



Escalation of Force Challenges and Technology Investment Areas

Joint Missions Conference
August 31, 2011



John Keenan
United States Marine Corps
Principal Deputy, Technology Transition and Integration
Joint Non-Lethal Weapons Directorate



Combatants Embedded within Civilian Population





Uncertain Situations...





Consequence Management...





Spectrum of Response

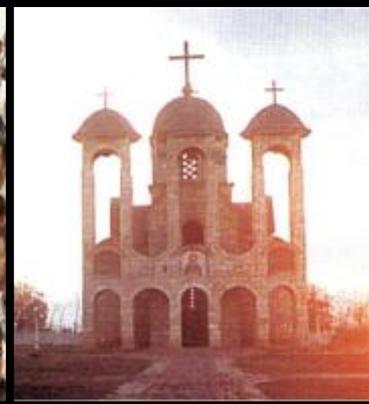


MILITARY PRESENCE

NON-LETHAL WEAPONS

LETHAL FORCE

What capabilities do we have, what capabilities do we need?



Target selected individuals

Clear facilities

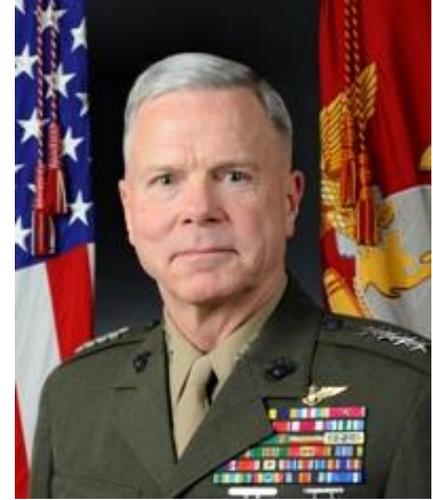
Control group movements

Neutralize without Destroying



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 NLW 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

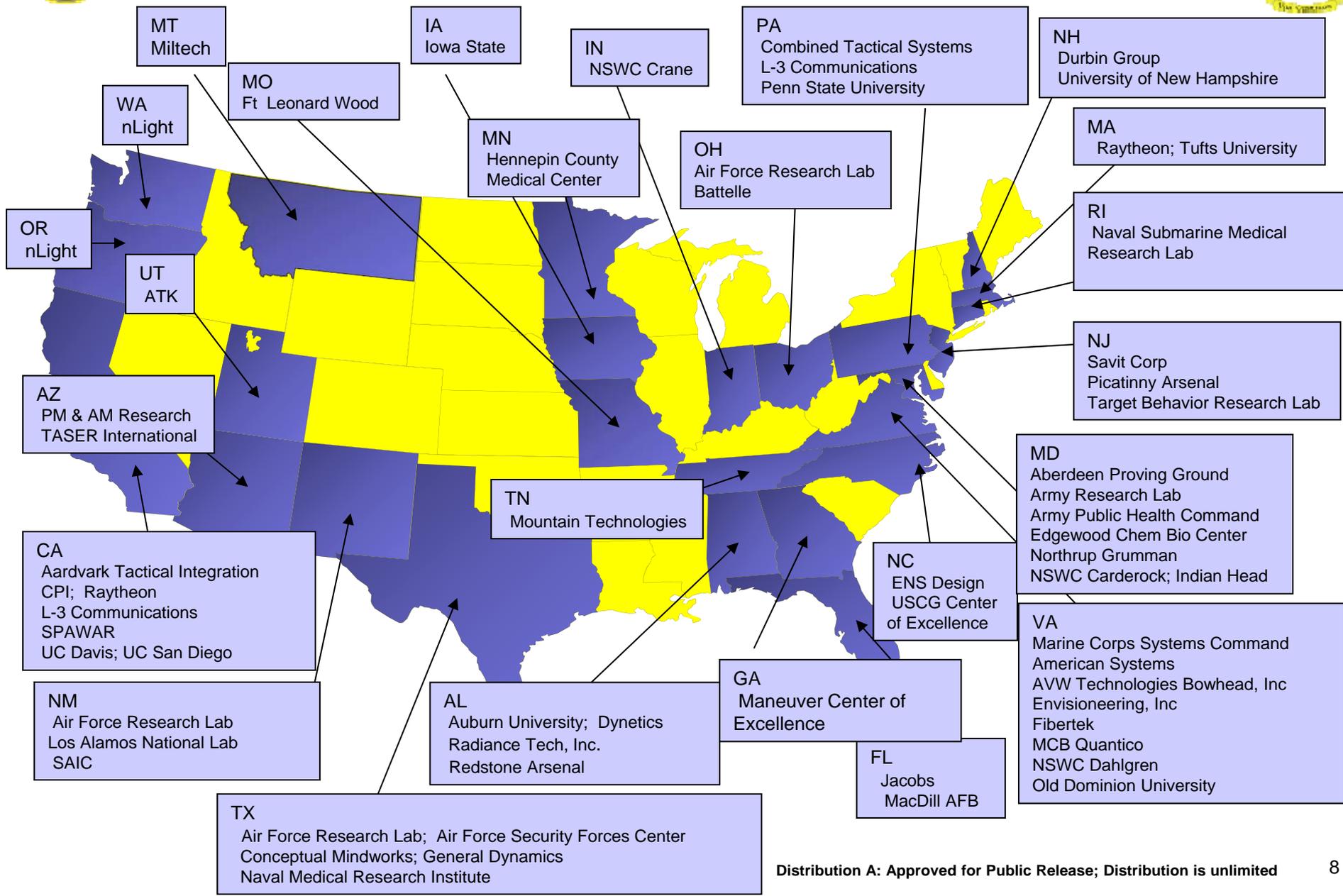
- Stop**
- Disable**
- Divert**
- Deny Access**



Key Attributes: Incapacitation and Reversibility



Non-Lethal Weapons Efforts in the United States





JNLWP International Impact

North American Technology Demonstration - Oct 2011

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

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

TRANSCOM CLO
POINT DEFENDER
COYOTE SHIELD

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

SOCOM CLO

NORTHCOM CLO
VIGILANT SHIELD

SOUTHCOM CLO
TRADEWINDS
PANAMAX

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

CENTCOM CLO
Semi Annual ATRF 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 Challenges

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 Challenges



Counter-Personnel Capabilities

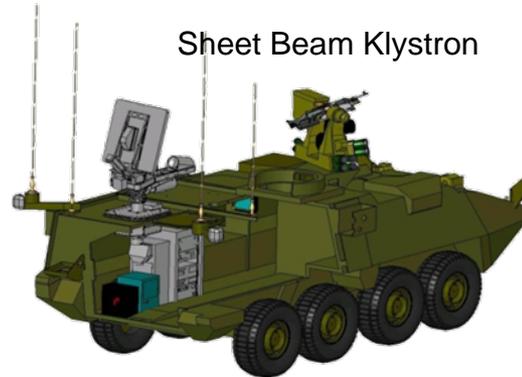
Suppress, Move, Deny & Disable Individuals



Long Range Human Electro-Muscular Incapacitation



40 MM HEMI Projectile



Sheet Beam Klystron

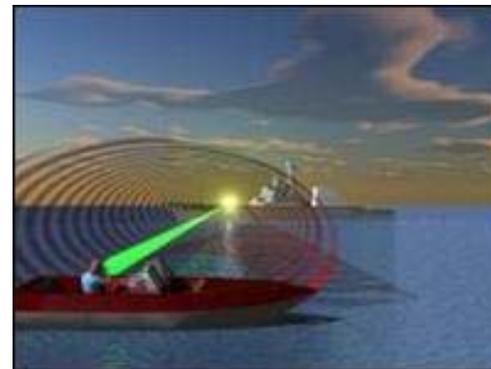
Active Denial Technologies



Malodorants

Counter-Materiel Capabilities

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



Directed Energy Vehicle / Vessel Stoppers

Distribution A: Approved for Public Release; Distribution is unlimited

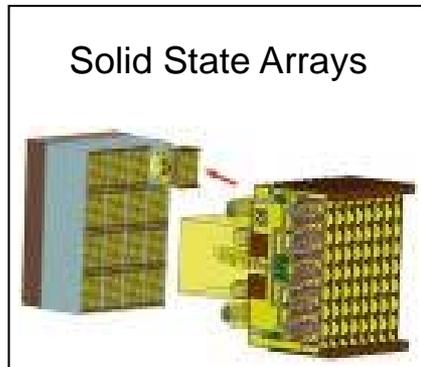


Far-Term Technology Challenges



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



Near Term Investment Considerations

- **Broad Agency Announcement (BAA) used to communicate science and technology challenges / knowledge gaps**
 - **Topics focused on Counter-Personnel and Counter-Materiel applications capable of reversible effects and human effects research to support effectiveness and safety evaluations**
 - **Release planned for latter half of September**
- **FY12 BAA soliciting applied research and advanced technology development proposals in the following areas:**
 - **Nanosecond Electrical Pulses**
 - **Clear-a-Space Technologies**
 - **Advanced Materials and Payloads**
 - **Mild Traumatic Brain Injury Thresholds/Modeling**
 - **Laser Induced Plasma Effects**
 - **Academic Research/Outreach Coordination**
- **For more information please visit: <http://jnlwp.defense.gov>**



Defense Against Terrorism (DAT) 11 Non-Lethal Capabilities

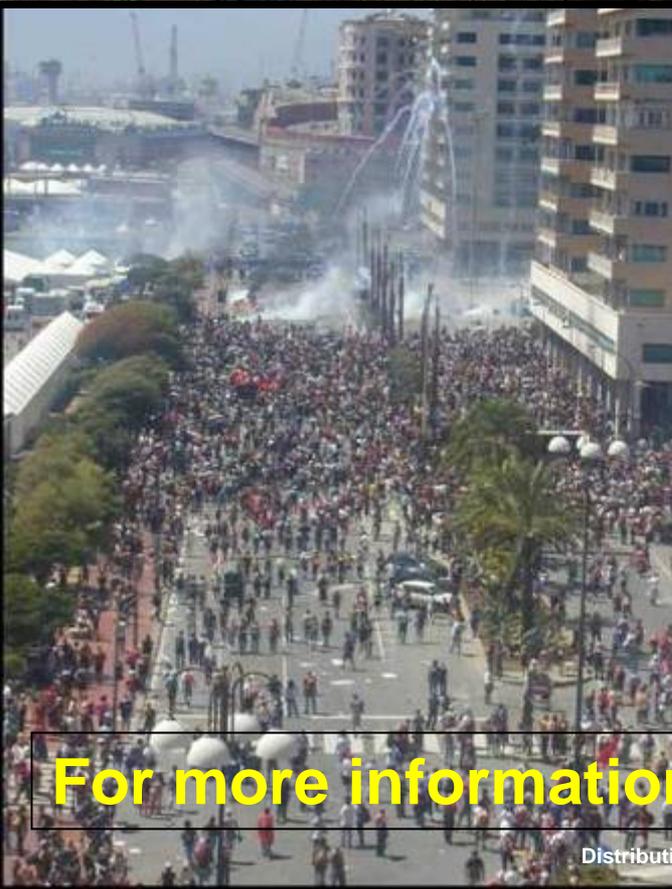


The Ottawa Convention Centre
25-27 October 2011, Ottawa, Canada

www.2011NATD.CA



Questions?



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



DoD NLW Management Structure

