

DoD Non-Lethal Weapons Program

Advanced Planning Brief to Industry (APBI)

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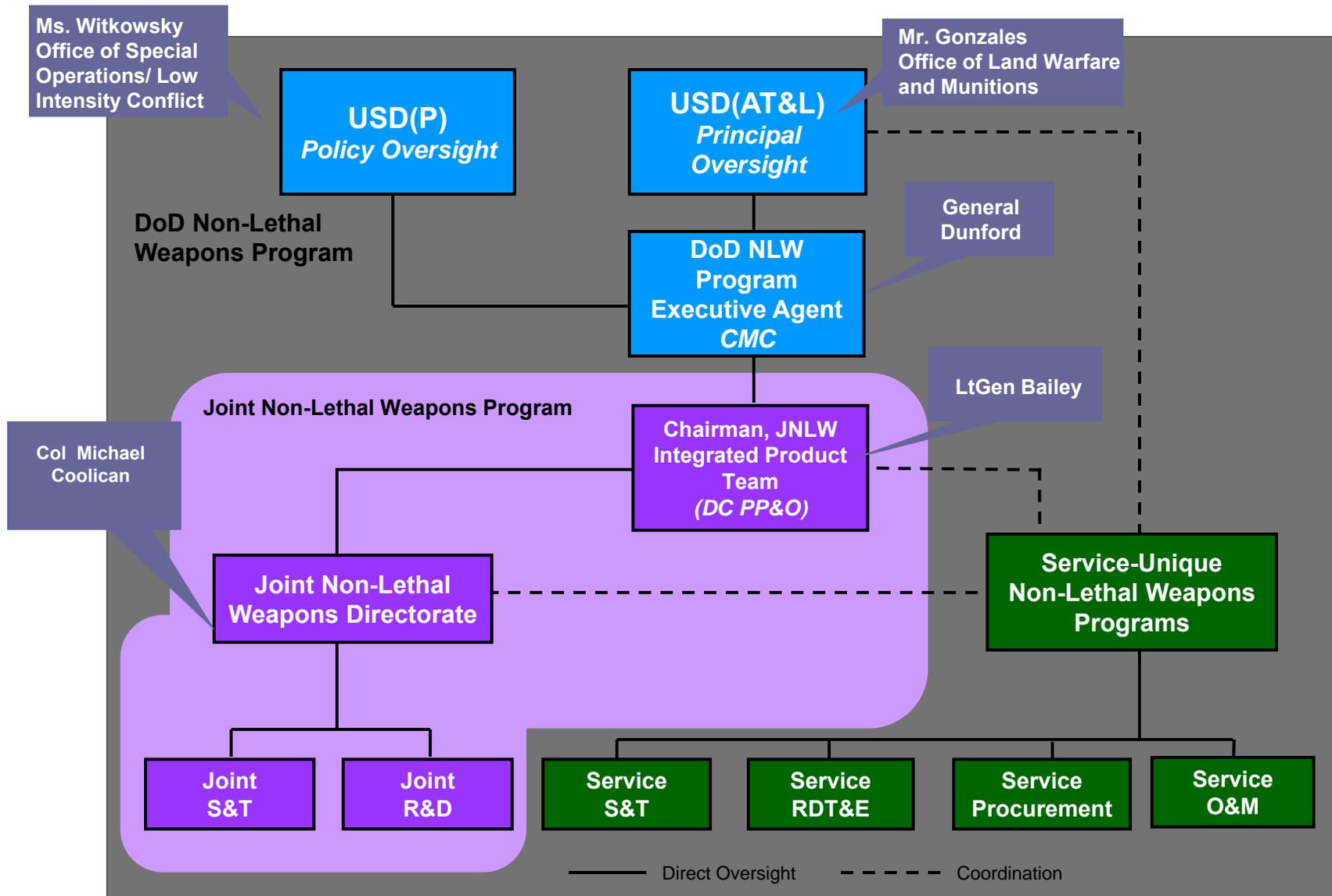
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DoD NLW Program Organization





DoD Non-Lethal Weapons Program

DoD NLW Program Established 1996

- Operation United Shield (Somalia): General Anthony C. Zinni pioneered use of NLW
- FY96 National Defense Authorization Act directed DoD to centralize responsibility for NLW



Program Highlights

- CMC designated Executive Agent
- Joint S&T / RDT&E funding
- Services responsible for NLW procurement



General Joseph F. Dunford, Jr.
Commandant of the U.S. Marine Corps



Vision

“A fully integrated non-lethal competency within each Service, to complement lethal effects, enhance the Joint Force's adaptability, and support strategic objectives that include minimizing civilian casualties”

Non-Lethal Weapons

- Provide escalation-of-force options
- Minimize civilian casualties
- Reduce collateral damage



Non-Lethal capabilities assist operating forces in minimizing civilian casualties and collateral damage



NLW Utility in Contemporary Operations 1996 to Present



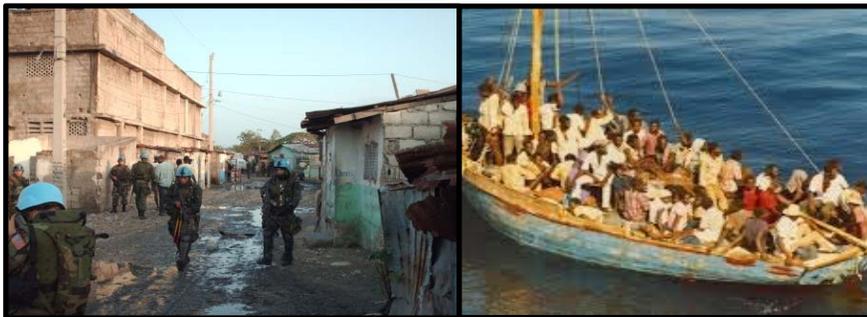
United Shield – Somalia



Bosnia and Kosovo



Haiti



OIF and OEF



Reverting Back to the “New Normal”



Non-Lethal Weapons in Use



12 Gauge / 40 mm
Point, Area and
Warning Munitions



FN303



Washable Paint



Permanent Paint



Training



Optical Interrupters



X-26 TASER



Modular Crowd
Control Munitions



66 mm Vehicle
Launched NL
Grenades



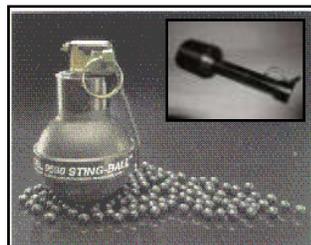
Flash-Bang Grenades



Portable Vehicle
Arresting Barrier



Vehicle Lightweight
Arresting Device



Stingball Grenades &
Launch Cups



Pen Flares



Acoustic Hailing
Devices

Close-in, Kinetic/Non-Kinetic Effects

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NLW Utility in Contemporary Ops

Military Utility Assessments



MUA #1: Vehicle Snap Checkpoint

- Mar '12 – Ft. Benning, GA
- Army infantry squad manned a snap checkpoint
- Assessed utility of NLW to stop vehicles
- Compared civilian casualties and material damages when NLW were employed
- Enhanced NLW employment resulted in:
 - Significantly greater likelihood of stopping a vehicle without using lethal force
 - Significantly reduced likelihood of civilian-related deaths
 - Significantly reduced civilian casualty woundings
 - Significantly reduced damage to civilian vehicles

MUA #2: Foot Patrol

- Aug '12 – Kaneohe Bay, HI
- Marine Corps infantry squad conducted urban operations
- Assessed utility of NLWs to stop vehicles, move people, deny access, and suppress actions
- Enhanced NLW employment resulted in:
 - Reduced civilian-related deaths
 - Reduced likelihood of civilian-related woundings
 - Increase in engagement distance from threats

MUA #3: Perimeter Security

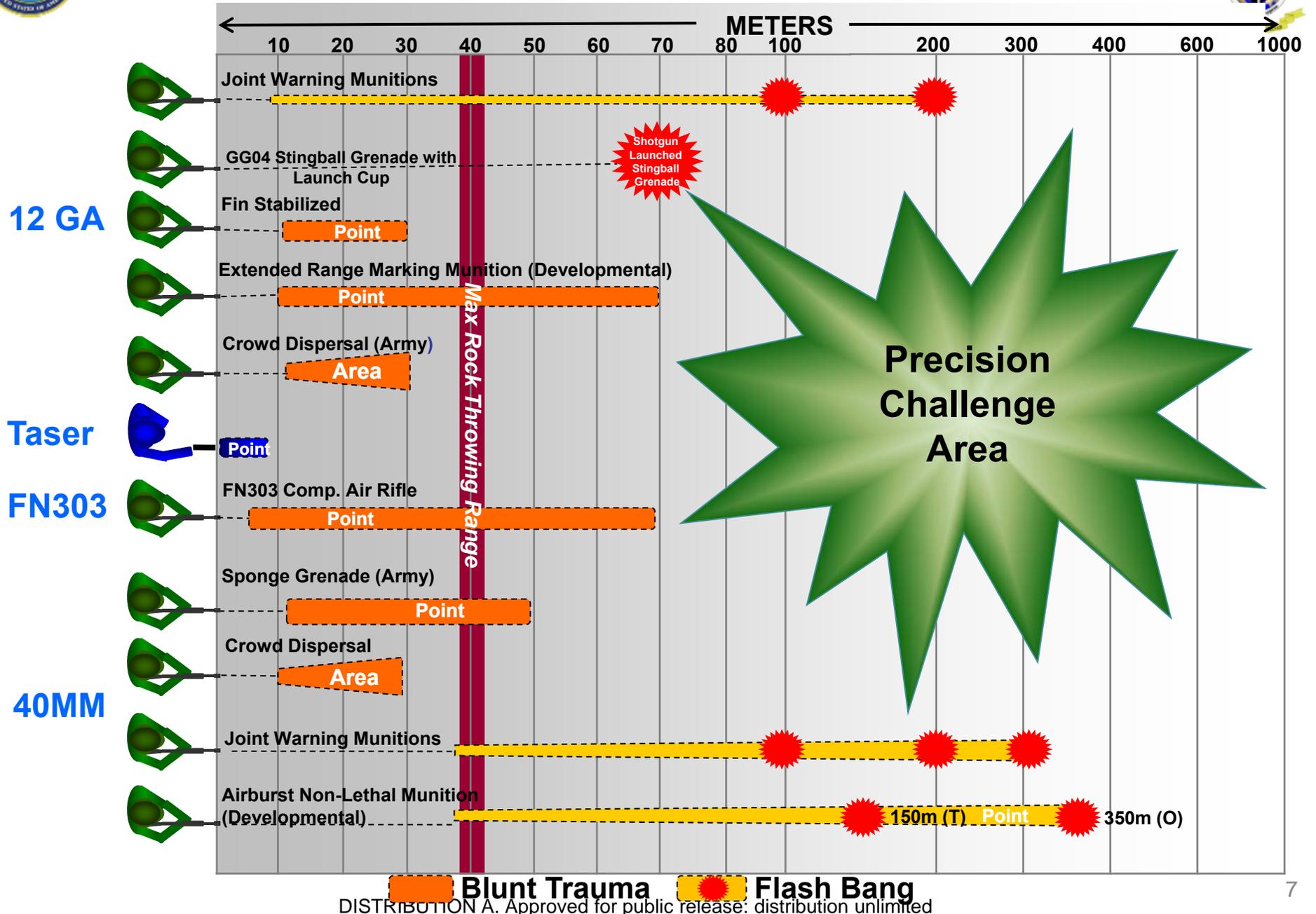
- Mar '13 – Twentynine Palms, CA
- Marine Corps combat logistics squad conducted forward operating base perimeter security mission
- Assessed utility of NLW to stop vehicles, move people, deny access, and suppress actions
- Enhanced NLW employment resulted in:
 - Reduced civilian casualty incidents
 - Fewer Blue Force casualties (uncertain situations)
 - Fewer responses required outside of the perimeter
 - Following this assessment, CG, MCAGCC directed ADS' inclusion in a future Integrated Technology Exercise

MUA #4: Maritime Security

- Sep '14 – Phase 1: Ft. Eustis/James River, VA
- Oct '14 – Phase 2: NSWC Dahlgren, VA
- Conducted a Maritime Security MUA assessing the military utility of integrating NLWs and munitions into EOF situations.
- Scenarios: High Value Asset at Anchor, High Value Asset underway, Pursuit
- NLWs Assessed: Warning Munitions, Distributed Sound and Light Array (DSLAs) Radio Frequency (RF) Vessel Stopping Technology

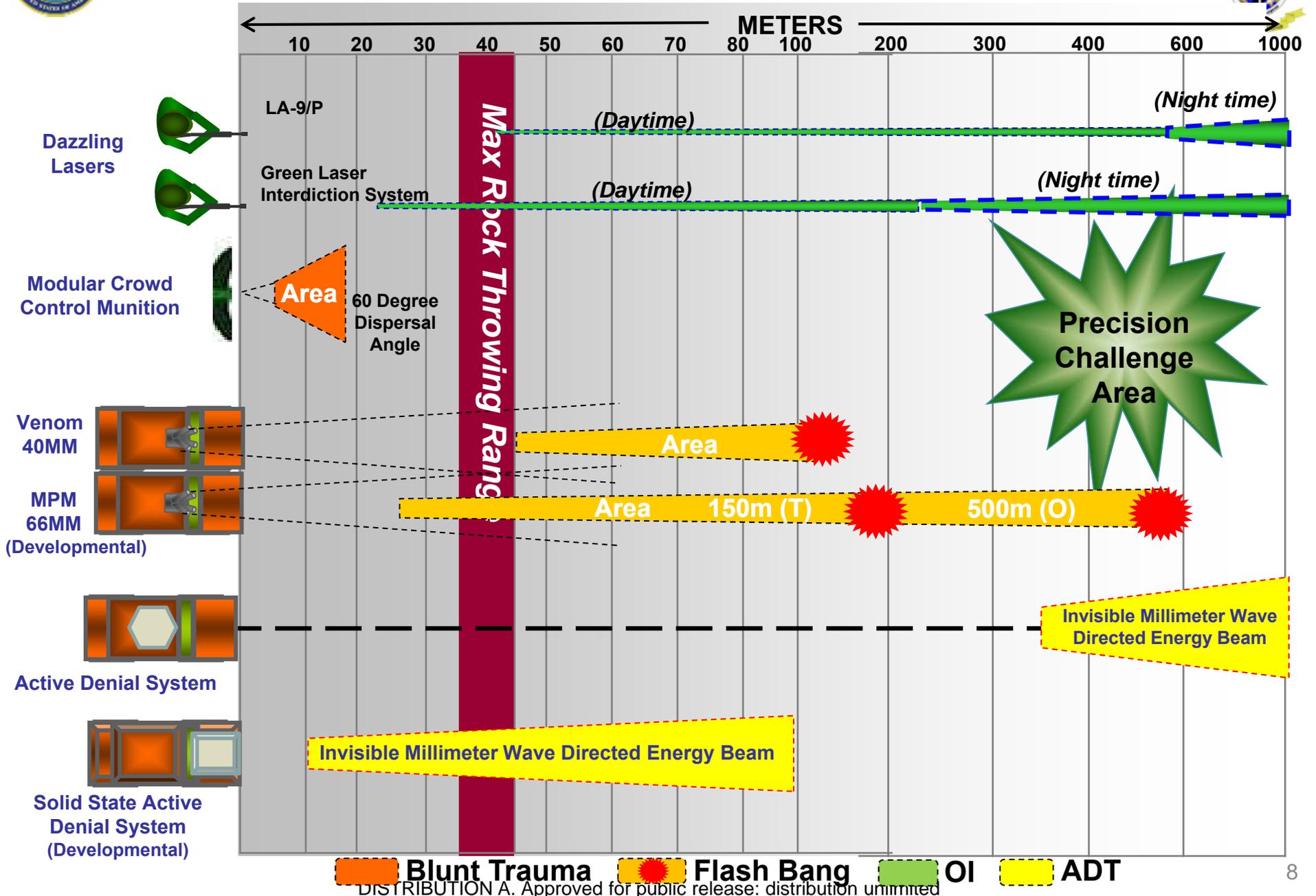


NL Weapons Range Overview





NL Weapons Range Overview





Near-Term/Quick Wins

Airburst Non-Lethal Munition



- 40 mm round for use in systems as the M203 grenade launcher
- Has a fuel enriched pyrotechnic payload, proximity airburst and selectable delay option fuse
- Designed to deny access into/out of an area to individuals, move individuals through an area and suppress individuals
- Potential to support multiple missions:
 - Force protection
 - Room Clearing/denial
 - Crowd control
 - Offensive and defensive operations



Increase Duration, Non-Kinetic



Near-Term/Quick Wins



- Commercial/Non-Developmental Item
- Fills the requirement for a non-damaging dazzling laser
- Employed during the escalation-of-force continuum to deliver a glare effect to warn and/or suppress targeted personnel from 10 meters to 500 meters

Ocular Interrupter

Improved Flash-Bang Grenade

- Greater light output and duration
- Improved environmental, health, and safety compliance
- Used as a counter-personnel tool to move/deny/suppress individuals in breaching and/or other non-lethal force operations



- Focused on a commercial solution
- Flash bang / diversionary grenade that has the capability to bang multiple times within an area to serve as a diversion / distraction

Multi-Bang Flash-Bang Grenade

Increase Duration, Non-Kinetic



Mid-Term/Big Win



Mission Payload Module

- The Mission Payload Module - Non-Lethal Weapons System is a game-changing, non-lethal counter-personnel weapon system that provides both force-application and force-protection capabilities.
- The MPM-NLWS consists of an advanced, suppressive 66 mm munition, launcher and laser sighting system with:
 - extended range (30-500 meters)
 - high volume of fire & capability to transition from non-lethal to lethal engagements within seconds
 - shoot on the move capability
 - vehicle, vessel or ground-mounted/tripod mounted tube launcher

Increase Range, Kinetic/Non-Kinetic



Active Denial Technology

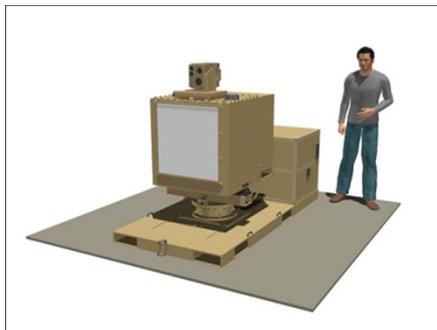


Active Denial System

- Advanced Concept Technology Demonstrator
- Proven Effects – 95 GHz effects
- Effective at long-ranges

Compact ADT

- Demonstrate the same effectiveness in an operationally suitable configuration
- Develop a compact, lightweight second harmonic Gyrotron with a room temperature electropermanet



Solid State (SS) ADT

- Develop a compact, self-contained, NL SS-ADT demonstrator
- Significant reduction in size and weight
- Cost sharing effort between Army Research and Development Center and JNLWP

DoD Directed Energy Investment

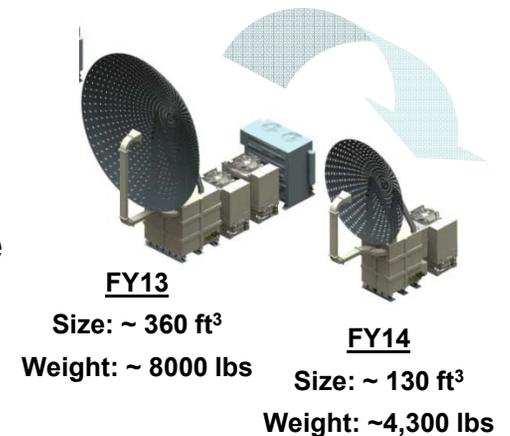


Directed Energy Updates (Big Wins)



RF Vehicle Stopping

- System size and weight reduction (FY13 to FY14)
- Sept 14 workshop and demo to inform Dec 14 decision point
- Strong JIEDDO and CENTCOM interest
- Some questions about effectiveness and effects on certain targets
- Results suggest long range entry control point protection should be focus of future system development (FY15-20)



RF Vessel Stopping

- High TRL system demos for UK System and RADES
- Both systems used in MUA 4
- USCG expressed interest in chase scenario application
- User workshop 2QFY15 (FY14 funds extend to May)
- Decision point will follow user workshop
- No FY15 funding programmed

HPM System Technology

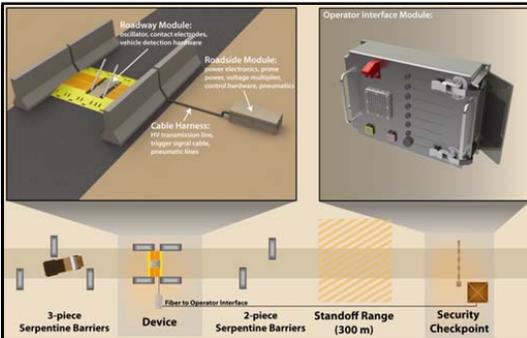
- S&T effort to explore options to reduce component technology size, weight and power
- Multiple projects ongoing with potential to feed into both CM and CP RF/HPM systems



Demonstrators

Distributed Sound and Light Array (DSLAs)

- Acoustical and optical device
- Provides hailing and warning capabilities
- Combined effects of two integrated sensory stimulators



Pre-Emplaced Electrical Vehicle Stopper (PEVS)

- Pre-emplaced, electric, direct injection system
- Non-lethally stop vehicles at significant keep-out ranges
- Reduces risk to personnel from vehicle-born IEDs

Non-Lethal Indirect Fire Munitions (IDFM)

- Non-lethal 81 mm mortar round
- Integrated flash-bang munitions
- Suppress combatants at range with low risk of significant injury



Non-Lethal capabilities assist operating forces in minimizing civilian casualties and collateral damage



FY15 JNLWP Broad Agency Announcement Technology Challenges



1. Non-Lethal Advanced Materials and Non-Lethal Payloads to Hail/Warn, Move, Deny Area, Suppress, and Temporarily Disable Individuals at ranges > 100meters
2. High Power Microwave Technologies for Counter-Material Missions
3. Compact Active Denial Technologies
4. Clear-a-Space Technologies
5. Human Electro-Muscular Incapacitation Technologies
6. Directed Energy and Non-Directed Energy-based Technologies for Vehicle/Vessel Stopping & other Counter-Material Targets
7. Non-Lethal Laser Induced Plasma Effects for long range (> 100meter) NL Counter-Personnel and Counter-Material Missions (long range hail and warn, long range suppression via multi-flashbang effects, and thermal discomfort)
8. Compact Non-Lethal Non-Pyrotechnic Flash-Bang Technologies
9. Compact Advanced Multi-Bang Flash-bang Technologies
10. Advanced Non-Lethal Technologies that Move/Suppress/Deny/Disable through Combined NL Effects on Individuals and Crowds
11. Compact Hail and Warn Technologies with long range (0-1500m) two-way communications
12. Compact, Low Cost Non-Lethal "Push-Back" – "Repel" Technologies
13. Human Effects and NLW Weapon Effectiveness Studies, Risk Assessments, and Evaluations
14. Other Next-Generation Non-Lethal Technologies



NLW Research & Technology Development IDIQ



- JNLWP is pursuing an Indefinite Delivery – Indefinite Quantity (IDIQ) Multiple Award Contract (MAC) for research and technology development
- Advance the technology readiness and state of knowledge in nine functional areas:
 - 1) Human Electromuscular Incapacitation (HEMI)
 - 2) Nanosecond electrical pulses
 - 3) Active Denial Technology
 - 4) Human effects
 - 5) Blunt impact technologies
 - 6) Directed energy weapons – RF/HPM
 - 7) Laser technology
 - 8) Vehicle/vessel stopping technology
 - 9) New/advanced materials, payloads and delivery systems
- Partnering with Naval Surface Warfare Center, Indian Head Explosive Ordnance Disposal Technology Division
- Planned schedule:
 - ~ 2QFY15 – Draft RFP
 - ~ 3QFY15 – RFP
 - ~ 4QFY15 – Awards

**Check JNLWP website
and FedBizOps routinely
for updates
<http://jnlwp.defense.gov>**

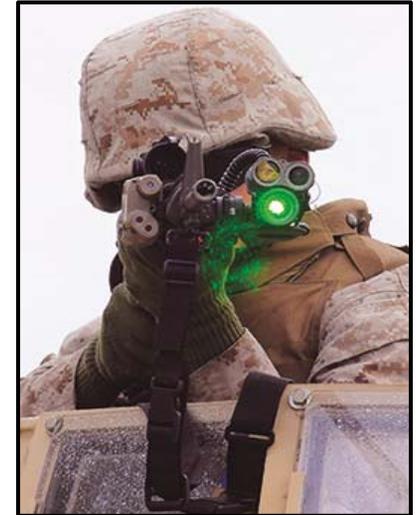
Informational and planning purposes only. Does not bind the Government to contract for any supply or service. Official requirements and instructions would be provided in a final released Request for Proposal (RFP).



Non-Lethal Weapons Summary



- Provide operating forces with escalation-of-force options while minimizing casualties and collateral damage
- Always have lethal force overwatch/back-up
- Help fill the gap between shouting and shooting
- Offer options across the full spectrum of conflict



Non-Lethal capabilities assist operating forces in minimizing civilian casualties and collateral damage