

Joint Program Office for Special Technology Countermeasures

Non-Lethal Countermeasures

21 March 2000



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Briefing Classification:

UNCLASSIFIED

Agenda

Information Briefing

- ❑ **NLCM Mission**
- ❑ **Major Thrusts & Accomplishments**
- ❑ **Technologies Countermeasures**
- ❑ **Investment Criteria**
- ❑ **Summary**

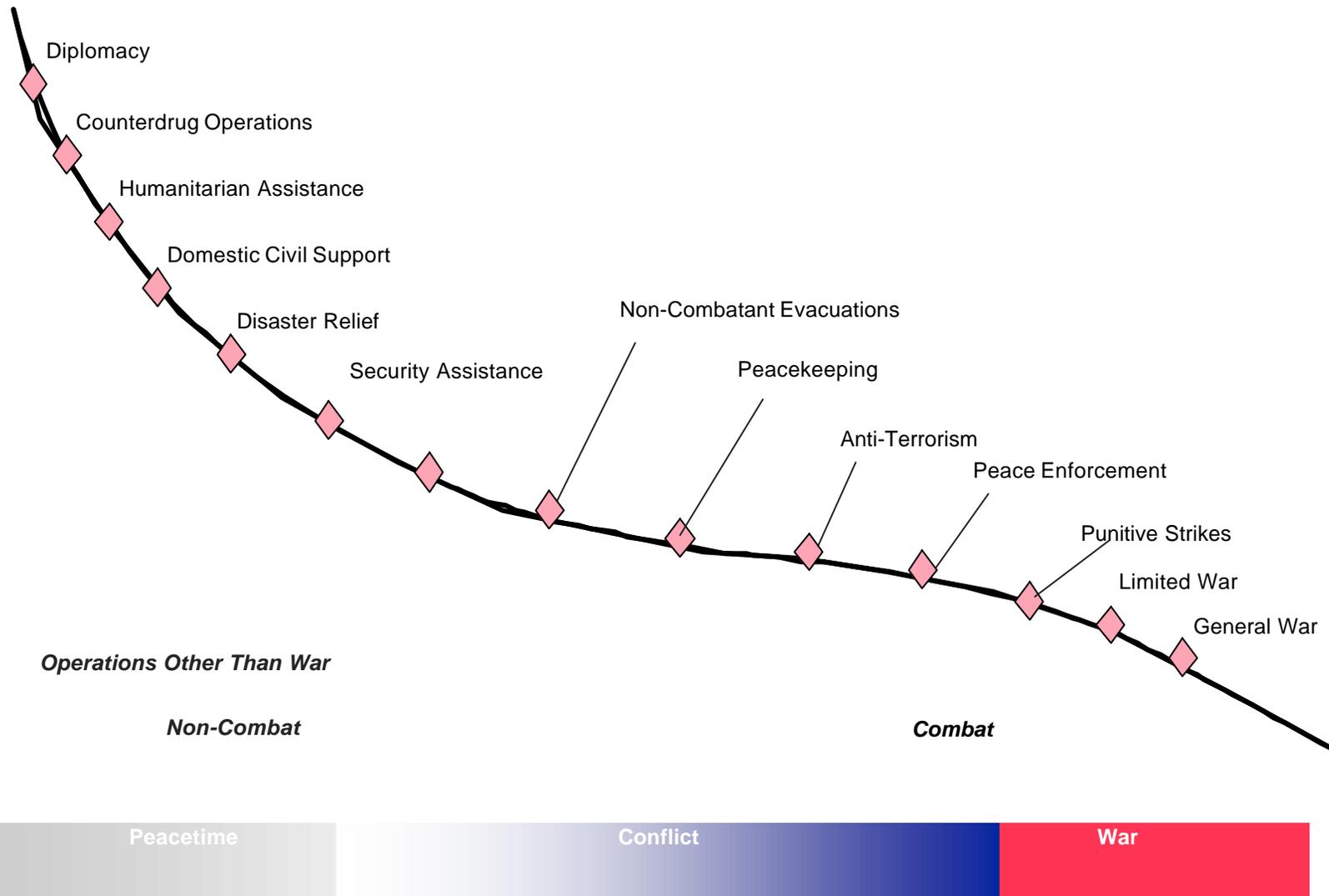
Non-Lethal CM Mission

- ❑ **Assess the U.S. and foreign NLW in the inventory and under development**
- ❑ **Develop countermeasures options**
- ❑ **Conduct CM technologies/effects research and development**
- ❑ **Conduct vulnerability and susceptibility testing**

Need for Non-Lethal CMs in DoD Forces

- ❑ **CM to provide reaction time for retaliation after NLW attack**
- ❑ **Increased reliance on GOTS/COTS by US systems**
- ❑ **NL Technologies can be purchased from U.S. COTS/GOTS and from other countries**
- ❑ **Psychological Effects of NLWs**
- ❑ **CM to provide mitigating options of NLW effects**

Why Non-Lethal Weapons & Countermeasures?



Threats

Foreign:

- Are developing NLW
- U.S. systems & technologies stolen or copied

Transnational:

- Affinity groups may use NLW for agendas
- Drug cartels may use in operations

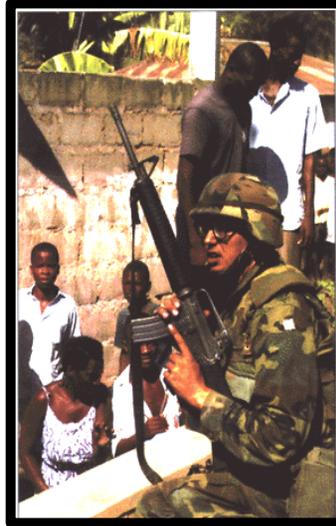
Domestic:

- Disgruntled citizens/illegal militia factions may find attractive
- Criminal element may use to aid and abet

JPO-STC Non-Lethal Countermeasures

Major Thrusts

- ❑ Electromagnetic
- ❑ Malodorants
- ❑ Pepper sprays, tear gasses
- ❑ Foams
- ❑ Kinetics & entanglers
- ❑ Lasers
- ❑ Adhesives & Caustics



Objectives

- ❑ Develop countermeasure options to:
 - Detect
 - Decontaminate
 - Harden
- ❑ Develop implementation strategies
- ❑ Conduct CM Technologies / effects R&D
- ❑ Develop supporting documentation
- ❑ Service as Independent Technical Advisor & Coordinator to the JNLWD

The Need

- ❑ NL Technologies being developed by unfriendly foreign forces
- ❑ NL Technologies can be purchased through COTS/GOTS & from other countries
- ❑ NL Technologies can be stolen or copied
- ❑ Increased reliance on GOTS/COTS in NLW development

Current Efforts

- ❑ Investigating world-wide NL Technologies development
- ❑ Conduct Independent Technical Assessments of Technologies
- ❑ Investigating CM possibilities for technologies identified to date
- ❑ Planning demo testing of CMs to coincide with USMC field trials
- ❑ Addressing system specific SAP coordination

Crowd Control: Malodorants/Irritants CM

CM Efforts:

Develop neutralizers for host of malodorants and irritants

- Compare identified neutralizer's chemical formula's
- Verify effectiveness of identified neutralizers for malodorants
- Select COTS neutralizer for irritants – verify effectiveness
- Perform necessary health/environmental testing

Investigators:

ECBC

RCAN program

Monell Senses Center

Federal Law Enforcement Training Ctr.

Status:

Malodorants

- Two neutralizers (COTS) identified
- Comparison testing proceeding against Army formula & COTS formula

Irritants

- Down select process and Environmental, Health & safety review complete
- Testing planned w/100 volunteers
- Test & Evaluation Master Plan (TEMP) incorporated for comments

Implementation Strategy include JNLWD, PM Soldier



Crowd Control: Kinetics CM

CM Effort:

Analyzing Military Police and Law Enforcement Riot Gear

- Investigating riot gear to meet Mil-Specs and ANSI standards
- Investigating various body models for future CM testing

Investigators:

NLW developers
ECBC

Status:

- Piggyback investigations w/NLW developers planned
- Research of Mil-specs & ANSI standards on-going

Bounding Net



**Modular Crowd Control
Munition**



Lasers CM

CM Efforts:

- Vulnerability and Susceptibility Assessment of Night Vision Goggles, Range Finders, Target Indicators, and Thermal Sensors
- Multi-spectrum optical limiting feasibility study
- Development of phthalocyanine, C₆₀ fullerene lenses

Investigators:

Natick

Los Alamos

NSWCDD

NSWCCD

Status:

- Compelling need statement delivered
- IPT setup 4/00
- Developing MOA's 4/00
- Research/documentation of electro-optical equipment continuing
- Testing of electro-optical tubes planned
- Feasibility study for multi-spectrum protection on-going



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Foams

CM Efforts:

Rigid and Slippery Foams

- Surface preparation
- Surface types
- Post cure removal
- Neutralization

Investigator:

ECBC

CM Efforts:

Rigid foam investigation completed

- No way to defeat rigid foam using 30 different solvents
- Surface type evaluated
- Does not adhere to semi-gloss or gloss painted surfaces

Slippery foam – down select by developers not completed as yet



Directed Energy: Personnel CM

CM Effort:

- Evaluation of fabrics, mesh and films for directed energy Protection
- Development and testing of aluminized suit

Investigators:

**Electromagnetic Effects (EM) Division (J50) NSWCDD
Brooks Air Force Base**

Status:

- Two protection fabrics identified
- Working with Natick to develop protective suit
- Demonstration of fabric 4/00
- Anticipate prototype suit 9/00

Investment Criteria

1. Factors determining NLCM investments

- Meet individual service specific operational requirements
- Meet ROE policies & requirements
- Must be logistically supportable
- Requires minimal training
- High benefit / cost ratio
- Implementation timing in sync with NLW development & INTEL issues
- Availability of procurement funds

2. Intelligence Threat Assessment

NLCM Summary

- Non-Lethal Countermeasures initiative underway
 - **Identified technologies of interest for investigation**
 - **Monitoring intelligence for new capabilities**
 - **Identifying candidate systems for susceptibility/vulnerability assessment**
 - **Development of Countermeasures**
 - **On-going feasibility studies for multi-spectral laser productions**
 - **Assessing vulnerability of electro-optic equipment to lasers**