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Protecting the Warfighter

PRESENTED TO:
IP / DECON / CP Conference
Virginia Beach, VA
October 23, 2007

STEPHEN V. REEVES
Major General, USA
Joint Program Executive Officer
for Chemical and Biological Defense
(703) 681-9600
Outline

• Threat

• US Strategic Planning

• Response
The Way We Were…
THE THREAT IS REAL
‘Key Judgments’ on Terrorist Threat to US

“We Assess that Al Qaeda Will Continue to try to Acquire and Employ Chemical, Biological, Radiological, or Nuclear Material in Attacks and Would Not Hesitate to Use Them if it Develops What it Deems is Sufficient Capability.”

- July 2007 National Intelligence Estimate on “The Terrorist Threat to the U.S. Homeland”
“It’s clear the United States and our allies will continue to be threatened by violent extremists, almost always operating in countries with which we are not at war. The ambition of these networks to acquire chemical, biological, and nuclear weapons is real, as is their desire to launch more attacks on our country and on our interests around the world.”

United States Secretary of Defense
National Response – Policy and Guidance

• National Strategy to Combat Weapons of Mass Destruction Articulates a Strategy Built Upon the Three Pillars of Nonproliferation, Counterproliferation, and Consequence Management

• National Security Strategy (NSS) – “Prevent our Enemies From Threatening Us, Our Allies, and Our Friends with Weapons of Mass Destruction

• National Military Strategy to Combat WMD (NMS-CWMD) Amplifies the Strategy in the NSS and Provides a Framework for Combating WMD to DoD Components

• 2006 Quadrennial Defense Review Report Identifies Four Priorities: Defeat Terrorist Networks, Defend the Homeland, Shape Choices of Countries at Strategic Crossroads, and Prevent Acquisition or Use of WMD
Layered Defense Approach

National Strategy

Non-proliferation

Counterproliferation

Consequence Management

Stopped by Threat Control & Threat Reduction

Stopped by Deterrence

Stopped by Interdiction

Stopped by Counterforce & Elimination

Stopped by Active Defense

Stopped by Passive Defense

Consequence Management Restoration Operations

Adversary’s WMD Capability

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Military Mission Areas

Mission: Dissuade, deter, defend against and defeat those who seek to harm the United States, its Allies and partners through WMD use or threat of use, and, if attacked, mitigate the effects and restore deterrence.

Detection

Intelligence

Defeat, Deter

- Offensive Operations
- WMD Elimination
- Active Defense
- Passive Defense
- WMD Interdiction

Defend, Respond, Recover

- Passive Defense
- Active Defense
- WMD Consequence Management
- Threat Reduction Cooperation

Prevent, Dissuade, Deny

- Enemy capable of WMD use, threat of use or subsequent use

Reduce, Destroy, Reverse

- Others agree to secure or destroy WMD

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An Unbounded Problem?

• No Clear Enemy

• No Front Line

• No Set Definition of Victory

Success is Measured by Things That “Don’t Happen”
Where Does the Military Fit?

- **National Security Strategy**
  - Prevent WMD Threats
  - Transform Institutions

- **National Strategy for Homeland Security**
  - Prevent Attacks/ Reduce Vulnerability/ Minimize Damage/ Recover

- **National Defense Strategy**
  - Secure From Direct Attack
  - Strengthen Alliances
  - Continuous Transformation
  - Deter Threats
  - Active, Layered Defense
  - Capabilities Based

- **Strategy for Homeland Defense and Civil Support**
  - 10 Year Time Frame
  - Protect Through Active Layered Defense
  - DoD Provides Support to a Lead Federal Agency when Directed

ACTIVITIES → OBJECTIVES → CAPABILITIES
The Changing Nature of the Threat

Commercial Chemical Compounds
- Phosgene, Chlorine, Chloropicrin
- Mustard (H) Agents, Lewisite

Cholinesterase Inhibitors
- Tabun (GA)
- G Agents (GB, GD, GF)
- V Agents (VX)

“Classical” Biological Agents
- Bioregulators
- Genetically Modified Agents

Advanced Biological Agents

## Implications of Evolving Threat on Protection and Decontamination

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<th>EVOLVING THREAT</th>
<th>CAPABILITY IMPACTS</th>
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<td>• Wide Range of Potential Agents</td>
<td>• Broad Spectrum Protection</td>
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<tr>
<td>• Battlefield, Forward/ Rear Bases, CONUS/ OCONUS Installations all Targets of</td>
<td>– Toxic Industrial Chemical/ Toxic Industrial Material (TIC/ TIM)</td>
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<td>Asymmetric Attack</td>
<td>– Pre-treatments</td>
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<td>• Generally Smaller Attacks, Some TIC Releases Potentially Large</td>
<td>– Novel Agents</td>
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<td>• Integrate Protection Capability Across DoD, Not Just Tip of the Spear</td>
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<td>• Civil-Military Integration</td>
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<td>• Shorter Duration Protection</td>
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Capabilities Protecting the Warfighter

SUPPORTING CURRENT OPS

IMPROVING FIELDDED SYSTEMS

DELIVERING WARFIGHTING CAPABILITY
(Best Technology - Right Place and Time)

BUILDING THE FUTURE
Individual Protection Fieldings

Joint Service Chemical Environment Survivability Mask (JSCESM)

Improved Fit, Increased TIC Capability, Reduced Burden

Joint Service General Purpose Mask (JSGPM)
Individual Protection

- Joint Service Lightweight Integrated Suit Technology (JSLIST)
  - Universal Camouflage Pattern
    - Type II: Most Application
    - Type VII: Special Ops
  - Increased Durability
  - Reduced Weight and Improved Fit
- Joint Service Mask Leakage Tester (JSMLT)
- Alternative Footwear System (AFS)
- Integrated Footwear System (IFS)
- JSLIST Block 2 Glove Upgrade (JB2GU)
  (24 hours of protection / up to 30 days of wear)

- Enhanced Suit Closures and Higher Confidence
- Reduced Heat Stress by 15%
Decontamination Fieldings

Lightweight Multipurpose Decontamination System (LMDS)

Replaces M17

Army ONS – Modified COTS Interim Capability Prior to Joint Service Transportable Decontamination – Small Scale
Joint Service Transportable Decontamination System – Small Scale (JSTDS-SS)

Transportable Decontaminates:

- Tactical Vehicles
- Crew-served Weapons
- Small Aircraft
- Shipboard Surfaces
- Limited Facilities and Terrains
Joint Service Personnel Decontamination System (JSPDS)

Improved Performance - Increased Capability for Current and Emerging Threats

Reactive Skin Decontamination Solution (RSDL)
Collective Protection Fieldings (Ongoing and Upgrades)

- Collectively Protected Expeditionary Medical Support System (CP EMEDS)
- Collectively Protected Deployable Medical System (CP DEPMEDS)
- Collectively Protected Small Shelter System (CP-SSS)
- Chemical Biological Protective Shelter (CBPS)
- Shipboard Collective Protected System (CPS)
Challenges
Challenge: Collective Protection

- Protect Critical Mission Operations
- Technical Challenges
  - New Air Purification Technologies that are:
  - Modular/ Flexible for Ease Of Platform Integration (e.g., Expeditionary Fighting Vehicle, Future Combat System, Littoral Combat Ship)
  - Minimize Footprint Burden to Platforms
  - Protect Against Evolving Threat
  - Reducing/ Eliminating Consumables
  - Ingress/ Egress for Open Hatch Operations
Challenge: Mass Casualty Decontamination

How do you go from decontaminating ambulatory, protected Warfighters…

...to hundreds of incapacitated, unprotected civilians?
Challenge: Building Decontamination

We need to decontaminate military platforms....

.... and also civilian buildings
Challenge: Decontaminants

THREAT

Many Countries With Known Capabilities

Few

AGENT

Chemical Biological

TIC/TIM Chemical Nerve NTA Bio-Engineered Viral Biotoxin Bacterial
Chlorine Mustard Tabun Anthrax
Cyanide Phosgene Sarin Small Pox Botulinum Anthrax

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Challenge: Individual Protection

- Burden:
  - Weight
  - Breathing Resistance
  - Thermal
  - Reduce

- Protection:
  - Increase

Threat
Challenge: Individual Protection

FROM THIS...

TO THIS...
Building the Future
Integration of Material Research to Achieve Low-Burden Protection

Individual Protection

Helmet/Respirator Integration

Reticular Chemistry

Nano-Fibers

Human Performance

Self-Detoxification

Switchable Fabrics

Agent Detecting Fibers

 Demonstrate an Integrated Concept in FY2010; Use Thermal Burden as an Independent Variable
Decontamination Vision

Reduce Logistics Burden
Eliminate Hazardous Material (CLO2, H2O2)

Today

DF200

mVHP, Sensitive Equipment Decon

Tomorrow

Advanced Chemistries
Nano-Fibers

Self-Directing Materials

Strippable Barriers
Self-Decontaminating Fabrics/Coatings

Integrated into Platforms
Individual CBRN Protection Vision

Integrated Fabrics

Human Performance

Air Purification

Clothing Design

Respirator Design
Modular Concepts

Integrated Design

Lower Burden

Joint Chemical Ensemble

Advanced Threat

Intelligent Materials

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ColPro Vision

PRESENT

Barrier Material / Liner
Carbon Filtration
Transportable

“Should we Take ColPro?”

FUTURE

Expeditionary
Advanced Filtration
Full MDAP Support

“Plug it In and Turn it On!”

IDEAL

Always There
Seamless

“Maintain High OP Tempo!”
Summary

• Threat is **Real** and Expanding

• Our Responses Must be Adaptive and Innovative
  – Modular
  – Integrated Designs
  – Broad-base Protection