



Individual Protection for Expanding Warfighter Missions

March 8, 2006

PRESENTED TO:
**Chemical Biological Individual Protection
Conference
Charleston, SC**

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Introduction

- **Overview of JPEO CBD**
- **Things Shaping What We Do**
- **Key Technology Needs**



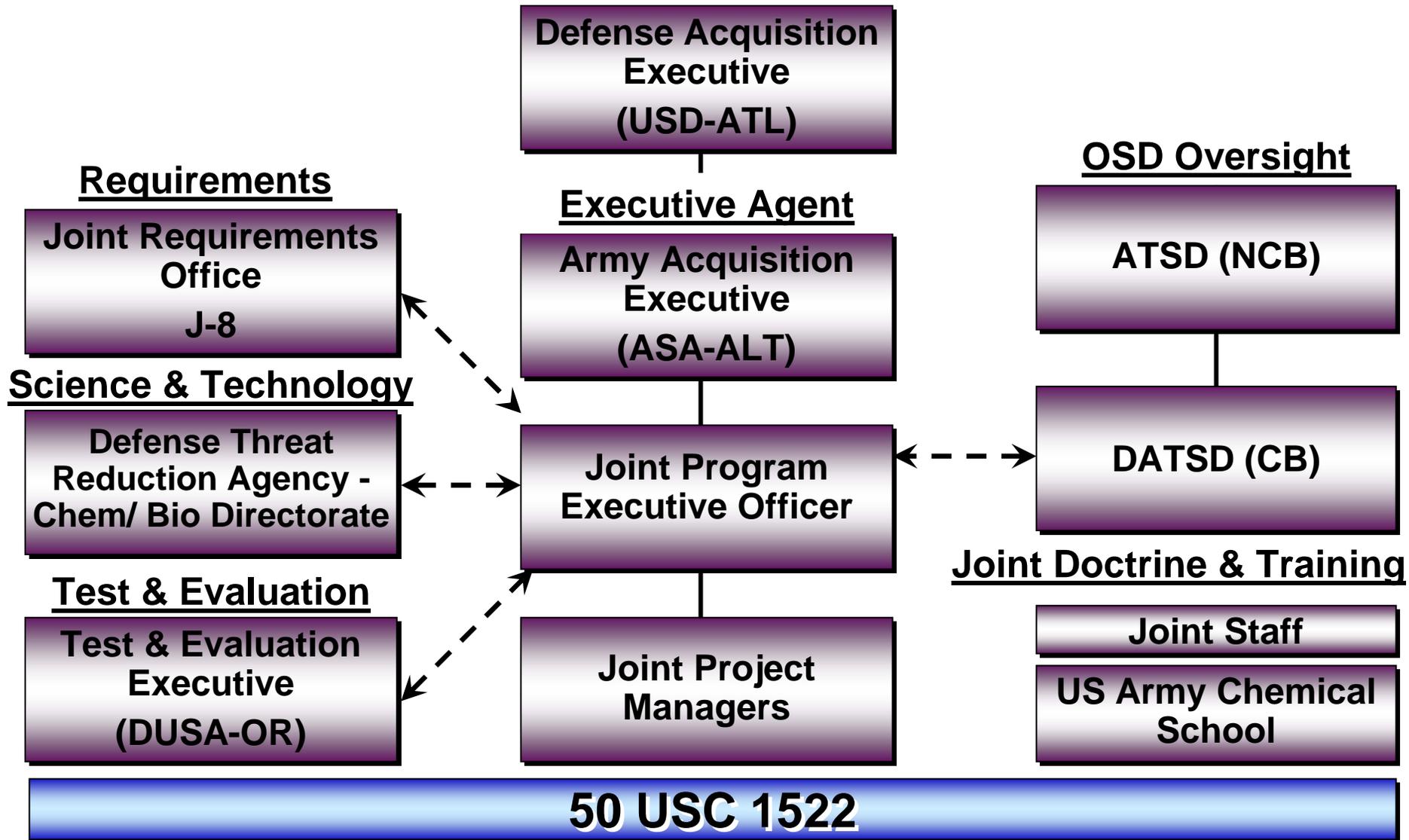
Joint Program Executive Office for Chemical and Biological Defense

Mission

The Joint Program Executive Office for Chemical and Biological Defense is Responsible for Research, Development, Acquisition, Fielding, and Life-cycle Support of Chemical, Biological, Radiological, and Nuclear (CBRN) Defense Equipment, Medical Countermeasures, and Installation and Force Protection Supporting the National Military Strategy



Chem/ Bio Defense Program Acquisition Organizations





What We Do Every Day

- **Support Current Operations**
- **Improve Current Systems**
- **Build the Future**

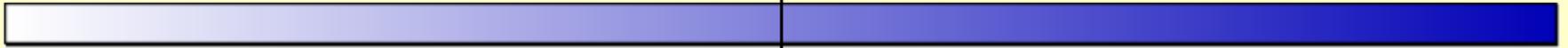


The Mission

Current Operations

Improve Existing Capabilities

Future Capabilities



Mature/ Maturing Technology

New Technology

APPLY TECHNOLOGY FOR WARFIGHTING CAPABILITIES



DoD Chemical and Biological Defense

Expanding Roles and Missions

Infrastructure

Power Projection

Battle Space

“Threats”



“Classic”
CBW

Bio-Engineered
And
“Non-Traditional”
Threats

Environmental
Threats - Toxic
Industrial Chemicals
(TICs)/ Toxic Industrial
Materials (TIMs)

Environmental/
Medical
Surveillance
Infectious
Diseases



Things Shaping What We Do

- **Quadrennial Defense Review – February 2006**
- **Homeland Defense Strategy – June 2005**
- **Stability Operations**



The 2006 Quadrennial Defense Review

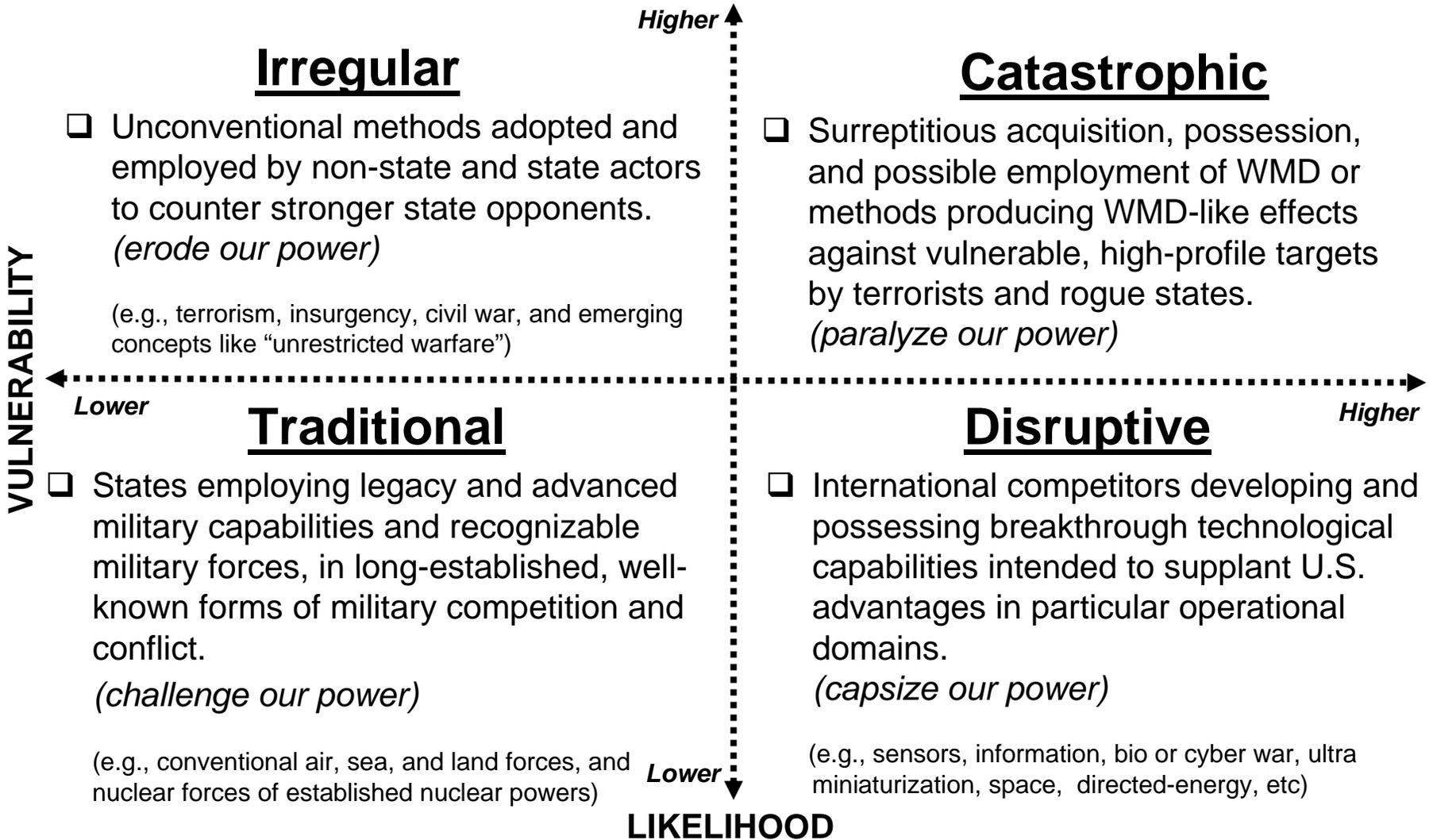
- **Applies Lessons from Four Years of War Against Violent Extremists**
- **Continues the Transformation of the DoD to Meet the Changing World Threat**
- **Promotes Intergovernmental Cooperation**
- **Emphasizes Building our Coalition Partner's Military Capabilities to Fight the Global War on Terror**





Defense Strategy

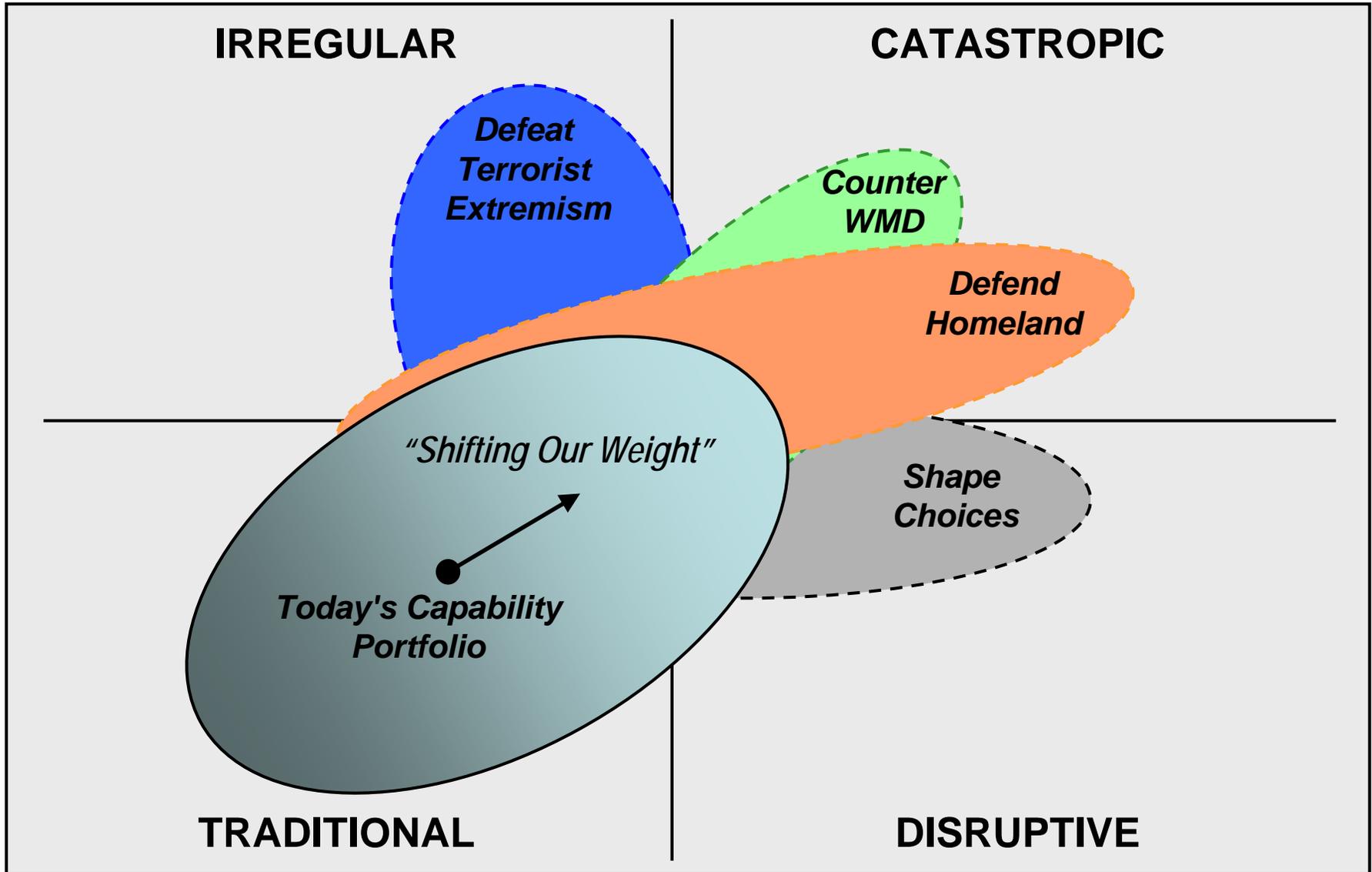
Security Environment: 4 Challenges



No Hard Boundaries Distinguishing One Category from Another



Re-Balancing Future Force Capabilities





Refined Force Planning Construct

Construct for Shaping the Future Force

- **Steady-state & surge operations**
 - Homeland Defense
 - Sustained Irregular Warfare
 - Conventional Campaigns
- **Tailored Deterrence**
 - Advanced Military Competitors, Rogue States, Terrorist Networks
 - Strengthened Deterrence Against Opportunistic Aggression/Coercion
- **Two-war capacity**
 - Varying Levels of Effort
 - Stress-on-the-Force Elasticity



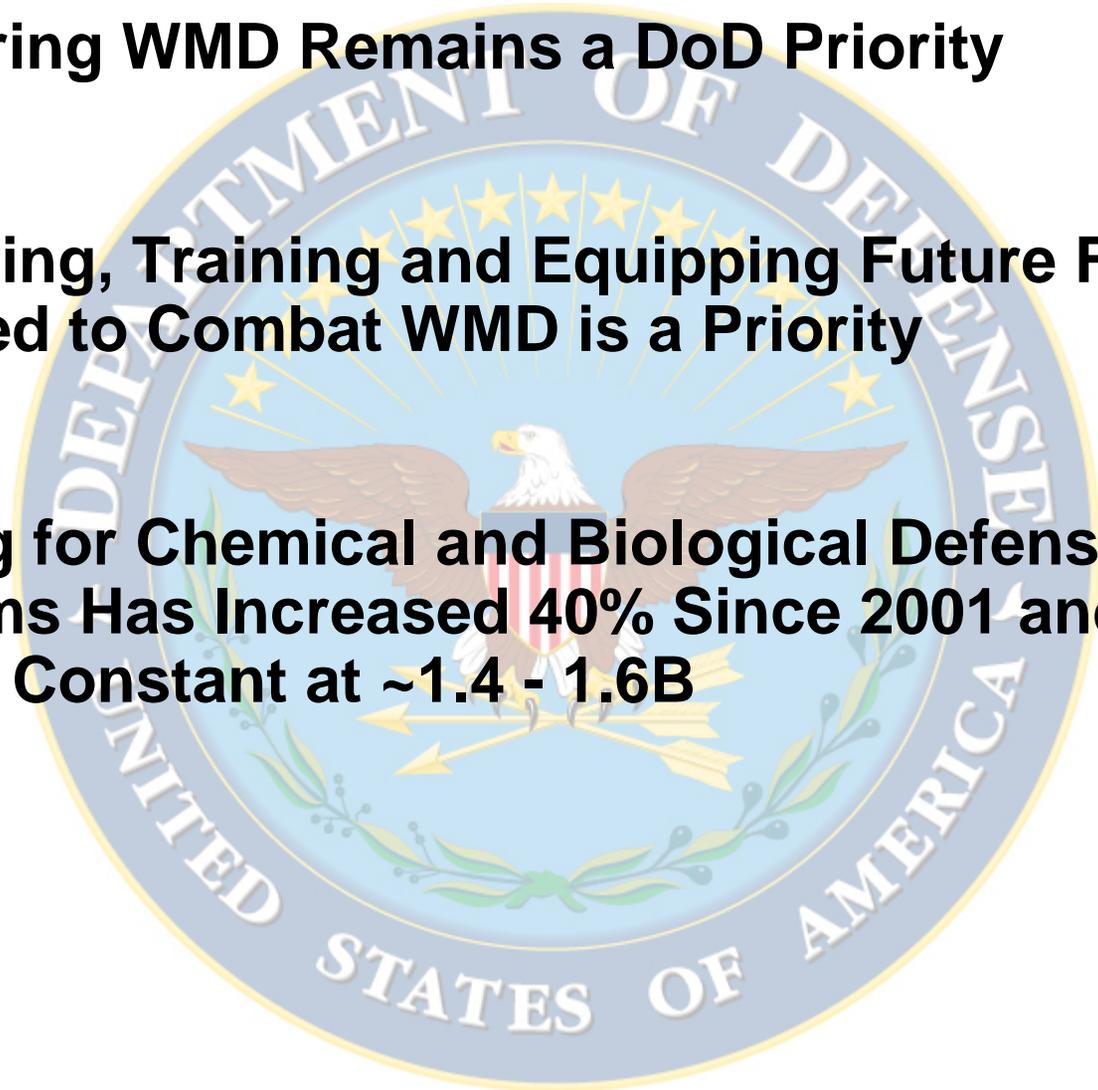
Sizing Variables:

Frequency	Number	Scale / Intensity
Concurrency	Ops	Risks
Policy	Environment	Partner Capabilities
		Duration



QDR and WMD

- **Countering WMD Remains a DoD Priority**
- **Organizing, Training and Equipping Future Forces Designed to Combat WMD is a Priority**
- **Funding for Chemical and Biological Defense Programs Has Increased 40% Since 2001 and Will Remain Constant at ~1.4 - 1.6B**





Radical Islamists On Using CBRN

- **“use of nuclear, dirty bombs, chemical and biological weapons by martyrs is justified as part of holy war strategy” (al-Qaeda message board, 11 August 2005)**
- **“Attacking Washington Metro with chemical weapons to achieve amazing results” (al-Qaeda message board, 11 August 2005)**
- **“The nuclear war is the solution for destruction of the United States.” (Radical Islamist website, 26 December 2002)**



So What?

Fallujah 2004



Chemical Bottles



Potassium Cyanide



Potassium & Sodium Cyanide



Sensitive Site Exploitation Teams



Mission: Identify NBC Weapon Stores and Manufacturing Facilities.

Challenge: Provide “Full Spectrum” Individual Protection and Chemical/ Biological Detection Capabilities.



Capabilities Protecting the Warfighter

**Support
Operations**



Delivering Warfighting Capability
(Best Technology - Right Place and Time)

**Build the
Future**

**Improve
Current
Systems**





JPM IP Programs/Procurements

- **New/ Ongoing Programs:**

- **Joint Service Lightweight Integrated Suit Technology (JSLIST) Ensemble, Garment, JB1GU, JB2GU, MPS, MULO, AFS**
- **Joint Protective Aircrew Ensemble (JPACE)**
- **JSLIST Additional Source Qualification (JASQ)**
- **Joint Service General Purpose Mask (JSGPM)**
- **Joint Service Aircrew Mask (JSAM)**
- **Joint Service Chemical Environmental Survivability Mask (JSCESM)**
- **M45 Mask**
- **Joint Service Mask Leakage Tester (JSMLT)**





Upcoming Efforts

PRODUCTION:			
Joint Chemical Ensemble (JCE) *	JPM IP	FY08	\$37.6M
JSLIST Spiral	JPM IP	FY09	
JSCESM	JPM IP	FY09	

SCIENCE & TECHNOLOGY:			
Enhanced Respiratory Protection	JSTO/ ECBC	FY06-08	
New Generation Mask	JSTO/ ECBC	FY06-08	

*** *Competitive Contract***



Key Technical Challenges

- **Filters:**
 - Longer Lasting
 - Higher Flow Capacity
 - Lower Breathing Resistance
 - Toxic Industrial Chemical Capability
 - Meet New NIOSH CBRN Standards

- **Fabrics:**
 - Lighter
 - Cooler
 - More Resistant to Threats
 - Better Durability and Ruggedness
 - Residual Life Indicators
 - Dual Warfighter/ Responder Certifications

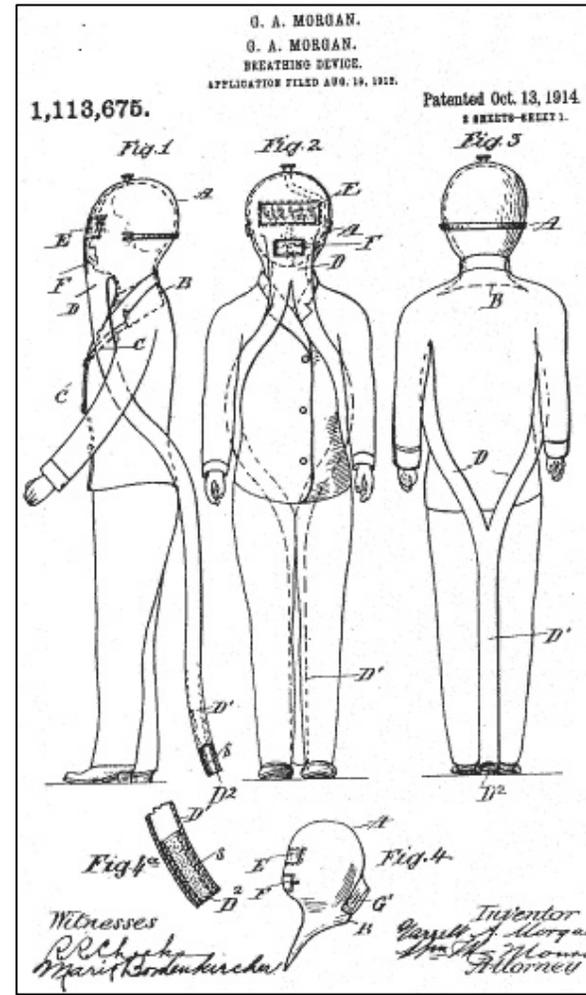
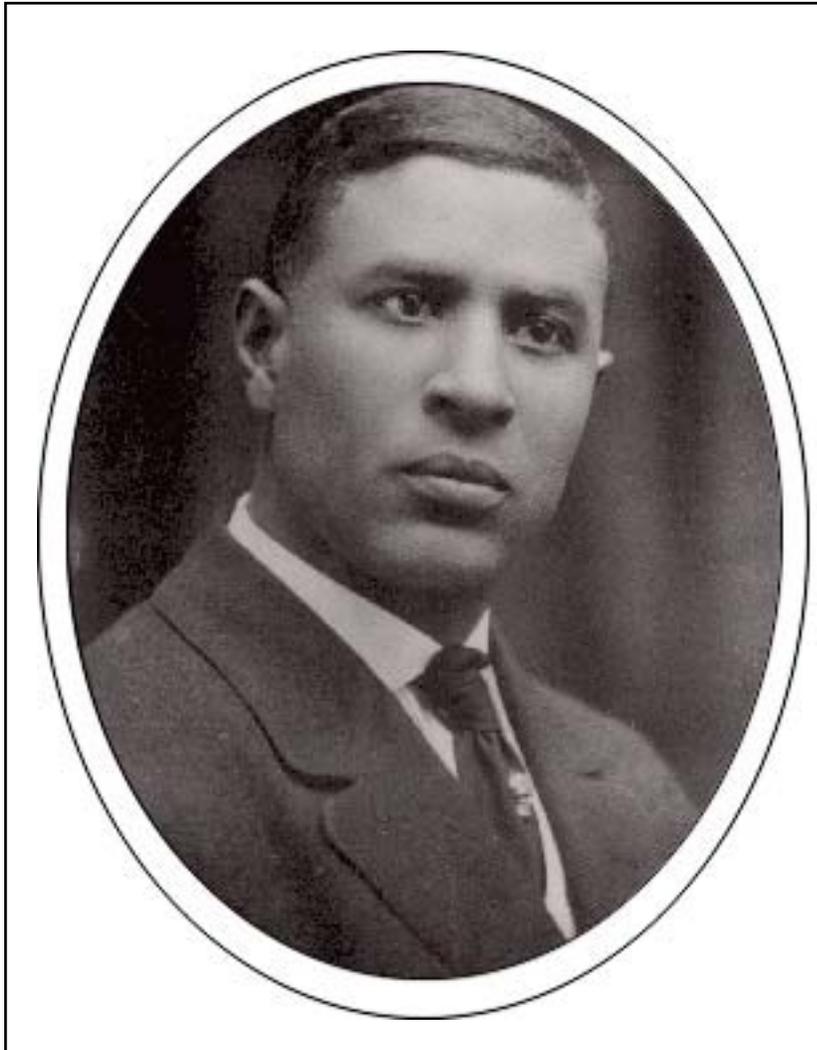


Technology Opportunities

- **Self-Detoxifying Materials:**
 - Lightweight
 - Chem/ Bio Protective
 - Employ Nanofibers, Nanoparticles, and Nanoreactors

- **End-of-Service-Life Indicators for Filters:**
 - NBC Mask Filters
 - Low-Cost
 - Senses Many Chemical Warfare Agents (CWAs)

Garrett A. Morgan 1875-1963



Inventor, Entrepreneur, Hero



The Water Crib Tunnel Disaster

25 July 1916



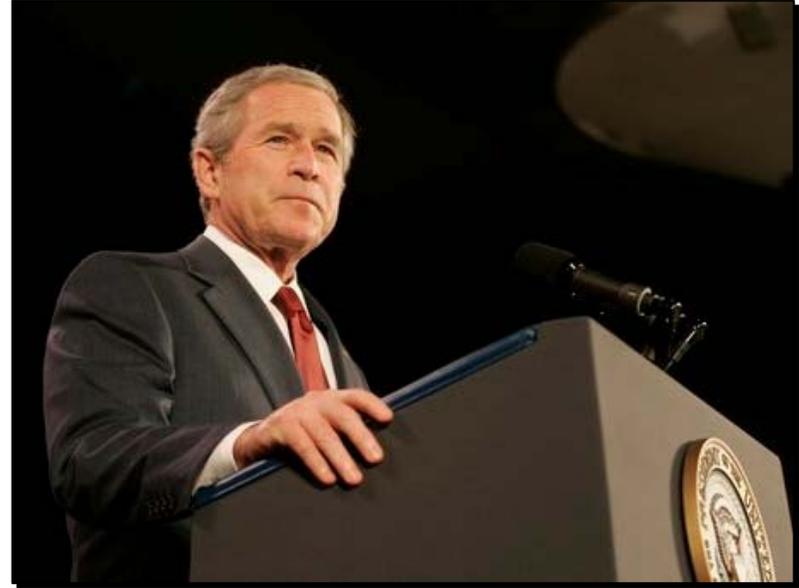
Accepted Risk – Produced Results



WMD Threat Perspective

“The greatest threat before humanity today is the possibility of secret and sudden attack with chemical or biological or radiological or nuclear weapons.”

***President George W. Bush,
February 11, 2004***





Summary

- **Individual Protection Threats are Real**
- **Training and Equipping Future Forces to Combat WMD is a Priority**
- **Expanding Mission Sets Require New Equipment, New Technologies**

Joint Program Executive Office



Chemical and Biological Defense