic devices such as the long-range acoustic device (LRAD) and the midrange acoustic device (MRAD).
- The Mobility Denial System.

Although not considered an NLW per se, an acoustic device has an invaluable place across the continuum of force. It may be considered an enhancement to the first level of force, which is communication. Acoustic devices such as the LRAD and MRAD provide a communication device and the ability to “interrogate intent” from long distances.

USAMPS is the proponent for the MK19 NLM, which will provide a robust, rapid-fire NL effect at various ranges. The US Army Infantry Center at Fort Benning, Georgia, is the proponent for the TNLM. The first version of the TNLM will be an airburst munition providing longer-range engagement capabilities for the MK19 and the M203. The second version of the TNLM will provide extended-range NL capabilities for the integrated airburst weapon system and the advanced crew-served weapon system.

The ADS emits a directional energy beam to create an intolerable heating sensation on the skin of targeted personnel. The system may soon be available for an extended user evaluation under real-world operational conditions. The ADS started as an advanced concept technology demonstration several years ago, but it has made substantial progress since its inception and is now positioned for actual use.

Future Nonlethal Capabilities

Imagine a futuristic battlefield, the kind featured in so many science fiction stories. Military base camps are protected by invisible shields, intelligent minefields, and super guns. The landscape is speckled with unmanned aerial vehicles and ground combat systems assisting platoons of high-tech Soldiers. These Soldiers, while very much human, are outfitted with

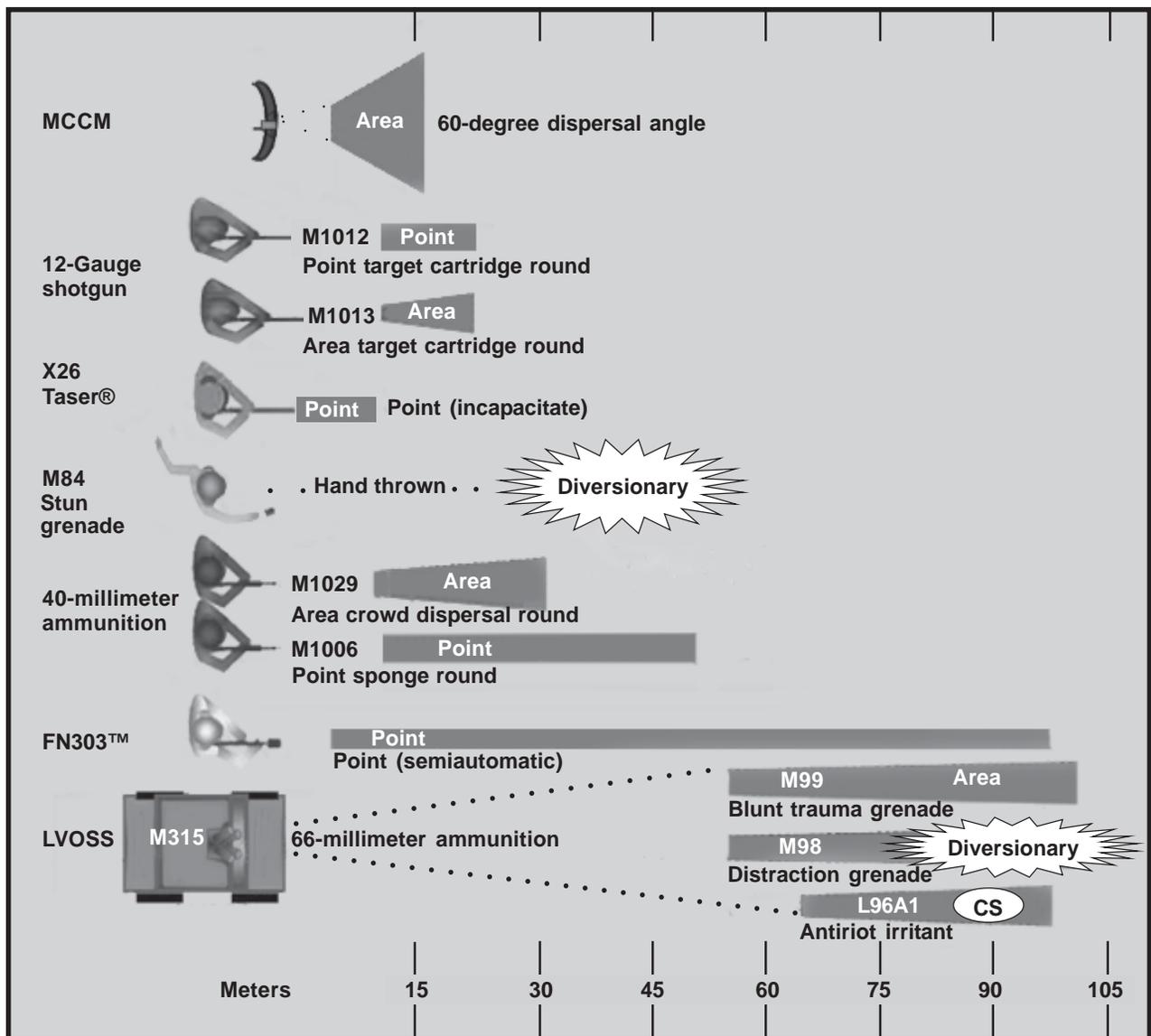


Figure 1. NLM range measurements (approximate)

remotely operated, vehicle-mounted, and hand-carried combat systems that can warn, delay, mark, incapacitate, or kill selected targets. Also, they can render targeted weapons, communications equipment, vehicles, and other systems temporarily or permanently inoperable. They can stop, delay, or move a crowd or engage a single target in the middle of a crowd. These scalable NL to lethal capabilities will enhance the future warfighters' ability to separate noncombatants from the enemy forces that may be attempting to use them as human shields.²

In the preceding vignette, the capabilities of the "hand-carried combat system" accurately depict some of the present technology research being conducted by the Joint Nonlethal Weapons Program. Future NL capabilities include high-energy laser weapon systems; short-pulse, laser-induced plasma technology; high-powered microwave



Figure 2. Modular accessory shotgun system (12-gauge shotgun attached to M4 rifle)

technology; extended-range area stun projectiles; and various tetherless electromuscular disruption systems. Depending on the technology, the host platform will be a vehicle, an individual weapon, or even an aircraft. Future NL capability is defined as a capability that will become fully operational sometime after 2012.

Future NLWs will provide range, effect, duration, area coverage, and reversibility (neutralization without destruction) capabilities that will provide a significant advantage to US forces well into the 21st century. These capabilities will support the Army's Future Force and operate in a complex and challenging environment that may include "... urban and complex terrain, large concentrations of civilians and various noncombatants, such as local governments, nongovernmental organizations ... with an array of conventional and unconventional threats ... both traditional and asymmetrical tactics in a less predictable manner..."³ across the spectrum of conflict.

The Way Ahead

"...The key is to train effectively on our systems and to be empowered to use them [NLWs] early in a conflict when they have the greatest potential to prevent unnecessary suffering and injury...."

Colonel James B. Brown
18th Military Police Brigade commander

The current training methodology of "alert, deploy, train" must be replaced by "train, alert, deploy." NLW use must be included in the planning process. Colonel Brown makes an excellent point that early use of an aggressive, robust NL capability can prevent a situation from escalating to deadly force levels.

Another current impediment to effective employment of NLWs is the limited availability and capability of some of the munitions. However, there are efforts to resolve these issues. The Marine Corps and the Army have different contents in their NLCS, and this sometimes leads to problems. The creation of a joint NL training center and a joint NLCS would result in the expanded use of NLWs by both services and an increased student throughput to ensure a truly unified effort between the two primary services using NLWs.

The comments below are from the February 2004 report of the Council on Foreign Relations dealing

with NLW capabilities development efforts. They reveal the extent of the challenges that still confront the services and the Department of Defense (DOD) in the years to come.

"Although NLWs are not widely integrated into the US armed forces, their effectiveness has been demonstrated when used. . . . Despite such successes, the task force finds that NLWs have not entered the mainstream of defense thinking and procurement. While those who have used them are quick to sing their praises, current DOD and service programs are simply inadequate in size and scope to yield the benefits from NLWs. 'One could argue whether the problem is organizational or cultural . . .'"⁴

Note: The ANSEC Army Knowledge Online (AKO) Web site contains information on current systems and training material. As the central hub for the Army on all NL programs, the ANSEC AKO site is also the way to—

- Pass along issues.
- Collect and/or request information on topics such as the Interservice Nonlethal Individual Weapons Instructor Course and mobile training team.
- Access NL links.
- Provide feedback and lessons learned.

To reach the ANSEC AKO Web site, log on to AKO. Type "ANSEC" in the AKO search box and select "AKO Sites" in the box below it. (The box titled "AKO Files" is selected as the default.) Press "Enter," then select "ANSEC," "(Homepage)."

References

¹ DODD 3003.3, *Policy for Nonlethal Weapons*, 9 July 1996, Certified current as of 21 November 2003.

² Contributed by Mr. Samuel Cottrell, ANSEC contractor.

³ "Effect-Based Fires", *Field Artillery*, November-December 2000.

⁴ Report by Council on Foreign Relations, quote from Richard Haas, council president, 26 February 2004.