

# Joint Non-Lethal Weapons Program



Today's complex missions highlight the need to equip our troops with non-lethal weapons.

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Third Quarter Fiscal Year 2007

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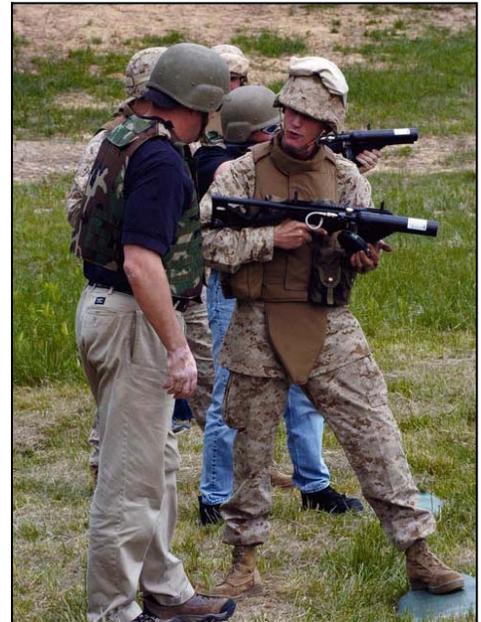
## Non-Lethal Weapons displayed at Marine Congressional Day

The Joint Non-Lethal Weapons Directorate (JNLWD) participated in “Marine Day” held May 4, 2007, at Marine Corps Base Quantico, Va. The event was designed to showcase current and future capabilities to congressional staffers and enhance the staffers’ understanding of the Marine Corps.

Congressional staffers were flown by Marine helicopters from Andrews Air Force Base to Marine Corps Air Facility, Quantico. Once they debarked from the aircraft, they enjoyed an air show and Landing Craft Air Cushion (LCAC) demonstration, followed by multiple displays arrayed in two hangars. The JNLWD display consisted of various blunt impact weapons, vehicle and boat stopper systems, and a static display of the Active Denial System (ADS). Participants were able to utilize a computer simulation program that placed them in the ADS operator’s seat and allowed them to engage simulated targets capable of showcasing the extended range greater than kinetic non-lethal weapons.

The most popular Non-Lethal Weapon (NLW) was the X-26E Taser. Staffers were encouraged to fire the Taser at a foil target; almost fifty of them did.

After a lunch of Meals Ready to Eat (MRE), the staffers were flown to a range to fire various Marine Corps weapons. As pictured in the adjacent photo, staffers had a chance to fire the FN303 less lethal launcher. This first-hand firing of non-lethal weapons allowed staffers to familiarize themselves with the benefits and ease of operations of non-lethal systems. At the completion of the live fire exercise, the staffers boarded helicopters for the return trip to Washington, D.C.



**Congressional staffers get their hands on non-lethal weapons at Quantico’s Marine Day May 4, 2007.**

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## United States European Command (USEUCOM) and Non-Lethal Programs Supports Exercise NOBLE SHIRLEY

The three main goals of the United States European Command (USEUCOM) Non-Lethal Weapon (NLW) program are to: increase awareness in NLWs, enhance USEUCOM's interoperability with partner nations, and improve the NLW capability of USEUCOM and its partner nations. All three of these goals were accomplished recently during Exercise NOBLE SHIRLEY, a bi-lateral training exercise between the United States Marine Corps and the Israeli Defense Force (IDF).

In support of NOBLE SHIRLEY, the USEUCOM NLW Program deployed a Mobile Training Team (MTT) composed of Marines from U.S. Marine Forces Europe. During an intense two-day training period, the MTT, headed by Captain Roberto Rodriguez and including Staff Sergeants Christopher Carpenter, Bradley Loudon, and Eric Queen, conducted NLW training for U.S. Marines, demonstrated non-lethal techniques, tactics, and procedures (TTP) and conducted a non-lethal munitions familiarization firing for IDF soldiers and senior officers.

The primary mission of the MTT was to instruct Marines from Fox Company, 2d Battalion, 23d Marines in riot control techniques and employment of non-lethal munitions. For the first time, and after coordination with the Inter-Service Non-Lethal Individual Weapons Instructor Course (INIWIC), the MTT taught crowd control formations similar to those taught by the British Public Order School. These formations are more open than those traditionally used by U.S. forces and allow a greater degree of flexibility. The training was well received by the Marines, who enjoyed the challenge of the new technique and was also looked at with great interest by the IDF. Marines were also trained on the proper employment of non-lethal munitions and given the opportunity to fire a number of current non-lethal munitions.

Following the Marines NLW training, the MTT conducted a TTP demonstration and non-lethal munitions familiarization firing for a platoon of IDF border guards. Also present were a number of IDF general officers from the Israeli Golan Heights, West Bank and Northern Commands. Marines and IDF soldiers were able to exchange information and TTP, as well as fire and compare each others non-lethal munitions.

Overall, the MTT was a huge success, both in bringing current NLW training to U.S. Marines and in ensuring continued coordination and engagement with one of our partner nations.



Marines from Fox Company, 2nd Battalion, 23rd Marines practice a man-down drill during NLW training.



Instructors from Marine Forces Europe (MARFOREUR) conduct NLW training with Fox Company, 2nd Battalion, 23rd Marines.

## FY07 Science & Technology and Human Effects Projects Review

The annual Joint Non-Lethal Weapons Program (JNLWP) Science & Technology and Human Effects Projects Review took place in May 2007 in Dumfries, Va. Project managers presented the technical and programmatic status of their projects, as well as their proposals for FY08, to Joint Non-Lethal Weapons Directorate personnel, service representatives, and the JNLWP Technology Evaluation Review Panel. Fifteen projects were presented in all. The JNLWP will finalize FY08 S&T investment plans and present them to the Office of Naval Research Code 30 in the June/July timeframe. An FY08 Broad Agency Announcement soliciting relevant and innovative research will soon be available via the JNLWP website, <https://www.jnlwp.com/solicitation.asp>.

### Acoustic Hailing Device Demonstrated

The Applied Research Laboratory (ARL) at Penn State recently completed development and demonstrated the first of a family of sound projectors dubbed "Target High Output Responder (THOR)". The demonstration took place at the Mid-State Airport in Philipsburg, Pa., April 26, 2007. Attendees included potential users and members of the Joint Non-Lethal Weapons Program (JNLWP) community.

The demonstrated prototype non-lethal acoustic hailing device, THOR-8L system, is a high-output, phased acoustic array. By using available commercial off-the-shelf components, each THOR can be customized to meet specific mission requirements and cost constraints.

At the demonstration, participants had the opportunity to hear the variations in the THOR-8L's output Sound Pressure Levels (SPL) as the beam focus was adjusted from highly focused to very broad. Participants also took active part in comparing the voice command intelligibility of the THOR-8L to that of current acoustic hailing device systems and observed the device's electronic and electro-mechanical beam steering capability.



**Target High Output Responder (THOR-8L)  
Phased acoustic array**

Finally, the demonstration included a prototype mockup of the next generation THOR-16S system, which integrates the high-output phased acoustic array with a high intensity light array. Eventually, these component arrays will direct light and sound energy in synchrony with a camera used by the operator to lock on a target.

### Active Denial Technology Path Forward Working Group

Scientists, engineers, program managers, service representatives and key Active Denial Technology (ADT) subject matter experts met in April in Dumfries, Va., to discuss the path forward for ADT. The goal of the working group, facilitated by John Keenan, Joint Non-Lethal Weapons Program (JNLWP) Science & Technology (S&T) Program Manager, was to understand and scope service requirements for next generation systems, review promising future component technologies, and begin to shape an investment plan to achieve stated requirements in a timely and cost efficient manner.

The Army, Navy, and Air Force presented briefs that highlighted their platform priorities, desired performance parameters (including range, coverage, and effect), relevant mission scenarios, and other key systems attributes, such as shoot-on-the-move capability. Technology presenters shared information and data on various source technologies under development, including harmonic gyrotron, sheet beam klystron, solid state and fiber laser-based sources, each having their own benefits and associated technical challenges and limitations. Other topics discussed and presented included ADT bioeffects research, thermal management, antenna design, platform integration, tracking systems, and other peripheral technologies.

The information gathered from the working group will be used to help guide the strategy for next generation ADT science and technology investments, and provide a basis for the soon-to-be-released JNLWP FY08 Broad Agency Announcement.

## ACQUISITION HIGHLIGHTS

### ➤ *Mk19 Short Range Non-Lethal Munition (SRNLM) Achieves Milestone B*

On May 31, 2007, Major General Paul Izzo, United States Army (USA) Milestone Decision Authority, Program Executive Office - Ammunition, approved the Mk19 SRNLM for entry into the System Development and Demonstration Phase. The Mk19 SRNLM is a counter-personnel blunt-trauma non-lethal munition that uses one plastic ring airfoil projectile to apply this effect when fired from the Mk19 weapon. The Mk19 SRNLM's effective range and rapid-fire capability will provide the war fighter a non-lethal means to maintain a standoff distance from crowds and individuals. Milestone C is scheduled for 4QFY08.



Mk19 SRNLM

### ➤ *Acoustic Hailing Device Contract Awarded*

The Army's Joint Munitions and Lethality Life Cycle Management Command awarded a contract to American Technology Corporation May 17, 2007, to design, develop, and build four Acoustic Hailing Devices (AHDs).

AHDs are non-lethal, non-kinetic, long-range hailing and warning devices. They use advanced directed acoustic energy technology to provide a non-lethal warning capability with a range beyond that of current non-lethal acoustic device available to U.S. forces. AHDs produce highly directional sound beams that allow users to project warning tones and intelligible voice commands beyond small arms engagement range. The capability will enable U.S. forces to more effectively determine the intent of a person or crowd at a safe distance and potentially deter them prior to escalating force.



Acoustic Hailing Device

### ➤ *Department of Homeland Security (DHS) Orientation Brief*

The Joint Non-Lethal Weapons Directorate (JNLWD) Acquisition Division, in conjunction with the Technology Division, hosted a DHS Orientation briefing June 11, 2007, in Dumfries, Va. The meeting aimed to identify non-lethal capabilities with application for the Border Patrol, National Guard, and other agencies under DHS. Additionally, the meeting gave the JNLWD an opportunity to identify non-lethal efforts currently being deployed or under development by DHS that can be leveraged. Attendees included representatives from the DHS Science and Technology, Border Patrol, National Guard, Northern Command (NORTHCOM), United States Navy (USN), and United States Coast Guard (USCG).

### ➤ *Joint Integration Program (JIP) Review*

The Joint Integration Program (JIP) provides a joint service approach to the research, development, testing, and evaluation necessary for the optimization of the non-lethal capability set (NLCS). The NLCS is a "boxed set" of equipment designed to provide troops with non-lethal counter-personnel and counter-material capability in missions ranging from humanitarian relief to combat operations.

The JIP offers a forum for the Services to exchange lessons learned in the employment of the NLCS in both operational and training environments. This forum includes biannual meetings and demonstrations of vendor items that are candidates for inclusion in the NLCS.

During the May 2007 JIP Review, the following vendors were contacted for future consideration for JIP meeting demonstrations:

- Combined Systems, Inc. – a remotely controlled Venom platform
- Milkor USA – a shorter / lighter version of its six-shot Multiple Grenade Launcher (MGL) and non-proprietary sight mount
- Mechanical Solutions – two new 40mm products with non-lethal applications
- FNH USA – prototype FN303 and proprietary 40mm launcher configured for under-barrel attachment for the Special Operations Combat Assault Rifle (SCAR)

## Director convenes Capabilities-Based Assessment Revision Team

When the Joint Requirements Oversight Council (JROC) reviewed the Joint Capabilities Document (JCD) for the Family of Non-Lethal Weapons in 2006, it asked if the earlier NLW Capabilities-Based Assessment (CBA) addressed Department-wide capability gaps beyond the Joint Non-Lethal Weapons Program (JNLWP). Based on its review of the JCD, the JROC gave interim approval to the JCD and directed the formation of a Non-Lethal Review Team (NLRT) to define Non-Lethal Weapons (NLW) attributes, recommend any needed Capabilities-Based Assessment (CBA) changes ensuring DoD-wide capability gaps identification, and propose a coherent non-lethal lexicon.



CBART attendees participate in the meeting.

As a result of the NLRT recommendations, the JROC requested May 3, 2007, that the JNLWP revise the earlier NLW Functional Area Analysis (FAA) and Functional Needs Analysis (FNA) and submit a revised JCD based upon the preliminary recommendations. The Commandant of the Marine Corps, DoD's Executive Agent for NLW, directed a Capabilities-Based Assessment Revision Team (CBART) to complete the JROC request under the authority of the Director, Joint Non-Lethal Weapons Directorate (JNLWD).

Under the chairmanship of Colonel Kirk Hymes, Director of the JNLWD, the CBART is currently conducting this assessment with representatives from the Services, Joint Staff, Component Commanders (CCDR), DoD Agencies, and other appropriate government agencies. The CBART conducted initial sessions in May and June 2007 with a follow-on meeting scheduled for July. The CBART aims to have the revised JCD submitted for approval via the JROC staffing process in early Fall 2007.

## North Atlantic Treaty Organization Interests in NLW



The North Atlantic Treaty Organization (NATO) remains keenly interested in Non-Lethal Weapons. Since the North Atlantic Council (the heads of state from all member nations) identified NLW as a "critical, additional capability needed in order to meet the demands of future operations," NATO has conducted a variety of activities. Past work by NATO comprises of: studies sponsored by the Research and Technology Organization - a NATO Advanced Research Workshop, standardization effort by a NLW Team of Experts within a NATO Army Armaments Group (NAAG) Land Group. Additionally, there is a NLW exhibition sponsored by the Conference of National Armaments Directors (CNAD) which includes Undersecretary of Defense for Acquisition, Technology, and Logistics and his counterparts from the other member nations.

### Current activities:

➤ *System Analysis and Studies (SAS) SAS-060 study of NLW effectiveness.* This U.S.-led study is developing agreed methods for measuring NLW effectiveness, addressing the degree to which NLW accomplish assigned tasks and satisfy associated constraints. The Director, Joint Non-Lethal Weapons Directorate (JNLWD) chairs this study, working with participants from Belgium, Canada, Denmark, France, Germany, Italy, the Netherlands, Norway, Spain, the United Kingdom, and the United States. The study will complete its efforts this year, with a final report documenting refinement of an effectiveness methodology, testing of the methodology, aggregation of results, and efforts to enhance NLW awareness. The SAS Chairman also selected this study as a briefing topic during CNAD's spring meeting.



### **UPCOMING EVENTS:**

- ◆ **Joint Coordination and Integration Group (JCIG) TBA Aug. 2007**
- ◆ **U.S. Navy / U.S. Coast Guard Integrated Concept Team Meeting Aug. 13-15, 2007**
- ◆ **SEAHAWK Exercise, San Diego, Calif., Aug. 13-24, 2007**
- ◆ **Force Protection Equipment Demonstration (FPED) VI, Stafford Airport, Stafford, Va., Aug. 14-16, 2007**
- ◆ **Joint Integration Program Meeting & Demonstration Sept. 26-27, 2007**
- ◆ **Association of the U.S. Army Expo, Washington, D.C., Oct. 8-10, 2007**

For more information about these events or to subscribe to the newsletter please visit <https://www.jnlwp.com>