DoD Non-Lethal Weapons Program Brief
2019 NDIA Armaments System Forum
4 Jun 2019

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Distribution Statement A: Approved for Public Release, Distribution Unlimited
Agenda

• DoD NLW Executive Agent

• Small Arms Investments

• Unconventional & Emerging Armaments Investments
Bottom Line Up Front (BLUF)

- The world’s most lethal, credible, and influential Joint Force must remain capable of deterring and defeating the full range of threats to the United States and her allies.

- The DoD NLW Program provides Department-wide, Interagency and International leadership for the advancement of non-lethal weapons (NLW).
DoD Directive 3000.03E; DoD Executive Agent (EA) for NLW, and NLW Policy

- DEPSECDEF Signature

- Specifies CMC’s EA responsibilities, e.g.:
  - Serving as DoD focal point on all NLW matters
  - Stimulating and coordinating NLW requirements across DOTMLPF
  - Managing separate USMC program elements for Joint NLW S&T and R&D
  - Providing technical oversight of Joint NLW and maintaining insight into Service funded NLW
  - Recommending DoD-wide NLW policy, planning and programming guidance
  - Promoting NLW cooperation and coordination with other U.S. government agencies and allies
Service coordination is governed by a Joint Service Memorandum of Agreement under OPSDEPS signature.
Joint Service Memorandum of Agreement

DoD NLW Program Executive Agent
CMC
Joint Integrated Product Team Chairman
DC, PP&O

DC PP&O

Army
Navy
Air Force
Coast Guard

Director, JNLWD

Army
Navy
Air Force
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Non-Voting Members:
OSD, Joint Staff, Combatant Commanders and Other Government Agencies

Joint Integrated Product Team (JIPT)

• Meets semi-annually
• Approves JNLWP budget
• Approves resolution of program issues
• Reviews Joint and Service-unique programs

Joint Coordination & Integration Group (JCIG)

• Recommends program priorities for development and funding

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Non-Lethal Weapons:
Provide relevance beyond Force Protection & Police Applications

“We must use creative approaches, make sustained investment, and be disciplined in execution to field a Joint Force for our time, one that can compete, deter, and win in this increasingly complex security environment” – 2018 National Defense Strategy

"Fire and maneuver forces coordinate, plan, and execute fire support tasks to defend the force from attack and surveillance, and create exploitable lethal and nonlethal effects in support of a scheme of maneuver"
DOD NLW Program

**Mission**
The DoD Non-Lethal Weapons Program develops and fields intermediate force capabilities between presence and lethal effects in support of national interests.

**Vision**
Transform the National Security Enterprise by mainstreaming the planning and employment of intermediate force capabilities to save lives and reduce collateral damage.
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Joint Non-Lethal Weapons Program
Small Arms Investments

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Current / Near Term Capabilities

Ocular Interrupter (USMC)
IOC – Jan 18

12 Gauge Extended Range NL Point Round (USA)
Full Material Release 4QFY20

6 Bang Flash Bang Grenade (SOCOM)
Began Fielding 3QFY18

81mm Flash Bang Munition (USMC)
Procurement begins in FY21

Lead Free Single Bang Training Grenade (SOCOM)
Fielding & Deployment Release in 3QFY20

9 Bang Flash Bang Grenade (SOCOM)
Fielding & Deployment Release 2QFY22

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Caseless Telescoping NL System (CTNLS)

DESCRIPTION:
• Current nonlethal munitions require soldiers to utilize different platforms and munitions to engage personnel from 5 meters out to 50 meters which burdens the logistics system as well as the decision process of the soldier when engaging targets.

FISCAL YEAR OBJECTIVES:
• Advanced Technology Demonstration (ATD)
• To conduct evaluation of advanced prototype system to determine if it is a suitable nonlethal counter-personnel engagement capability against targeted individuals, delivering equivalent on-target effects from a minimum engagement range of five (5) meters to 100 meters.

UNIT COST/ACQUISITION OBJECTIVES:
• Conduct Joint Combined Arms Maneuver
• Set Theater Sustain Operations & Maintain Freedom of Movement
• Information obtained from the experiment will be used to refine and support the KPPs, KSAs, Attributes and Rationale of the INS CDD.

REQUIREMENTS FOUNDATION (If Applicable):
• Initial Capabilities Document (ICD) for Counter-Personnel Joint Non-lethal Effects (CP JNLE), CARDS # 06094, 23 Dec 13

PERFORMERS:
• Combat Developer: ANSEC, MSBL, TCM-Maneuver Support, FLW, MO (MO-4th)
• Material Developer: CCDC-AC, Picatinny, NJ (NJ-11th)

Resourced by JNLWP in FY19

Technology Readiness Level (TRL): 5

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EoF CROWS for Integrated Base Defense

OBJECTIVE:
- CROWS Optimization for EoF Technologies (Power, Comms, Slewing)
- Engineering Design & Integration
- Safety Release
- S&T development of Next Generation EoF CROWS System - Optimized EoF Technologies (i.e. AHD, Laser Dazzler & LED Bright White Light)

MILITARY RELEVANCE/OPERATIONAL IMPACT:
- Requirements Foundation/Demand Signal
  - Army Watercraft Systems indicates EOF as Threshold requirement in MSV(L) CDD and in 4 ONS for LSV and LCU vessels.
  - USA MFPRS CDD has CROWS EOF as threshold requirement.

TECHNICAL APPROACH:
- Build upon the Escalation of Force (EoF) Common Remotely Operated Weapons Station (CROWS) NLW Integration of the LRAD 500X AHD, BE Meyers Glare Recoil Laser Dazzler and Wise LED Bright White Light onto a CROWS Tech Refresh System (Baseline System)
- US Government owns the Data Rights to CROWS
- Army PEO Soldier named the MDA for Army Mobile Force Protection Response System (MFPRS)
- USAF Integrated Base Defense Security System (IBDSS)
- Develop, Store, Ship & Operate JNLWP ED&A Demonstrator for Vehicle, Vessel, Container or Ground Mount Configurations.

PERFORMERS:
- PM Soldier Weapons, Picatinny, NJ – Material Developer
- CCDC AC, Picatinny, NJ – Engineering Design
- Army Watercraft Systems, Fort Lee, VA – Combat Developer
- ATEC, Aberdeen Proving Grounds, MD – Safety Release
- Non-lethal Scalable Effects Weapons Vendors (TBD)

SCHEDULE & COST:

Resourced by JNLWP in FY21-22

Current TRL: 4

TRANSITION PATH / SPONSOR: Sustainability Center of Excellence (SCOE), DoE and JNLWP Experimentation, Demonstration & Assessment Program
DoD NLW Program Summit
3QFY20 – 2QFY21

- JNLWD / Services in Active Planning Phase Now
- Event will consist of:
  - Private Range Vendor Demonstrations (Government Selected Technologies)
  - Vendor Symposium (All U.S. Based NLW Manufacturers)
  - DoD NLW Advanced Planning Brief to Industry
  - Government Only / NATO Meetings
- JNLWD Project Officer, Stephen Peace, (703)432-0904, stephen.j.peace@usmc.mil
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Joint Non-Lethal Weapons Program
Unconventional & Emerging Armament Investments

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JNLWP Science & Technology Strategic Plan

Initial JNLWP S&T plan published in April 2016
- 2020-2025 S&T Strategic Plan update being published
- Next JNLWP BAA FY21

Purpose
- Communicate S&T Portfolio’s Intent
- Pronounce an S&T Investment Strategy
- Articulate S&T Project Management Guidelines
- Define series of S&T Objectives (STOs)

~12 NLW STOs inform priorities with respect to:
- Future operating concepts & Joint warfighter priorities
- DoD & Service Strategic Documents (e.g. NDS)
- JROC-approved “JNLE Capability Gaps” ICDs
- COCOM IPLs & STIPLs
- NLW Technology state of the art, and NLW/HE research knowledge-base

INVESTMENT AREAS | WEIGHT
--- | ---
Counter-Personnel (CP) | 30-45% 
Counter-Materiel (CM) | 30-45% 
Enabling Technologies | 5-20% 
Innovative Technologies | Up to 20% 

FY XX PLANNING CYCLE

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DoD NLW Contracting Vehicles

CCDC AC → Contracting Agent (ATI) → DOTC OTA → NAC Performers

NSWC IHEODTD → Industry & Academia Performers

JNLWD → BAA

NLW IDIQ MAC (yr 3 of 5) → Performers

Washington HQ Services → 4 Prime Vendors/many Subs

NAVSEA → UARC

UARC → Performers

New or Existing Contracts (includes new OTAs) → USMC

- DE & NLWs Community of Interest (COI)
- ASD (R&E) and RRTO
- PSEAG and CTTSO
- ONR/NRL; AFRL; ARL
- DARPA

USMC

- Small Business Innovative Research (SBIRs) – ~ 3-5 per yr
- Small Business Technology Transfer (STTRs) – ~ 1 per yr
- Rapid Innovation Funding (RIFs)
- Other research/study contracts

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JNLWP Technology Investments

**Spiral Development**

- **Warning Munitions**
  - Unambiguous Warning & Blunt Impact Incapacitation
    - Flashbang effects
    - Blunt Impact, Marking, & Obscuration effects

- **Suppression Devices**
  - Deny Access
    - Flash blind effects
    - Debilitating sound & over pressure effects

- **Sound & Light**
  - Distributed Sound & Light Arrays
  - Laser Induced Plasma Effects
  - Long Range Warn & Incapacitation
    - Flashbang effects
    - Dazzlers & Lights
    - Thermal Discomfort
    - Delivery of Voice Commands

- **Active Denial Technologies (ADT)**
  - Repel Individuals
    - Legacy ADT Systems
    - Solid-State ADT Skid-Plate
    - SWAP-C² Improvements

- **Pre-Emplaced Electric Vehicle Stopper (PEVS)**
  - Vehicle Stopping
    - USAF Pilot Program
    - SWAP-C² Improvements

**Innovation & Preliminary Designs**

- **Vessel Stopping**
  - Occlusion
  - Radio Frequency – High Power Microwave (RF-HPM) Vessel Stopping

- **Vehicle Stopping**
  - RF-HPM Vehicle Stopping
  - Vehicle Stopping Modular Multi-Mission Prototyping
  - SWAP-C² Improvements

- **Human Electro-Muscular Incapacitation (HEMI)**
  - Disable Individuals
    - Wireless HEMI Munition
    - Conventional firearm employed
    - Point & Area targets
    - Long Range & Long Duration Incapacitation

- **Counter UAS**
  - C-UAS
    - Innovative Application of NL Technologies
    - Collaboration w/ MCWL (Dazzlers; HPM / ADT)

**Next-Generation Prototyping & Technology Demonstrations**

- **Feasibility Studies & Experimentation**

- **Integrated Base Defense**
  - Move / Suppress / Deny System-of-Systems
    - Sound & Light
    - Active Denial Technologies
    - RF-HPM Veh. / Ves. Stopping
    - Other Kinetic NLWs & Munitions
    - FSEP 2.0 / UxS Integration
JNLWP S&T Program Summary

• Knowledge Discovery:
  • Build upon latest scientific and technical developments to enable the fielding and mainstreaming NLWs for intermediate force applications.

• Fail Faster, But Thoughtfully:
  • Minimize failures and maximize success by executing early and frequent incremental milestones and potential off-ramps for projects.
  • Involve customers and leadership early and often in the project life-cycle to maximize warfighter support, and minimize re-design.

• Collaboration:
  • Invite a wide community of experts to contribute as part of “cross-functional” learning teams by -
    • Continued joint coordination and collaboration with DoD and other government agency S&T organizations
    • Expanding performer base via rigorous market surveys
    • Utilizing more efficient and diverse contracting mechanisms

• Reduce Risks:
  • Provide early and frequent opportunities for customer and leadership risk assessments and feedback for project milestones.
  • Implement risk mitigation strategies as applicable to minimize failures and maximize ultimate success.

• Transition:
  • Identify methods, industries, or technologies to deliver transition-ready NLWs to the National Security Enterprise for incorporation into fieldable systems for the warfighters.

• Inform Industry:
  • Seek industry partnerships in Joint S&T research aimed at delivering transition-ready technologies and risk-reduction products to the Joint force.
Summary

• NLW provide operating forces with intermediate force capabilities between presence and lethal effects while minimizing casualties and collateral damage

• The DoD NLW Program provides Department-wide, Interagency and International leadership for the advancement of NLW