



*Non-Lethal / Scaleable Effects Capabilities
Current to Future Force*



**Non-Lethal Technologies
for
Current & Future
Joint Military Operations**

Brief to NDIA Symposium

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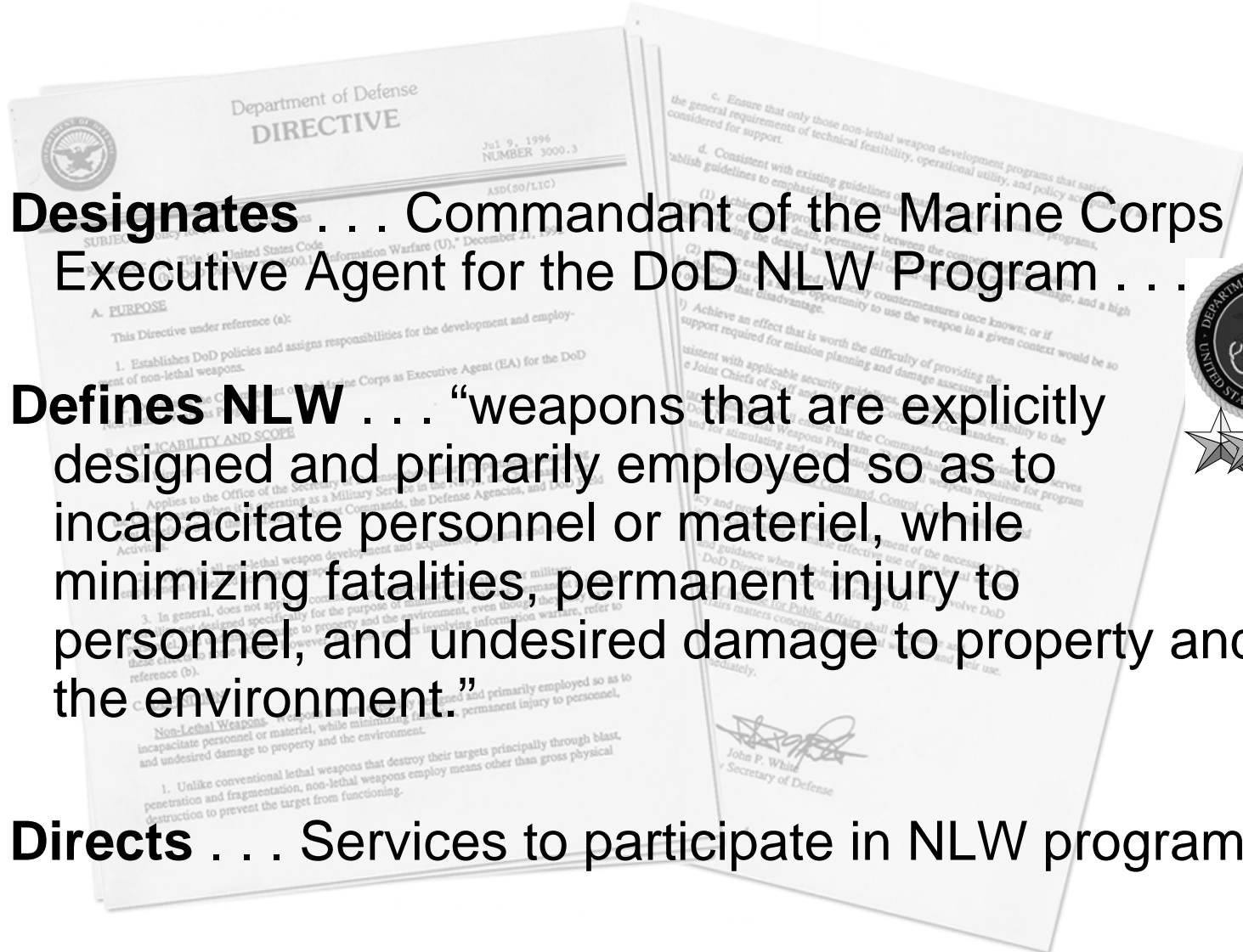
DoD Directive 3000.3, 9 Jul 96

Policy for Non-lethal Weapons (NLW)

... **Designates** ... Commandant of the Marine Corps
Executive Agent for the DoD NLW Program ...

... **Defines NLW** ... “weapons that are explicitly
designed and primarily employed so as to
incapacitate personnel or materiel, while
minimizing fatalities, permanent injury to
personnel, and undesired damage to property and
the environment.”

... **Directs** ... Services to participate in NLW program





Why Non Lethal ?



- ❖ Use NLW to **distract, disrupt, delay, degrade or deny** threat forces, combat functions, and facilities in pursuit of operational and tactical objectives with the **minimum force necessary**.
- ❖ Provide Commanders with **additional options** for:
 - **Operational offensive measures:** Crowd control, interdiction of tactical/strategic resources, conflict intervention, hostage retrieval, Military Operations on Urban Terrain.
 - **Defensive operations:** Force Protection
- ❖ **Required Capabilities**
 - Affect Human Capabilities
 - Defeat Materiel Systems
 - Provide Security and Surveillance
 - Attack Materiel Support Systems/Infrastructure



Army NLW Program Organization



Army Proponent for NL Capabilities

❖ The U.S. Army Military Police School located at Ft. Leonard Wood, MO, is the **Proponent** for all Army Non-Lethal capabilities and corresponding combat developments and concepts.



Project Manager for Close Combat Systems

❖ The Project Manager – Close Combat Systems located at Picatinny, NJ, has program management responsibility for Army Non-Lethal **Materiel** programs, and fielding the Army's Non-Lethal Capabilities Sets.



Systems Manager for Army NL Technology Integration

❖ The Research Development and Engineering Command - Armament, Research, Development and Engineering Center (RDECOM-ARDEC), located at Picatinny, NJ, has responsibility for leading the coordination of Army Non-Lethal **Technology** integration & development.



Non-Lethal Capabilities An Urgent Need . . .



Since 1995, the Army has increasingly required Non-Lethal Capabilities that could be employed in Military Operations Other than War.



**April 2000
TFF, KFOR, Kosovo**

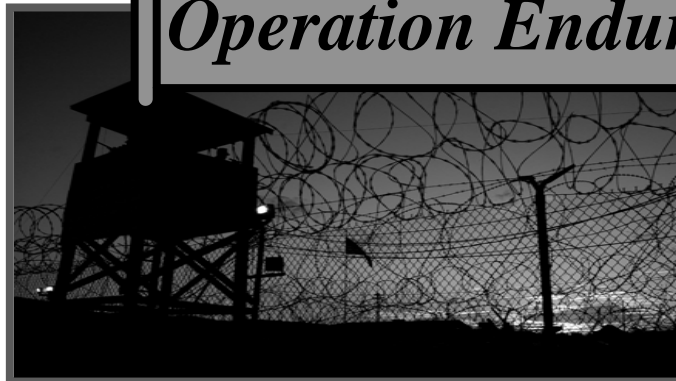


**June 2001
USA FORSCOM**

Operation Enduring Freedom!



**June 2001
TFE, SFOR, Bosnia**



**April 2002
SOUTHCOM,
Guantanamo Bay**



**January 2002
ARCENT, Kuwait**



Non-Lethal Capabilities ... A Growing Demand



Since March 2000, ARDEC has supported PM CCS in Urgently Fielding all of the Army's Non-Lethal Capabilities Sets.



**February 2003
ARCENT/CFLCC**



**Apr / May 2003
ARCENT/CFLCC**

Operation Iraqi Freedom!



**February 2003
Ft. Benning, GA**



**April 2003
ARCENT/CFLCC**



**Sep 2003
USAREUR**



Lessons Learned *...NL's are Effective...*



“Bottom Line is that our new equipment works well and the NLM kept us from having to kill someone as well.” - LTC Brown, Battalion Commander, Bn 709th (Task Force Falcon Provost Marshall)





Army Non-Lethal Capabilities Set

Examples of NLCS Items



Protective Equipment



Training Devices/Allocations



Enhancement Devices & Counter Materiel Systems



Counter Personnel Systems





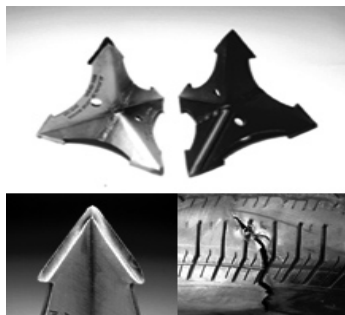
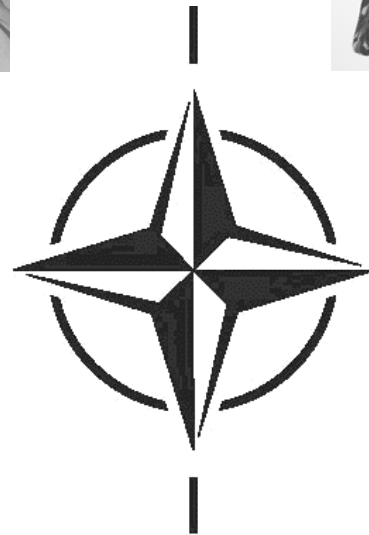
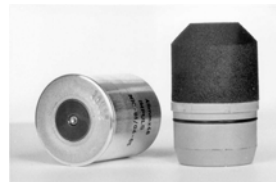
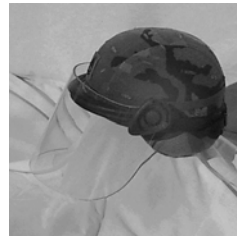
Lessons Learned **...Army NLCS Needs Re-Configuring...**



- ❖ Responding to User feedback and field experiences, the current configuration of the NLCS will be changed to increase modularity
 - Current NLCS was considered too bulky by Users
- ❖ Re-configuration of the NLCS from a battalion sized (200 person) set to a platoon sized (30 person) set is in-process.
- ❖ The Platoon Size NLCS will include updated items:
 - Expandable baton to replace wooden baton
 - M39 Individual RCA Dispenser (OC) to replace M36 IRCAD (CS)
 - M40 Practice Individual RCA Dispenser (IRCAD) to replace MK 4 Practice IRCAD
 - Electro-Muscular Disruption (EMD) devices & attachments
 - Vehicle Lightweight Arresting Device (VLAD)



NATO NL Capabilities for Crowd Control Operations





Lessons Learned



...New* NL Capabilities are Needed ...

M26 Advanced Taser®

- *1st Urgent Fielding of this Electro-Muscular Disruption capability to U.S. Army*



Multiple successful uses

FN 303 Less Lethal Launcher System

- *PM-REF, with support of ARDEC and JNLWD, rapidly equipped a ltd. quantity of this high rate-of-fire, multi-shot, blunt impact /marking capability*



Multiple successful uses

XM26E Taser® & X-Rail

- *Urgently Fielded this improved EMD capability 60% smaller and lighter than M26*
- *Integrated weapon system capability with under-barrel attachment for the M4 Carbine with Picatinny Rail*



Successfully employed

Vehicle Lightweight Arresting Device

- *Man portable, pre-emplaced, expendable spiked net*



Successfully employed

*** - Urgent Fieldings / Rapid Equipplings in support of on-going Operations**



DoD Joint Non-Lethal Weapons Core Capabilities and Functional Areas

Joint Mission Area Analysis (JMAA)

Counter- Personnel*

- *Area Denial to Personnel*
- *Crowd Control*
- *Incapacitate Ind'l Personnel*
- *Clear Facilities & Structure of Personnel*



Counter- Materiel*

- *Area Denial to Vehicles (Vessels, Aircraft)*
- *Disable/Neutralize Equipment*



* **Functional Areas / Tasks**
Prioritized by all CINCs at
1996 DoD NLW User's
Conference; Joint Concept for
NLW's
&
per JMAA Dec 2000

JMNS Approved by JROC Dec 02

JMAA conducted IAW CJCSI 3170.01A, Requirements Generation System



M1, Portable Vehicle Arresting Barrier



JOINT USER PAYOFF

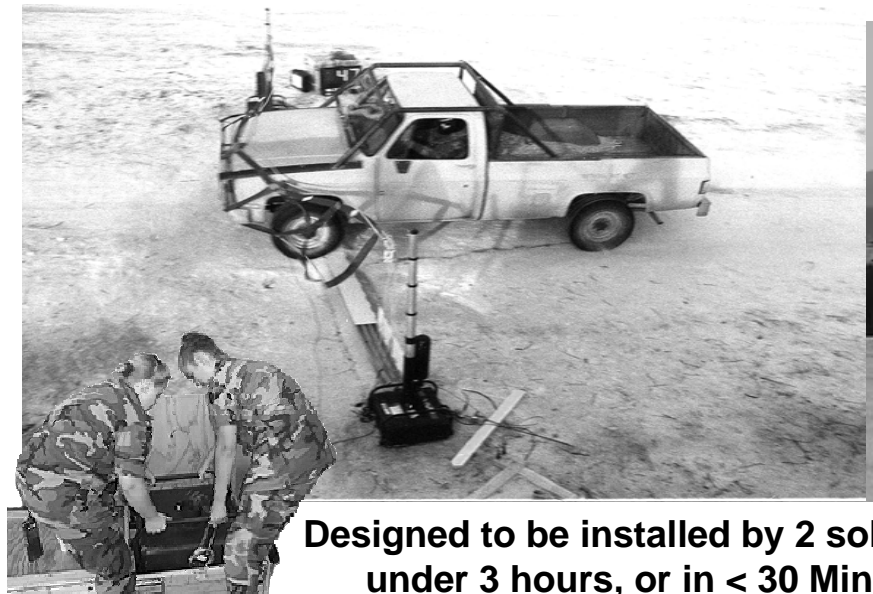


The PVAB was specifically designed to provide checkpoint security without endangering or disrupting normal traffic

- When emplaced, it resembles a standard speed bump, but has the NL capability of stopping a 7,500 lb vehicle at speeds up to 45 mph



Complete System
(packaged) weighs
in at 1100 lbs.
(< 650 lb unpacked)



Designed to be installed by 2 soldiers in
under 3 hours, or in < 30 Minutes
with expedient anchoring



Deploys in
1.5
seconds

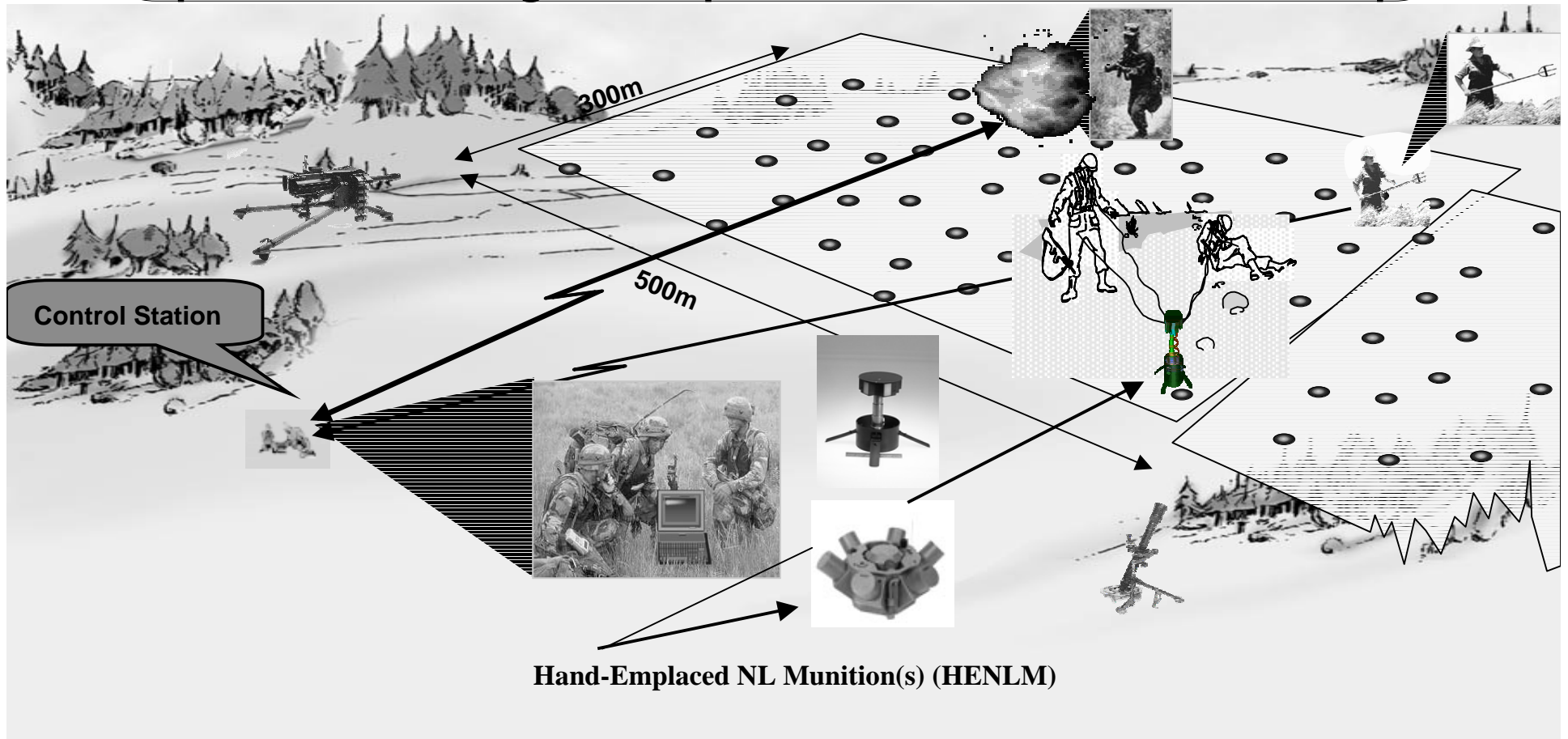


Area Denial-Personnel

“System-of-Systems” Operational Concept

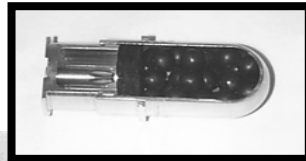
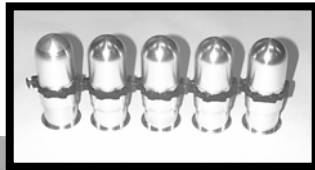
JOINT USER PAYOFF

Capable of Selecting Pre-emplaced NL to Lethal Effect as Required





Mk19 NL Mmunition-Short Range (XM1057)



JOINT USER PAYOFF

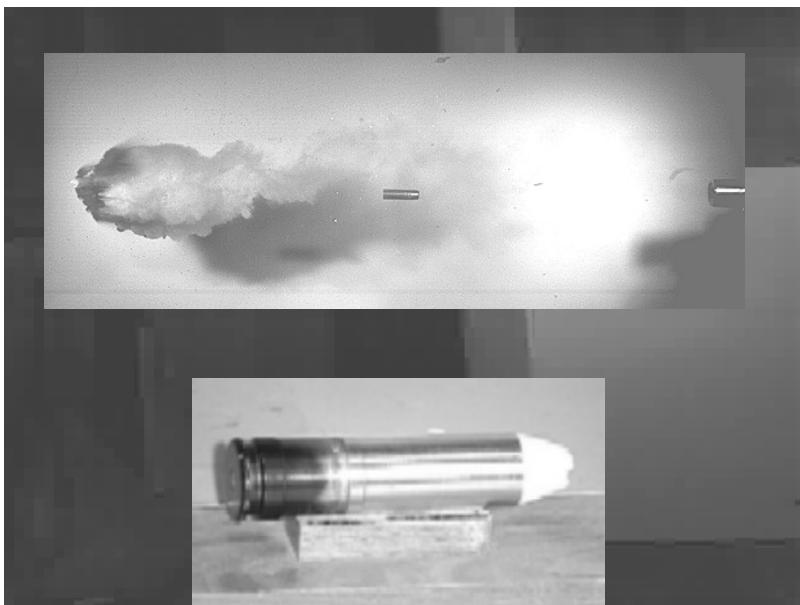
- Rapid-fire, Short Range, Crowd Dispersal capability
- Uses Existing Joint Service Crew-Served Weapon
- Applicable to Ground and Vehicle Mounted Mk19's
- Based on Kosovo After Action Report





Airburst Non-Lethal Munition

**for the XM25 / XM29 Integrated Air Burst Weapon System
(formerly Objective Individual Combat Weapon)**

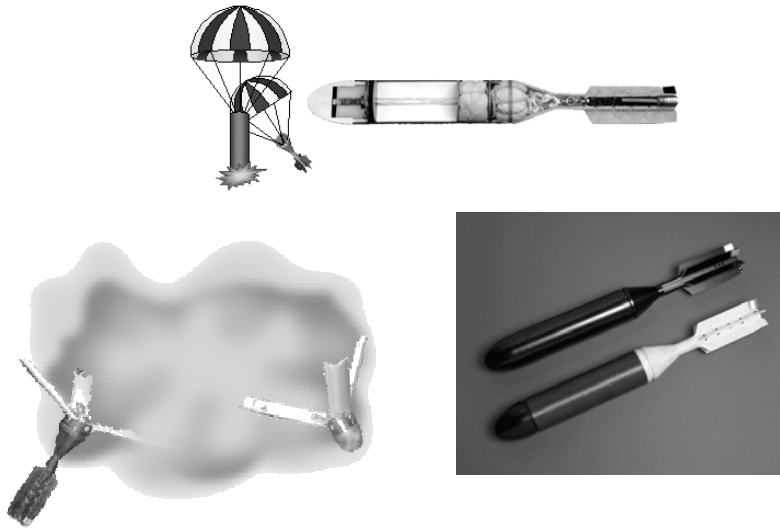


USER PAYOFF

- Long Range (250+ m) Counter Personnel capability for Individual Soldier
- Range Selectable NL Airburst Capability
- NL Rd for Objective Force Individual Weapon system
- Maintains dual L / NL system capability (“binary” scaleable effects) in an integrated weapon system



Non-Lethal Mortar Mmunition



USER PAYOFF

- Long Range (2+ km)
- Only Indirect Fire NL capability
- Deployable from Existing Platforms (60mm, 81mm, 120mm)
- Applicable to Stryker Brigade Combat Team and FCS increment I
- NL Cargo Round for multiple potential NL & other payloads (e.g., illumination, smoke)



Other NL Technology Opportunities



- **Integrated Weapon Systems with NL to L Capability**

 - **Advanced Kinetics**
 - **Controlled Kinetic Energy Weapon**

 - **Ballistically Projected Electro Muscular Disruption**
 - **Single Wire**
 - **Tetherless**
- **
- **Integration of NL Capabilities into Unmanned Robotic Vehicles**
 - **Unmanned Ground Vehicles**
 - **Unmanned Aerial Vehicles**





Roadmap for Army NL/Scaleable Effects Capabilities

Fiscal Year

98

00

02

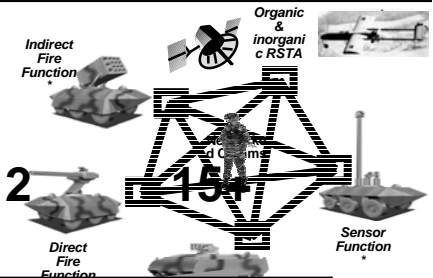
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**Vision-supported
Full spectrum relevance/use
Army Future Force/FCS**

JMAA

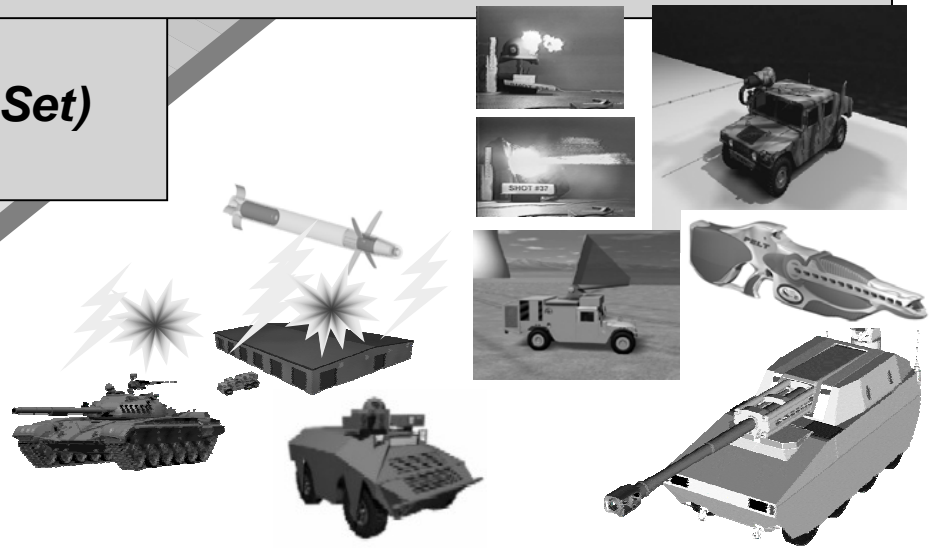
Joint NL Vision

**Tactical/Operational NLW - includes
Directed Energy Weapons (DEW)
Possible Strategic Options
TO&E inclusion**

Longer Range

**Militarized NL Weapons
Tactical (USA Capabilities Set)
Joint Service RDA**

**COTS/ NDI NL Weapons
Tactical/Force Protection
• US Army Capabilities Set**





Conclusions



- **Non-Lethal capabilities are in use, and proving their effectiveness, in the Army & Joint Services**
- **Non-Lethal needs and capabilities will continue to grow in the Future Force**
- **New, improved and integrated NL technologies will be required capabilities in the Current to Future Force and Joint Military Operations**
- **Technology advancements in Kinetic, Conducted and Directed Energy will offer integrated weapon systems capabilities with Scaleable Effects across the force spectrum**

