



Loading M-79 with
non-lethal round at
Camp Lejeune.

Non-Lethal Weapons

A Progress Report

By STEVEN METZ

Most advanced states have begun exploring the integration of non-lethality in their militaries, and many have elaborate programs to develop the weaponry and operational concepts to use them. Although the evolution of technology facilitates the development of effective non-lethal weapons, shifts in the strategic environment and nature of warfare also give rise to interest in their utility.

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Over the last decade defense officials and strategic thinkers around the world concluded that a fundamental change in the conduct of war—a revolution in military affairs (RMA)—is underway. Most agree that non-lethality is part of this development. But except for a few futurists, defense analysts and military leaders regard non-lethality as a sub-theme in force planning, largely because the revolution in military affairs has been considered technological and operational, assuming that the nature of war will remain constant. But global trends suggest otherwise. Some changes underway in the form and substance of warfare indicate that more lethal forces are not

U.S. Marine Corps (Blair Parrish)

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Simulating crowd control, United Arab Emirates.



13th Marine Expeditionary Unit (Don L. Maes)

what is needed, but rather greater precision and strategic utility in an interconnected world.

Non-lethality can play a significant role, but its continued development is not guaranteed. To help it reach its full potential, policymakers must treat such weapons as fundamental to the revolution in military affairs. Thinking in this field must become historic and strategic.

Lost in the Woods

Few publications and discussions that stimulate thought on the revolution in military affairs accord non-lethality a central role. This is not to say that the defense establishment is disinterested. The Secretary of Defense established the Non-Lethal Warfare Study Group in 1991. Overseen by the Under Secretary of Defense for Policy and chaired by the Assistant Deputy Under Secretary of Defense for Policy Planning, the group supported policies and programs to foster development and fielding, advocating an approach modeled on the Strategic Defense Initiative. But for the Pentagon this proved to be too much too soon. When the Under Secretary of Defense for Acquisition argued that existing programming architecture could adequately handle non-lethal weapons, his opposition helped blunt the findings of the study group.

Military operations in Bosnia, Somalia, and Haiti as well as the domestic disaster at Waco revived interest in the subject. The impetus came

from commanders rather than strategic theorists. Based on his experience during the withdrawal of United Nations forces from Somalia, Lieutenant General Anthony Zinni, USMC, became the prime advocate for developing and fielding non-lethal weapons. By identifying counterproliferation, information warfare, peace operations, and military operations other than war as high priorities, the Commission on Roles and Missions lent support to advocates of non-lethal weaponry. In 1996 the Office of the Assistant Secretary of Defense for Special Operations and Low Intensity Conflict issued DOD Directive 3000.3, *Policy for Nonlethal Weapons*, designating the Commandant of the Marine Corps as executive agent for the program.

A memorandum of agreement among the services dated January 1997 established the Joint Non-Lethal Weapons Directorate (JNLWD) that reported to the Commandant. This organization, dealing strictly with joint non-lethal programs and with tactical applications, soon developed a joint concept for non-lethal weapons. JNLWD, in cooperation with the joint experimentation staff (J-9) at U.S. Joint Forces Command, briefed its plan to the Joint Coordination and Integration Group in 2000. JNLWD also has academic partners. For example, the University of New Hampshire has formed a Non-Lethal Technology Innovation Center and Pennsylvania State University



U.S. Marine Corps (Nathan J. Feibert)

Spraying fake pepper spray during exercise.

organized the Institute for Non-Lethal Defense Technologies to complement efforts in this field.

Internationally, the NATO Defense Research Group, for instance, has held seminars to find common ground. In a policy statement issued in 1999 the Alliance declared

It is NATO policy that non-lethal weapons, relevant concepts of operations, doctrine, and operational requirements shall be designed to expand the range of options available to NATO military authorities. [Non-lethal weapons] are meant to complement the conventional weapons systems at NATO's disposal.

JNLWD has endeavored to winnow out non-lethal technology unlikely to be either effective or affordable and focused on suitable technologies.

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Recently, for instance, it attracted attention by unveiling a vehicle-mounted active denial system, with which a transmitter fires two-second bursts of focused microwave energy that causes burning sensations on skin up to 700 yards away. This system can break up an unruly mob without killing or maiming.

Various service programs operate in parallel with JNLWD. The Marine Corps has been the most active in assessing and developing non-lethal weapons. While the Air Force has shown less interest, it has made some astute contributions. The Army set the parameters for its efforts in 1996 with the publication of Training and

Doctrine Command Pamphlet 525-73, *Concept for Nonlethal Capabilities in Army Operations*, while many Navy programs are designed to work in conjunction with the Coast Guard on the drug interdiction mission.

JNLWD and service programs focus on non-lethal technology with tactical applications. But most work on the strategic, political, and normative levels has taken place outside the defense establishment at national laboratories and institutes. Moreover, there is interest in Congress where Senator Bob Smith, the chairman of the Acquisition and Technology Subcommittee of the Senate Armed Services Committee, became a vocal supporter, arguing that non-lethal weapons “can offer U.S. and NATO troops the capability to manage, contain, and diffuse certain volatile and low-intensity situations.”¹

Obstacles by the Score

Despite various efforts, non-lethality has remained on the periphery of RMA thinking. Part of the problem is the structure of the defense establishment. A study conducted by the Council on Foreign Relations in 1999 found that JNLWD had not attained the degree of authority intended by Congress because the services want to maintain full control over weapon and system development. Although such problems can be easily overcome, conceptual obstacles are more difficult. Official pronouncements repeatedly stress that the revolution in military affairs will make the Armed Forces more lethal. Mainstream thinking is forward looking with regard to technological and operational concepts but conservative when it comes to the global strategic environment and the nature of conflict. It focuses largely on state-on-state warfare where a belligerent commits aggression for geostrategic reasons or to seize natural resources. Subsequently, a U.S.-led coalition or the United States alone can then project military power into theater through a campaign designed for a decisive outcome, usually the reversal of the aggression. The American revolution in military affairs thus sees future armed conflict as a reprise of the Persian Gulf War.

Yet state-on-state warfare involving conventional combined-arms combat may not be the most common or even the most strategically significant form of armed conflict in the 21st century. War may in fact undergo a devolution. Some analysts contend that the proliferation of weapons of mass destruction, particularly nuclear weapons, will obviate traditional state-on-state war.² This argument has pushed farther: the increasing interconnectivity of the modern world on all levels could make the cost of old-fashioned war to seize territory or resources too high for expected benefits. There may be instances when an



Subduing aggressor with flexi-cuff.

U.S. Marine Corps (Nathan J. Feibert)

advanced states undertake humanitarian intervention, fight organized crime, or combat terrorism from anti-globalization or other radical movements, a military capable of decisive victory against another state may not be very helpful. Such operations will be fraught with moral and political ambiguities and transparent as the entire world looks on. The line between law enforcement—with its restraints on the use of force—and the military will be blurred. And often those against whom force is used will not be traditional enemies, but rioters, protesters, narco-traffickers, smugglers, or terrorists commingled with non-combatants. Decisive force and lethal precision munitions will have limited utility. Information

non-lethality will be a defining characteristic of the second revolution in military affairs

technology will allow images of the use of force to be transmitted around the world in real time. Future warfare will be theater as much as combat. To sustain public support for the use of force, governments will have to go to lengths to limit its destructiveness.

The above suggests that advanced states should pursue a parallel revolution designed specifically to deal with nontraditional and non-state threats. Like the *Joint Vision 2020* revolution, it will rely on information. But the sort of data needed will be culled from sources other than an electronic sensor-based system of systems underpinning the first revolution in military affairs. Miniaturized robotic sensors and human intelligence will be more important than overhead or orbital sensors. More importantly, the information will be less concerned with the location of physical assets than psychological factors that are beyond satellite imagery. Moreover, this second revolution must be based on minimum destruction since the theater will often be an urban environment crowded with noncombatants. The enemy may need to be restrained rather than killed. Non-lethality will thus be a defining characteristic of the second revolution in military affairs rather than a peripheral one as it is in *Joint Vision 2020*.

Dropping the Hammer

The core dilemmas for the Armed Forces will be finding ways to execute traditional military operations while faced with weapons of mass destruction and missile technologies and performing stability and relief operations in weak or failed states. The old adage that “When your only

objective has such emotional appeal that a state may be willing to pay the price to gain it, but in most cases, aggression is likely to be incremental and carried out by proxies rather than through armed intervention. The revolution in military affairs, in other words, may be a classic example of preparing for the last war.

Three broad sources are likely to pose the most common and complex security problems in coming decades: domestic disruptions and instability; economics or ethnicity; and organized crime or other transnational issues. None are amenable to the revolution in military affairs, at least as it is described in *Joint Vision 2020*. When

tool is a hammer every problem looks like a nail” also holds for the militaries of advanced states. Most are highly skilled forces designed to defeat other states. They are capable of decisive victory when the enemy is identified and the rules of engagement are permissive. In the future some states are likely to use the military hammer

on a boiling pot and thereby postpone resolution rather than facilitate it.

Most ominously, the second RMA variant could threaten individual rights. Miniaturized sensors could erode privacy, which is a core Western value. And non-lethal weapons would be considered usable under more circumstances. Particularly frightening, non-lethal weapons could have psychological rather than physiological effects. For instance, would restrictions on using a weapon that causes fear be less than those of a firearm? Since most restrictions on the use of force, whether by militaries or law enforcement agencies, are based on deadly force, the development of effective non-lethality will require reformulating those rules to preserve human and civil rights. This reformulation will be a vital component of the second variant of the revolution in military affairs.



2nd Marine Division, Combat Camera (Jennifer L. Webber)

Security training in Croatia.

against threats that are not nails. But advanced states will eventually find that forces that are trained, equipped, and organized for traditional warfighting missions are not effective in countering new threats. They will have to either develop alternative organizations or radically transform existing ones. The second revolution in military affairs with its dependence on non-lethality will then take shape.

The second RMA variant might prove beneficial. States that embrace it might be effective at humanitarian intervention, peace operations, counterproliferation, and counternarcotics. Moreover, they might not cause inadvertent destruction and thus sustain public support. But the second variant could have adverse outcomes. Non-lethality can allow decisionmakers to avoid tough choices associated with using force. Or if force is used without bloodshed, decisionmakers might be tempted to intervene in internal conflicts where they might otherwise have resisted. In the long term, lowering the threshold for intervention may be a mixed blessing. Lives may be saved but the net result may be increased global violence. Sadly, most internal conflicts must run their bloody course before the antagonists are ready for resolution. Serious negotiations only occur when both sides tire of violence. Outside intervention may hold the lid

Strategists tend to focus on the technological aspects of conflict or on strategic, operational, and tactical issues over the political and normative framework of warfare. This applies to thinking on the revolution in military affairs, which attempts to harness emerging technology with the larger strategic framework and assumes that both who fights and under what conditions remain constant. But trends suggest that traditional interstate war using the time-tested laws of conflict is unlikely to be the primary security challenge of the 21st century. In all probability, non-lethality will be key in responding to new threats. But developing non-lethal weaponry will create a need for altering or reconstructing the political and normative framework of armed conflict. Ultimately, this will be the most difficult and important challenge. **JFQ**

NOTES

¹ Bob Smith, “Nontraditional Missions Demand Less-Than-Lethal Weapons,” *Armed Forces Journal International* (June 1996), p. 55.

² Martin Van Creveld, *The Rise and Decline of the State* (Cambridge: Cambridge University Press, 1999), pp. 337–54; and *The Transformation of War* (New York: Free Press, 1991), pp. 194–227.