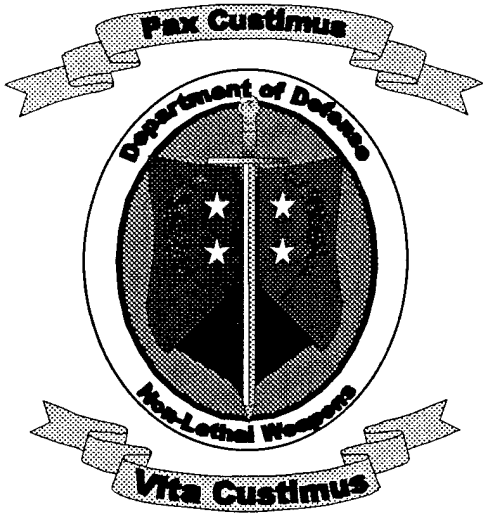
NON-LETHAL WEAPONS AND THE WARFIGHTER



Lieutenant General Martin R. Steele
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The Joint NLW Concept

"Guiding Principles"

- Leverage High Technology
- Enhance Operations
- Augment Deadly (Lethal) Force
- Provide Rheostatic Capability
- Focus on Tactical Applications
- Expeditionary
- Acceptable
- Reversible Effects

The Joint NLW Concept

"Core Capabilities"

- **Counter-Personnel**
  - Crowd Control
  - Incapacitate Individuals
  - Deny Access
  - Clear Facilities/Structures
- **Counter-Materiel**
  - Area Denial (land, sea and/or air space)
  - Disable/Neutralize Equipment or Facilities

SPEECH OF

MARTIN R. STEELE, LIEUTENANT GENERAL, U.S. MARINE CORPS

DEPUTY CHIEF OF STAFF

PLANS, POLICIES AND OPERATIONS

HEADQUARTERS MARINE CORPS

AT THE

NON-LETHAL DEFENSE III CONFERENCE

SPONSORED BY NDIA

AT JOHNS HOPKINS UNIVERSITY

25 FEBRUARY 1998

Thank-you very much, Dr. Alexander, General Greenberg**,** Mr. Swett, Ladies and Gentlemen. It is indeed an honor and a great opportunity for me to be able to address you today at the opening of the Third Non-Lethal Defense Conference here at Johns Hopkins. I want to personally thank, not only NDIA and Johns Hopkins for their continued effort and commitment in regard to ensuring stability and security around the world, but also to all of you in this room and our allies who are present who have made lifetime commitments to this now emerging, new area of non-lethal weapon development. I hope the tenor of my remarks and the general thrust of the conference are both indicative of the forward progress we all have witnessed over the last few years in this relatively new aspect of warfighting. I believe all of you present, those in government, our military professionals, those in law enforcement, and our friends in industry realize that while we have in fact accomplished much in the way of technological advances, we still have much more work to do. That work involves more than the technologies you will hear about here the next two days; it has to do with things like national policy, possible organizational changes, training, tactics, techniques and procedures, concepts and doctrine. As both of the other speakers have already stated the program as scheduled is extremely busy and also very exciting.

My purpose today is to call your collective attention to the needs of the warfighter, our Soldiers, Sailors, Airmen, and Marines. However, before we go there, I do want to publicly acknowledge the fine efforts that have taken place since your last conference in March of 1996. At almost the same time as your last event, the Secretary of Defense assigned the Commandant of the Marine Corps the responsibility as Executive Agent for non-lethal weapons in the Department of Defense. During the months that followed much work was oriented towards coalescing the many fine efforts already underway throughout our Armed Forces. While a joint services memorandum of agreement was being formulated and approved, several Integrated Product Team and working group meetings were held. The results of these meetings focused our energies on a more narrowly defined set of technologies and began the process of developing the organizational structure necessary to manage the Department of Defense Program for non-lethal weapons. Tomorrow morning you will hear a detailed breakout of this management concept from Colonel Andy Mazzara United Staes Marine Corps, who is our Non-Lethal Weapons Program Director, and you will receive a full briefing on the current non-lethal weapons projects we are currently undertaking. His presentation, which is essentially focusing on an Army-Marine effort, will highlight an important aspect of our program - that is, the collaborative, team aspect.

The U.S. Army has done some terrific work in recent years with several advanced technological concepts which, should they prove out, will definitely enhance our capabilities throughout the world. They have also been laboring with all urgency to formalize the fielding of what I would term our “low tech” non-lethal munitions. It is important to note that our Army is the actual workhorse in the research and development arena for non-lethal weapons. The Marines while providing overall management of the Program have pitched in with several key initiatives in the area of doctrine, training, and experimentation; all in close cooperation with the Army as well as our other two sister Services. The Marines have also worked hard to ensure we keep non-lethals viable as one of the potential solutions to the challenge presented by the recent trends in the requirement to find alternatives to anti-personnel landmines, and have led the way with world-wide deployments of forces, namely our forward-deployed Marine Expeditionary Units - Special Operations Capable that are around the world. That is to enhance their abilities with actual non-lethal operational capabilities. The Navy while faced with particularly vexing challenges of how we integrate non-lethals into our maritime operations have provided key leadership in several technological areas, such as our unmanned aerial vehicles and vessel stoppers programs. They are close to selecting and beginning the development of the technology we need to stop ships of various

sizes throughout the seas, and are also moving aggressively toward a new non-lethal strike capability for our unmanned aerial vehicles. The Air Force which expends considerable resources in the strategic arena has now become fully engaged with our next generation of directed non-lethal energy weapons. This technology although still in its infancy promises to provide us additional standoff for both ground and air operations. Our Program has also been supported by the U.S. Special Operations Command who has kept us on the mark in terms of special warfare requirements. All of these efforts are quite exciting in and of themselves. But, together the potential of their synergistic impact on our warfighting capability is especially noteworthy.

In July of last year, the Marine Corps officially opened the doors of its new Joint Non-Lethal Weapons Directorate at Quantico, Virginia. Jumping on a fast moving train, but supported by a dedicated core of experienced non-lethal experts, the Directorate has quickly demonstrated control and oversight of the day-to-day activities for the Commandant of the Marine Corps as Executive Agent. In just under eight months the Program has initiated actions to support our joint forces in Bosnia, begun experimentation on a sea-based, non-lethal aerial strike capability to be deployed later this year, started focusing the non-lethal training concept for all the services, kicked off the process to amend our Joint Standing Rules of Engagement, established a comprehensive CD-Rom based non-lethal weapons

database, participated in national policy discussions with the NSC Interagency Working Group, and, with the significant help from the Marine Corps Combat Development Command at Quantico and the other Services, published a Joint Concept for Non-Lethal Weapons, a POM-00 budget submission, an an annual report. If you need to know what's going on in the program its simply a matter of opening the Non-Lethal Weapons Homepage on the Web, or, if you're in government, you can have the Directorate to forward you a copy of their bi-monthly newsletter.

Is this blowing our own horn ? Maybe, but I would prefer to consider it blowing a collective bugle call to continue the aggressive movement forward toward the next century and foster new ways of bringing our capabilities to the modern battlefield. Here is where I would like to move past the programmatics and back-patting and call your attention to the real WHY of our non-lethal weapons development program. And that is, the warfighter !

As so many of you are familiar, the use of non-lethal weapons which includes riot control agents, have been with us for many years. Their use has generated animated discussion in the public forum concerning the potential abuse of these technologies or their possible negative influence on the waging of warfare. These type concerns typically have surrounded the introduction of any new class of weaponry throughout the history of warfare. I understand the concerns, as all of you

do, and agree with the call to ensure against abuse of any of these weapons. Yet, today we are standing on the front edge of a whole new concept of warfare. The young warriors we are training to defend both our national and global security interests are faced with emerging environments, asymmetric environments, and new, sometimes daunting situations filled with new challenges that we have never experienced before. It is indeed our responsibility as the policy and decision-makers within the Department of Defense, and I believe there is also a close comparison with similar challenges facing the Department of Justice, to ensure that our young warriors, policemen, and law enforcers are properly equipped and trained to meet these challenges in the 21st century.

We began this current odyssey as many of you recall, and some of you were with him, with General Tony Zinni's call for action from the Somalia experience in 1994. This urgent request from a highly regarded Marine field commander lent credibility to the many fine efforts going on in disparate locations around this country and, for that matter, thoughout the globe. Suddenly we were all awakened to the possibilities of a new set of tools our commanders might be able to call upon to deal with crises, especially in peacekeeping and humanitarian assistance operations, in a more humane, and in a more effective manner - while still maintaining adequate force protection capabilities. Haiti and, more recently, Bosnia have only served to reinforce that outlook. Even more so, if you stop and examine

the evolving face of our global community, it quickly becomes apparent that there is a growing movement of large population segments toward the urban centers. Thus creating a more asymmetrical environment. And, just as significant, almost 70% of these urban areas are located within the littorals or within 300 nautical miles of the sea coasts. The urbanization of our world, combined with the rising importance of non-state actors, such as terrorist groups and intra-national forces, have increased the potential requirement for the commitment of our forces and the requirement to develop these technologies.

Our young men and women deploying to meet our commitments overseas have found themselves immersed in new operational environments unlike those in the past. These 18-30 year olds are realizing that their interactions with noncombatants, in many cases in full view of the world press, are not the equivalent of the more straightforward, albeit more violent, confrontations on the traditional, conventional battlefields of past wars. We need to ensure that all our efforts, that all of us, are focused on providing these forces, and these young men and women, the right tools to get the job done.

With the DoD Policy Directive serving as the foundation for the Program, two months ago I approved the Joint Concept for Non-Lethal Weapons on behalf of the Commandant of the Marine Corps. This is a cornerstone document, and a historic one, that provides the framework for all of our work with non-lethal

weapons. And, when I say “all” I am referring to our work in the policy, concepts, doctrine, tactics and training areas, as well as the work we are doing in research and development. Each of these areas presents specific challenges to ensure we properly integrate all aspects of non-lethal systems into a coherent, cohesive capability for our young men and women.

The Joint Concept, which is available to you to download off our Non-Lethal Weapons Homepage, establishes several guiding principles and identifies the core capabilities which focus what we are doing with non-lethal weapons and the technology available to us now and in the future. Let me spend just a little time summarizing those principles which we consider to be very important to our efforts.

As you here in this audience are acutely aware, there is a dynamic, fast-paced industry both in and outside the United States where these technological advances are occurring as we speak. Many of you are involved in those efforts. Our ability to exploit these advances and apply innovative, unconventional thinking will determine our future success with non-lethal weapons. We have the Army Dismounted Battlespace Battle Lab, the Marine Corps Warfighting Lab, and more recently the Air Force’s Force Protection Battle Lab, all in the hot pursuit of nontraditional concepts and out-of-the-box thinking. This work will support our development of truly effective non-lethal systems for future military operations.

These new systems must be compatible with, and easily integrated into existing or evolving operational concepts. Weapons to be carried by our individual Soldier, Sailor, Airman, or Marine, must be the lightest, and simplest we can make them. If we can use existing delivery means, that is the better. Larger non-lethal weapons that are fielded must be compatible with our tactical and strategic transportation systems. Organizational structures and current or soon-to-be-fielded training support systems must be able to absorb the new non-lethal technology without major modification. Can we do this ? Can you do this ? I believe we can through the imaginative application of operational concepts developed within our battle labs.

Non-lethal weapons should never be deployed without a lethal force backing them up. They augment, but do not replace lethal force. In fact, in my opinion, it is the lethal capabilities we possess that lend credibility to the employment of these non-lethal systems, and make them that much more effective. Charles Swett will talk to you next, and you will see where this principle is also embodied in our Department of Defense policy on the employment of these weapons.

We have found across the Services, and especially among our field commanders, a repeated requirement for a “tuneable” system, one that is “rheostatic”, if you will, in terms of its lethality and/or non-lethality. This principle reaches back to the previous one. Our commanders need and want a non-lethal

capability that they can easily and quickly tune up or down, or switch quickly to a lethal effect.

As we started this Program, the existing work being done and the most pressing need in the field due to world events was the requirement for focusing our efforts on the tactical application of non-lethal weapons. I am pleased to say that we are beginning to see positive signs that we are getting our hands around that requirement and organizing our R&D processes to address the tactical challenge we face. However, my personal view is that these technologies have a broader applicability across the spectrum of conflict. It is apparent to me that we need to continue to press forward on our tactical applications while we begin to look out and up toward the strategic environment that we face. This Program will do that over time, which I believe, is consistent with the original intent of both the Congress of the United States and Office of the Secretary Defense.

It was the belief of our joint community that assisted in drafting the Concept, and it is my personal belief, that as we ready our U.S. forces to defend national interests around the globe, the rapid projection of our military power demands that we and the equipment we bring must be expeditionary in every respect. We normally include the terms mobility, endurance and sustainability when we talk about being expeditionary. Whether at the tactical, operational, or strategic level, our weapon systems must have a small enough “footprint” to

enhance mobility, not burden it. I believe our Concept highlights this by stating that "commanders must be able to deploy and employ non-lethal systems without sacrificing other critical offensive and defensive capabilities and options." Expeditionary also talks to how rugged, or robust, these systems are - they must fit in the back of a truck or HMMWV, a C-141 or on an amphibious ship. Will they hold up to the many environments in which we often find ourselves ? And, can we support them logistically over great distances ? I believe we can through the innovative use of miniaturization and state-of-the-art materiels.

You see the word "acceptable" up there on the screen, and that should conjure up a number of different questions in your mind, and rightfully so. In the increasingly urbanized environment of our operational commitments world-wide, we are seeing an increasing involvement with noncombatants, especially in deployments in support of peacekeeping and humanitarian assistance operations. This more frequent interaction with civilians, often accompanied by the full coverage **of** the world news media, demands a deeper appreciation by our young Soldiers, Sailors, Airmen and Marines of the complexities associated with the use of force. In addition to established policy, our non-lethal systems must stand the test of legal, social, and ethical acceptability more so now, than ever before.

As an aside, but related to this issue, the Joint Non-Lethal Weapons Directorate has established a relationship with one of our Country's other premier

research universities. Through the auspices of the Applied Research Lab at Pennsylvania State University, essentially built over the last 50 years by the U. S. Navy, the Joint Non-Lethal Weapons Program has initiated a process by which we will begin to look at test data collected as it becomes available on emerging non-lethal technologies. That test data for various systems in development will be assessed by a panel of quasi-independent experts from multi-disciplinary fields to determine the projected acceptability of these systems when they are fielded. This type of assessment is critical, especially early in the Program, to ensure we don't go too far down a road, and spend a lot of money, and then find out that we can't employ a particular system because, not only of its effectiveness, but it is not politically or socially acceptable in the environment which we are facing. There's much more work to be done in this area which has been til this point pretty much ignored.

The last principle you see up there talks to the intended design of our non-lethal weapons. It is expected that any effect of these systems will be reversible. Time is the primary determinant as far as the reversibility issue is concerned. We have not yet specified exactly what "time" means, but in my mind, we are talking about minutes and hours. This is a good point to highlight that the reversibility aspect, as is the whole issue of "non-lethality", is one of intent. The nature of our military commitments today makes us realists in this regard. Despite our best

intentions, we may see non-lethal weapons employed, due to circumstances, where the effects can not be specifically guaranteed. In other words, there is no guarantee on the battlefield or during a highly charged military operation, that non-lethality will always be the end result of the employment of these weapons. As challenging as this aspect is, I am confident that we are particularly sensitive this and to the need to maximize the humanitarian aspect of these weapon systems. As an example, the concerns of the world community about "blinding lasers" has been and continues to be a guiding factor in our development of this type technology and will be one of the major areas of discussion over the next two days. I think you are all aware that we currently do not have any joint laser projects at this time within this Program. This principle in developing non-lethal weapons must be well understood by our potential adversary, by our own forces, by the media, and by people throughout the world.

Let's look briefly at the basic, or core, capabilities we intend to develop for the warfighter. While the guiding principles tell us how we need to develop non-lethal weapons, the core capabilities describe what it is we want these systems to do. These capabilities can be divided into two basic categories, counterpersonnel and countermaterial. Considering the more typical scenarios we envision in the near-term for the employment of non-lethal weapons, namely peacekeeping, humanitarian assistance and general military operations other than war, we are actually in fairly good shape at the close ranges for crowd control and addressing

individual threats. Our projects involving various kinetic energy systems such as the 40 and 66mm munitions should support our needs in that area. However, where we are lacking is in the area of "standoff". Our unmanned aerial vehicle will assist, but I believe we have plenty of work ahead of us in terms of delivering non-lethal effects from longer ranges. Area denial remains challenging and we are only beginning to scratch the surface. In developing this capability, we will undoubtedly also begin to address the current challenge to find alternatives, as I mentioned, to our anti-personnel land mine systems. There should be no doubt in anyone's mind that non-lethals must be considered in this regard. In the near-term, non-lethals may serve as enabling technologies, by slowing or delaying an adversary while we bring more conventional fire support to bear on the target. However, in the future, you could imagine a non-lethal capability to deny access or movement which will deter, delay, channelize, but not kill - maybe electromagnetics and/or acoustics will play a role in that area.

If you look at our countermaterial work, there are some significant technological challenges there as well. In addition to area denial, we will also look to disable vehicles, equipment, and ships at sea without endangering the operators or passengers. In addition to the projects we have going such as our vehicle and vessel stoppers, there are a lot of conceptual ideas we have found, but we are still a good ways off from being able to halt a 400 foot tanker in the northern Arabian Gulf

for inspection when it doesn't want to be stopped, or even a non-descript third world military vehicle who speeds passed one of our security checkpoints.

As you can see, we all collectively have a pot full of work in front of us. The Department of Defense Program, I believe is headed in the right direction. The initial effort is one of organization and focus, and we're tracking well in that particular regard. For the long haul, we need to continue to demonstrate the ability to field real capabilities in a quick and efficient manner and look at broader applications of non-lethal weapon systems beyond the tactical level of war in a more comprehensive approach to ensure we have the capabilities on the battlefield. Our young Soldiers, Sailors, Airmen, and Marines will make these weapons and munitions work as much as anyone in this room, anyone in the world, because they have the job to do. We owe it to them, and the rest of the people of the world, the peacekeeping people of the world, who support and pay for what we do, to put the right technology in their hands that enhances our warfighting capabilities and meets the challenges they will face during future military commitments around the globe.

I want to thank NDIA and Johns Hopkins again for offering me the honor and the opportunity to speak to you today on this important topic, and thanks to all of you for your attention and for your commitment to this critical aspect of warfighting. Have a great two day conference.