Full-spectrum artillery

By MAJ Richard L. Scott

With the emergence of irregular warfare as the dominant operating environment for the foreseeable future, the U.S. military's judicious use of force is central to the challenge of operating in these unconventional environments. The incorrect application of force at the tactical level may have strategic implications. Scientific advances in nonlethal weapons may serve to reduce the level of violence our service members receive and dispense, while performing operations characterized by asymmetric threats, complex or congested terrain and belligerents intermingled with noncombatants. This article introduces the term full-spectrum artillery as a subcomponent of nonlethal weapons and presents the case for the expanded use of nonlethal weapons by the field artillery community in irregular warfare.

The road to purgatory. If the road to hell is paved with good intentions, then the road to purgatory must be paved with indifference. The difference between the two, in field artillery's case, is that hell represents the demise of a great branch and purgatory represents marginalization. To be sure, the field artillery is not dead. There are hundreds of field artillerymen performing core missions in the contemporary operating environment, but the majority are performing nonstandard missions. This is due, in part, to the field artillery being slow to adapt to changing threats or the changing environment. While the Army deployed less frequently into conventional conflicts and more into stability operations and civil support operations, the field artillery did little to develop munitions appropriate for those operations. As a result, combatant commanders relied less upon the field artillery for fast and accurate indirect fires. They shifted priorities and resources and redirected thousands of field artillerymen into nonstandard missions, such as civil affairs, psychological operations and information operations, transporters and military police.

In "The Return of the King," MG Peter M. Vangjel states, "Nine out of 10 (artillery) units are not performing core missions." This branch marginalization leads to core-skills degradation and skill set atrophy — both concerns pointed out by Vangjel in his plan. While there is little doubt that a nonlethal field artillery capability may have impacted operations in Iraq significantly during the initial invasion and subsequent Phase IV reconstruction efforts, there may be little demand for such a capability now. This does not mean that the capability is no longer needed; it just may not be needed in that area of operations. Field artillery leaders now have a window of opportunity to develop a nonlethal strategy as they prepare for future operations in other parts of the world. Without such a strategy, success will continue to be contingent upon the "flexible, adaptable and agile team players" cited in the campaign plan.

In addition to deploying field artillerymen into nonstandard missions, the term nonlethal fires has been incorporated into the field artillery vernacular. LTC Morgan Mann points out in his article, *Marketing Framework in Support of Non-Lethal Fires*, "Recently published field manuals such as *Stability Operations* (*FM 3-07*), *Counterinsurgency Operations* (*FM 3-24/ MCWP 3-33.5*), and the Army's new *Operations* (*FM 3-0*) manual reference nonlethal fires as critical components to planning and executing operations; however, there is little in way of prescriptive help. There are doctrinal publications pertaining to information operations (FM 3-13 and JP 3-13) and nonlethal targeting, but these publications are focused on division and higher level units where there are dedicated staffs for nonlethal fires and effects. In addition to the lack of tools at the tactical level, we also lack much of the joint or service specific doctrinal language to communicate what 'nonlethal' or 'non-kinetic' fires and targeting are, and how they are suppose to affect the battlespace."

The effort by senior field artillery leaders to establish nonlethal fires as a doctrinal term for its nonlethal activities is problematic. It is not enough to park the cannons and rocket launchers, deploy the Soldiers trained to operate those weapon systems into various nonstandard roles and call their efforts nonlethal fires. It is the lack of a nonlethal artillery arsenal, in part, that has led to the ad hoc force transformation that we observe today. Once the field artillery successfully reestablishes itself as the "King of Battle" and incorporates a more robust (lethal and nonlethal) arsenal into the scheme of fires, branch marginalization will cease and maintaining core proficiencies and preventing skill set atrophy will become little more than training objectives.

The way ahead. Despite its reputation for being a casualty producer, the field artillery does have limited nonlethal capabilities with its illumination and smoke rounds. However, both types of rounds are seen more commonly in conventional conflict and usually precede high-explosive or improved-conventional munitions. What the field artillery lacks is an abundant staple of nonlethal options for use in irregular warfare, and therein lies the point of entry for nonlethal weapons proponents. The paper "Joint Concept for Non-Lethal Weapons" by General R. Steele, U.S. Marine Corps, identifies dozens of nonlethal options either currently available or being developed.

The nonlethal weapons fall into two large categories—counter-personnel technologies and counter-materiel technologies. Counter-personnel technologies include agents for crowd and riot control, personnel debilitation, facility clearing and area denial for personnel. Counter-materiel technologies include agents for area denial to vehicles and vessels and facility obstructions. A third, smaller, category involves counter-capability assets that are designed to disable or neutralize buildings or other mechanical/electrical facilities. Murdoch University Electronic Journal of Law produces another very useful reference that describes most of the nonlethal weapons as well as the legalities associated with their use at www.murdoch.edu.au/elaw/issues/v7n2/sautenet72_text.html.

Field Manual 6-30 Tactics, Techniques and Procedures for Observed Fire states, "When it is necessary for the observer to adjust fire, he must select an adjusting point." Full-spectrum artillery is that adjusting point. The field artillery lacks an arsenal that can be applied across the full spectrum of conflict adequately (See figure 1 on page 41). Full-spectrum artillery provides a graduated capability that currently is nonexistent. Full-spectrum artillery includes the development and application of all lethal and nonlethal munitions for use in cannons, rockets and/or missile launchers across the full spectrum of conflict (See figure 2 on page 41).

Imagine being able to deploy indirect fire assets in a way that still produces a desired outcome without causing irreversible damage. In Rwanda, electromagnetic pulses fired from howitzers, rocket or missile launchers could have quashed radio broadcasts urging genocide. In Macedonia, the field artillery might have fired malodorants or dyed foam coupled with personnel-capturing nets to help ground troops capture those who attacked the U.S. embassy in 1999. Full-spectrum artillery might have made a difference if NATO targeted Serbian command and control centers and jammed TV broadcasts and radio towers, similar to how the U.S. employed electro-magnetic pulses over Iraqi power stations during Operation Desert Storm. Field artillery assets could have delivered rapid hardening foams to deter assaults, and the subsequent looting, of the Iraqi National Museum in Baghdad in 2003.

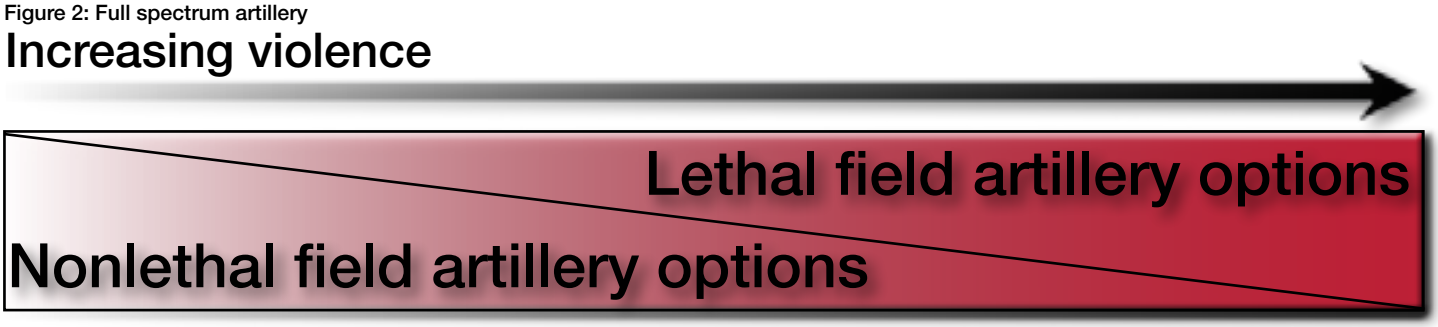
When combined with well trained and well placed ground troops, full-spectrum artillery could have a profound effect on how wars are fought. Miscommunications and misunderstandings might not yield more than a bruise or hurt ego, and mistakes will not result in death. Reestablishing structures and services would require minimal resources, communities would remain intact and coalition efforts could be directed toward investments and improvements, rather than rebuilding and damage control.

Field artillery leaders now must determine how to integrate existing and developing technologies into the field artillery arsenal to provide combatant commanders an enhanced capability to defeat enemy actions. Fortunately, much of the work has already been done. The Joint Non-lethal Weapons Directorate, out of Alexandria, Va., has developed many of the technologies discussed in this article and has linkages into the Department of Defense bureaucracy. Department of Defense Directive 3000.3 Policy for Non-Lethal Weapons, mandates the establishment of a joint service organization responsible for the development and employment of nonlethal weapons, defines nonlethal weapons and designates the Commandant of the U.S. Marine Corps as the executive agent for the program. The Joint Non-lethal Weapons Directorate's mission is to facilitate outfitting the warfighter with operationally effective nonlethal weapons. The field artillery community may choose either to establish a headquarters collocated with the Joint Non-lethal Weapons Directorate or to establish a satellite office, possibly at Fort Sill, Okla. The field artillery then would oversee development, evaluation and recommendation of nonlethal projectiles,

Soldiers assigned to Bravo Company, 2nd Battalion, 77th Field Artillery Regiment, 4th Brigade Combat Team, 4th Infantry Division, prepare to fire an M119 light-tow howitzer during live-fire training at Combat Outpost Monti in the Kunar province of Afghanistan, Dec. 2, 2009. (Photo by SGT Teddy Wade, U.S. Army)

Figure 1: The spectrum of conflict

Figure 2: Full spectrum artillery



systems and platforms for both the air defense and field artillery communities for use in full-spectrum operations.

Any efforts to lobby further research into the full-spectrum artillery concept will not be easy, as current nonlethal weapons funding is historically negligible in comparison to the entire U.S. Department of Defense budget. According to the Department of Defense Office of Management and Budget, wartime spending continues to grow and has more than doubled from fiscal year 2001 ($316 billion) to fiscal year 2009 ($662 billion). *National Defense Magazine* states that nonlethal weapons comprised only .010 percent (approximately $65 million) of the total 2009 budget. This is about the equivalent of one-twentieth of a B2 Bomber, half of a V-22 Osprey, about three AH-64D Apache helicopters or about a company of M-1 tanks.

As the wars in Iraq and Afghanistan approach the $1 trillion mark, one must accept that lobbying for funds will be difficult, and the program will be looked at with skepticism. Any added funds allocated for full-spectrum artillery either will contribute to an already mounting debt or come at the cost of other systems.

Future fires. The future of the field artillery should not be a choice between two bleak options (demise and marginalization). There is another option, and with it, the possibilities are incredible. By choosing full-spectrum artillery, senior field artillery leaders will embark upon a journey into unexplored territory. Indirect fire nonlethal munitions will be an important step toward rethinking how armies deploy and fight wars. The 2004 Force Application Functional Concept states, "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."

As the U.S. military becomes less engaged with conventional conflict and more with irregular warfare, a greater need will emerge for developing the appropriate skills and weapons. Tactical operations will become less about death and destruction and more about establishing security and rule of law and restoring government power.

There remains little doubt that nonlethal weapons are an effective resource for those seeking to curb the effects of catastrophic damage associated with lethal munitions. Any weapon that reduces collateral damage to property or reduces the potential for killing noncombatants is beneficial in counterinsurgency. The difficulty lies in responding with just the right amount of force. Respond too lightly and risk unacceptable levels of military and civilian casualties and a loss of various forms of legitimacy associated with the mission. Respond with too much force and risk losing the moral high ground, public support and/or support of the population. Full-spectrum artillery may provide some answers for these tactically and strategically complicated problems.

This article concludes that full-spectrum artillery might prevent field artillery branch marginalization, curb catastrophic damage and potentially change the way the U.S. military approaches irregular warfare. Nonlethal fires can enhance the efforts of American forces in conflict and post-conflict environments and should be integrated into current military operations. If the U.S. integrates full-spectrum artillery into its operations, it is likely that our allies and other nations will follow. If the U.S. casts doubt on the efficacy of full-spectrum artillery in hostile operating environments, it is likely to impede the development and deployment of these weapons. To be sure, future fires should be as flexible, adaptable and agile as the Soldiers tasked with employing them.

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