



# Escalation of Force Options For the Warfighter

Joint Munitions Conference  
June 2011

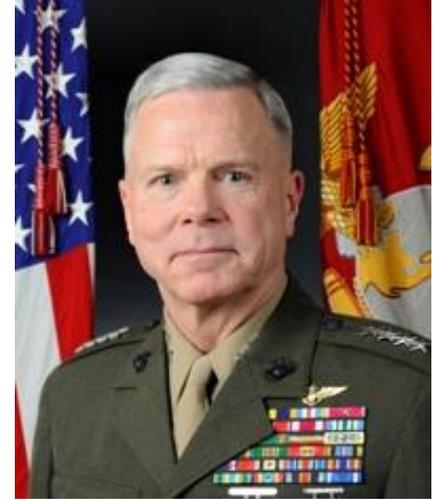


**Douglas Jerothe**  
**Deputy Director**  
**Joint Non-Lethal Weapons Directorate**



# Department of Defense (DoD) Non-Lethal Weapons (NLW) Program

- Established in 1996 with the Commandant of the Marine Corps as the designated DoD NLW Executive Agent
- The Joint Non-Lethal Weapons Directorate serves as the Executive Agent's day to day management office, coordinating activities with the Services, Coast Guard, and other government agencies
- The Executive Agent has a research budget dedicated to developing and advancing the suite of non-lethal weapons available to U.S. forces
- The military Services (Army, Air Force, Navy, Marine Corps) are responsible for NLW procurement and sustainment



*General James F. Amos  
Commandant of the U.S. Marine  
Corps*





# DoD NLW Definition

“Weapons, devices and munitions that are explicitly designed and primarily employed to incapacitate targeted personnel or materiel immediately, while minimizing fatalities, permanent injury to personnel, and undesired damage to property in the target area or environment. Non-lethal weapons are intended to have reversible effects on personnel and materiel.”

## JNLWP Focus

### Counter-Personnel

- Suppress**
- Move**
- Deny**
- Disable**



### Counter-Materiel

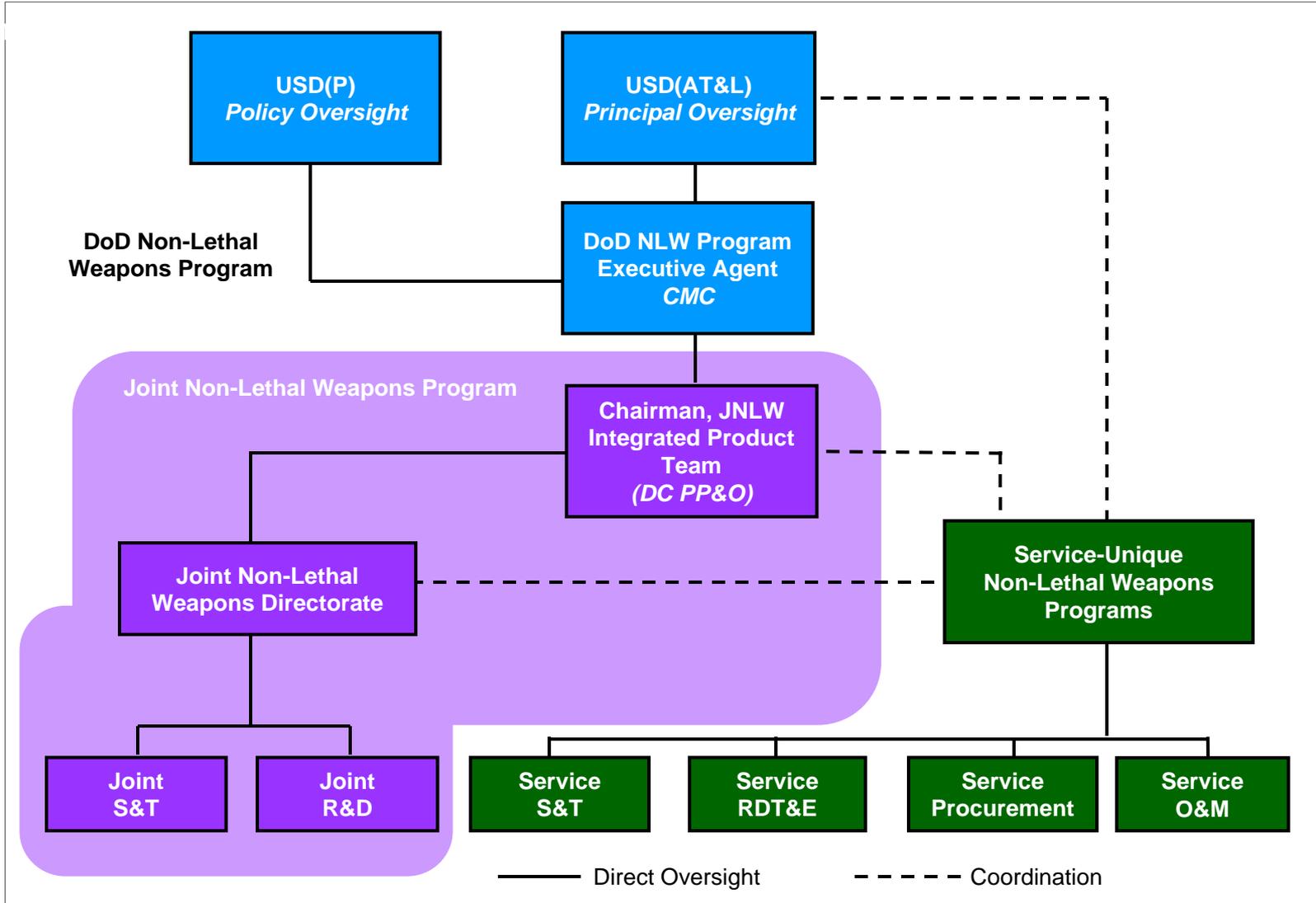
- Stop**
- Disable**
- Divert**
- Deny Access**



***Key Attributes: Incapacitation and Reversibility***

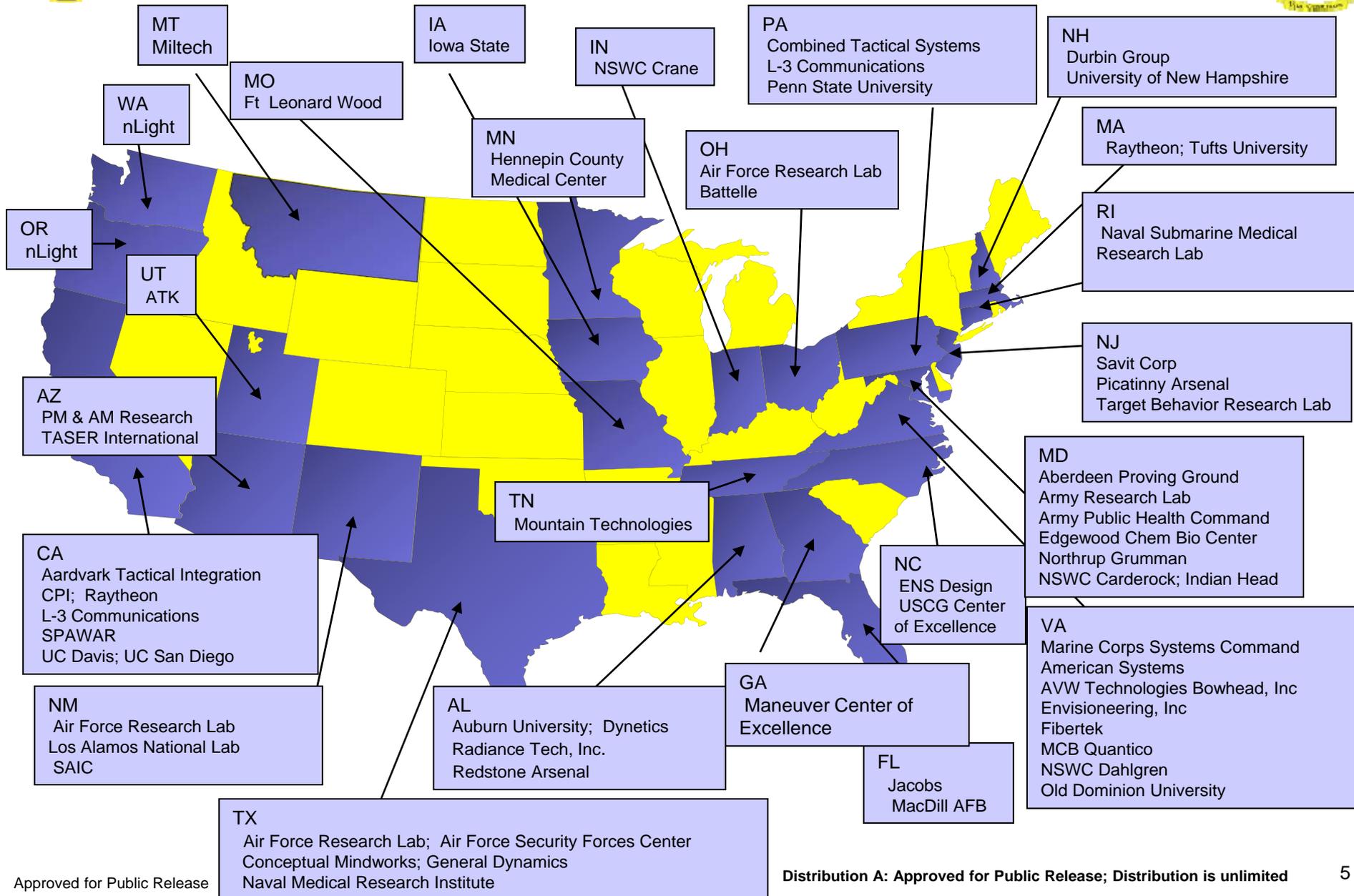


# DoD NLW Management Structure





# Non-Lethal Weapons Efforts in the United States





# JNLWP International Impact

**North American Technology Demonstration - Oct 2011**

**TRANSCOM CLO**  
POINT DEFENDER  
COYOTE SHIELD

**INIWIC**  
(Inter-service  
Non-lethal  
Individual Weapons  
Instructor Course)

**North Atlantic Treaty Organization**  
Systems Analysis and Studies 078  
Defense Against Terrorism #11  
Land Capabilities Group #9

**EUCOM CLO**  
NLW CAPEX  
KFOR Rotation Pre-Deployment ECT  
Black Sea Rotation Force ECT

**JFCOM CLO**  
UNIFIED ENDEAVOR MRX

**SOCOM CLO**

**NORTHCOM CLO**  
VIGILANT SHIELD

**SOUTHCOM CLO**  
TRADEWINDS  
PANAMAX

**AFRICOM CLO**  
AFRICOM CAPEX  
AFRICAN LION (Morocco)  
SHARED ACCORD (Benin)

**CENTCOM CLO**  
Semi Annual ATRP Conference  
Detention Conference

**PACOM CLO**  
COBRA GOLD  
NOLES  
BALIKATAN  
CRIMSON VIPER

CLO=COCOM Liaison Officer (JNLWD provided contractor)  
NOLES=Non-Lethal Weapon Executive Seminar



# JNLWP Support of Service NLW Fieldings

1996  USMC NL Capability Set Fielding Begins

1998  USA NL Capability Set Fielding Begins

2000  NLWs deployed to Kosovo

2001  40mm NLM Fielding Begins  
Portable Vehicle Arresting Barrier Fielding Begins  
Modular Crowd Control Munition Fielding Begins

2004  NLWs for Haiti; OIF  
Vehicle Lightweight Arresting Device M2 Net Urgently Fielded & Used Operationally  
VLAD M2 Nets, FN303, M/X26 Taser, Acoustic Hailing Devices Urgently Fielded

2006  GBD-IIIC Laser Dazzlers and M/X26 Tasers Urgently Fielded for OIF

2007  Running Gear Entanglement Systems Deployed  
USAF and NGB NL Capability Set Fielding Begins

2008  Joint NL Warning Munitions Urgently Fielded

2011  X26 Taser Milestone C  
Improved Flash Bang Grenade Contract Award  
Long Range Optical Interruption Milestone Development Decision



# Current Acquisition Programs

## Counter-Personnel Capability Gaps

Suppress, Move and / or Deny Individuals / 1-100 Meters



**Airburst NL  
Munition**

**USA Lead  
Milestone C: FY12**



**Mission Payload Module**

**USMC Lead  
Milestone C: FY15**



**Improved  
Flash  
Bang  
Grenade**

**SOCOM Lead  
Milestone C: FY13**

## Counter-Materiel Capability Gaps

Stop Vehicles, Stop Vessels, & Deny Access to a Facility

**Single Net Solution**

**M2 Net**

**Vehicle Lightweight Arresting Device (VLAD) Single Net  
Solution (SNS) & Remote Deployment Device (RDD)**

**USA Lead  
Milestone C:  
FY12**



# Near-Term Technology Solutions

## Counter-Personnel Capabilities Suppress, Move, & Deny Individuals



**Optical Distractors & Acoustics**



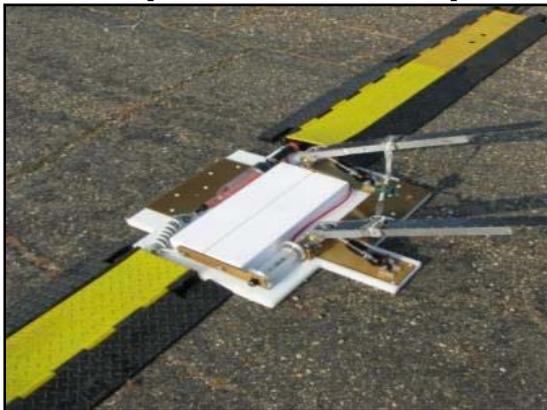
**Commercial Off-the-Shelf Human Electro-muscular Incapacitation Devices**



**Advanced Materials for Non-lethal Projectiles**

## Counter-Materiel Capabilities

### Stop Vehicles, Stop Vessels, & Deny Access to a Facility



**Electrical Vehicle Stopping**



**Entanglement Devices**



# Mid-Term Technology Solutions

## Counter-Personnel Capabilities

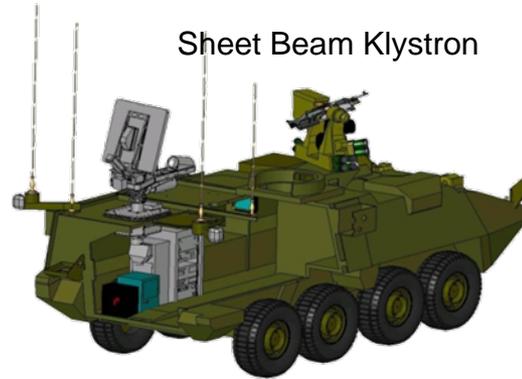
### Suppress, Move, Deny & Disable Individuals



Long Range Human  
Electro-Muscular  
Incapacitation



40 MM HEMI Projectile



Sheet Beam Klystron

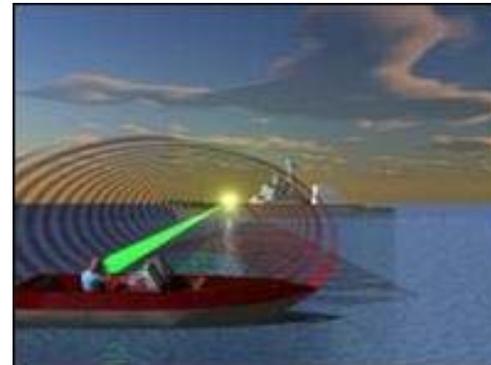
Active Denial  
Technologies



Malodorants

## Counter-Materiel Capabilities

### Stop/Disable Vehicles, Stop/Disable Vessels, Stop/Disable/Divert Aircraft



Directed Energy Vehicle / Vessel Stoppers

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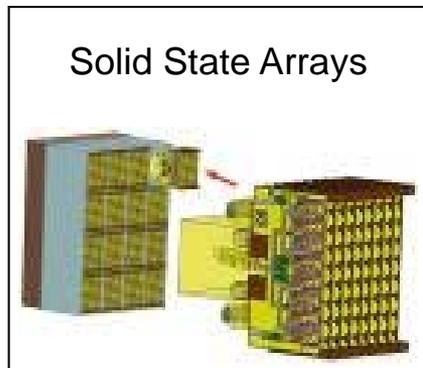


# Far-Term Technology Challenges



## Counter-Personnel Capabilities

### Suppress, Move, Deny & Disable Individuals



Active Denial Technologies



Synergistic NL Effects T&E Suite



Laser-Induced Plasma Effects

## Counter-Materiel Capabilities

### Stop/Disable Vehicles, Stop/Disable Vessels, Stop/Disable/Divert Aircraft



Long Range DEW Vehicle Stoppers



Counter Aircraft Capabilities



# NATO Engagement

- JNLWD leads the NATO NLW Capabilities Based Assessment (SAS-078), is actively involved in the NATO NLW Defense Against Terrorism initiative (DAT-11) and the NATO Army Armaments Group, Land Capabilities Group 9 (LCG-9).
  - SAS-078 identified NATO NLW requirements (which received Bi-Strategic Command endorsement), member nation capabilities, and capability gaps, with assessments of materiel and non-materiel solutions now underway.
  - DAT-11 was formed in response to an International Security Assistance Force (ISAF) request for NLW capabilities and is building toward a 2011 Technology Demonstration.
  - LCG-9 efforts support standardization of NLW capabilities and identification & promotion of multilateral and bilateral cooperative activities.



# Defense Against Terrorism (DAT) 11 Non-Lethal Capabilities



The Ottawa Convention Centre  
25-27 October 2011, Ottawa, Canada

[www.2011NATD.CA](http://www.2011NATD.CA)



# Questions?

For more information please visit: <http://jnlwp.defense.gov>