



# ***Collective Protection***

**An Enduring Requirement  
and Challenge of the Future**



# Agenda



- Chemical Corps Vision
- Joint CBRN Construct
- ColPro Overview
  - Medical aspect
  - Tactical Requirements
- DOTMLPF Implications
- Immune Building Program
- Questions and remarks



# The Chemical Corps Vision



- ▶ An Army superbly equipped, trained and ready to fight and win **unhindered** by threatened or actual CBRN hazards.
- ▶ A Corps of professional Soldiers, **tactically and technically unsurpassed**, imbued with the warrior ethos.
- ▶ A capability, both **vital and relevant**, for the combatant commander, the joint warfight and the defense of the homeland.



# Joint CBRN Operational Construct

## ... Core Competencies



Manipulate EM Spectrum

### Shape the Operating Environment

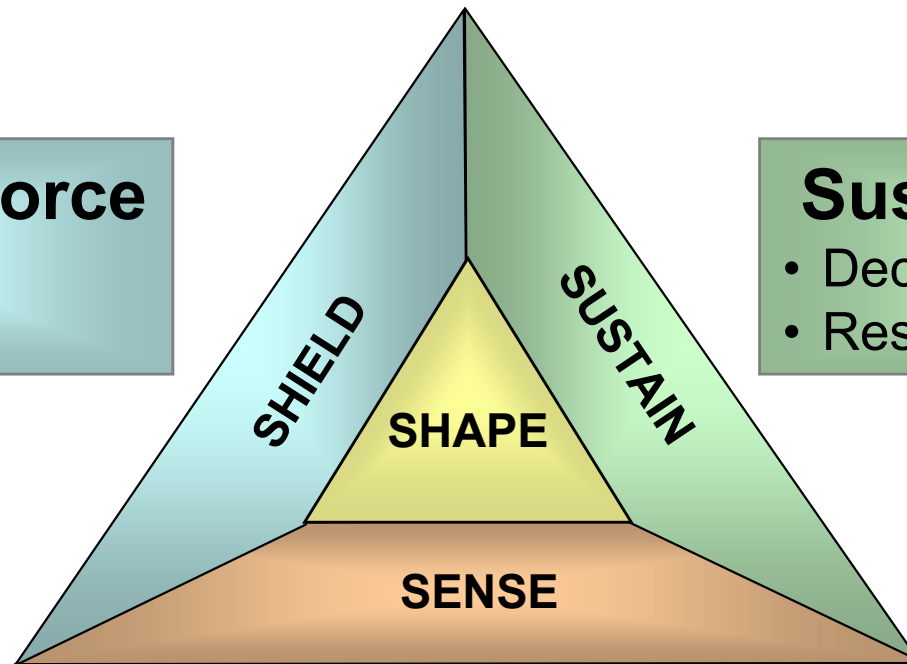
- Assess and Advise
- Predict and Warn
- Command and Control

### Shield the Force

- Protect
- Mitigate

### Sustain Operations

- Decon
- Restore



### Sense CBRN Hazards

- Detect + Identify
- Characterize + Quantify



# Collective Protection Defined



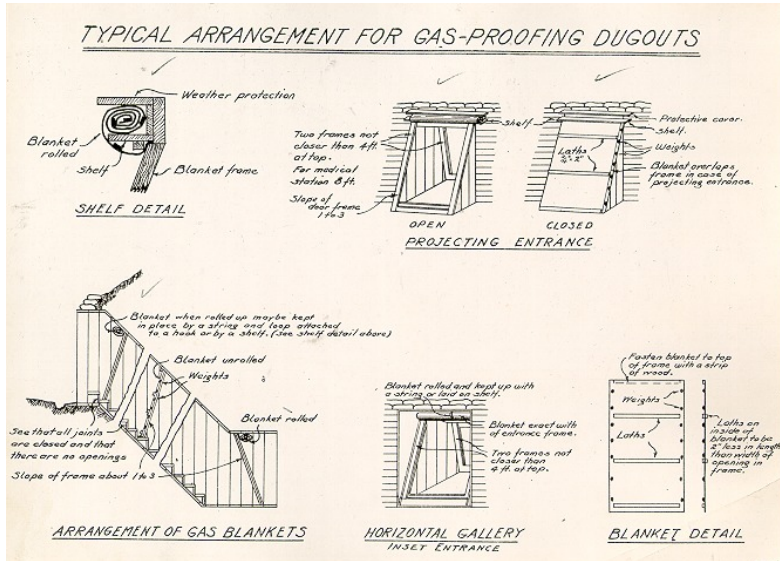
**Collective nuclear, biological, and chemical protection** — (\*) Protection provided to a group of individuals in a nuclear, biological, and chemical environment which permits relaxation of individual nuclear, biological, and chemical protection. (JP 1-02)

## Three broad categories

- Tactical
- Mobile
- Fixed Site



# Collective Protection History



WWI

## A Persistent Requirement – and Operational Challenge



Desert Storm Era



Inter-war Period



# Evolving ColPro Capabilities



Modular, "two-man portable" components for easy installation and maintenance.

Collapsible Protective Entrance (PE) provides quick entry/exit into protective area.

200 CFM Hermetically Sealed Filter Canister (HSFC) and Motor Blower provide clean air into protected area.



M28 CPE

Configured in six pre-packaged M28 CPE systems and as major system components.



Chemically Hardened Air-Transportable Hospital



Transportable Collective Protection System

New "Type II" liner components designed for Air Force applications.



Chemically Protected Expeditionary Medical Shelter



Bump-Thru Door Airlock

M28 CPE liner designs modified to interface with new tent systems, including the Air Force Small Shelter System (above) and the Marine Corps Modular General Purpose Tent System (below). Similar liner designs planned for Medium Shelter System and Modular Command Post System.



M20 SCPE

Modular, Saranex laminate liner sections are resistant to liquid chemical agents.

Vestibule liners and ISO adapters interconnect to configure large shelter complexes.

Tunnel Airlock Litter Patient (TALP) provides entry/exit for litter-borne patients.

CPE Supply Airlock provides entry/exit for palletized supplies and large equipment.

Support Kit provides convenient storage for motor blower and ancillary equipment.



Chemically Protected Deployable Medical Shelter



Portable Collective Protection System

SCPE components and materials technology adapted for joint service applications and systems.



Interim Collective Protection System

**Army Baseline**  
1985 - 1990

**Expanding Capabilities**  
1991 - 1996

**Joint Service Applications**  
1997 - 1999

**New Systems**  
2000 - Today



# Medical



**M28 SCPE**



**CBPS**



**CP-DEPMEDS**



**Notional JTCOPS Module**

**JECP**





# Tactical CBRN Requirements



## Tactical Requirements

- Crew Protection
- Tied to Sensors
- Preserve Freedom of Action
- Size, Weight and Power reasonable

# ***Fixed Site Protection***



• Applying tactical solutions, and more...

***Immune Building Program***

***Fort Leonard Wood Phase***

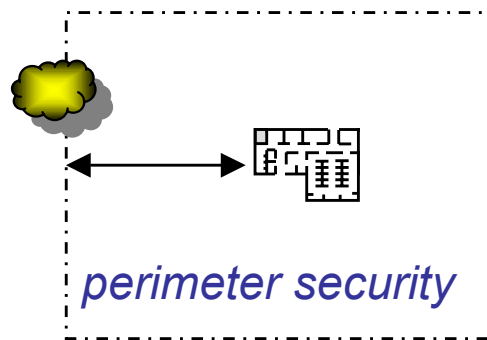


# Immune Building Program: Overview

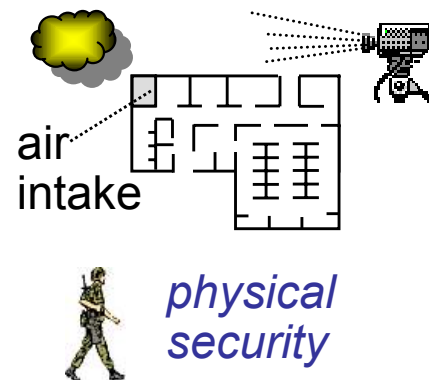


Threat: aerosolized chem/bio agents; toxic industrial chemicals (TICs)

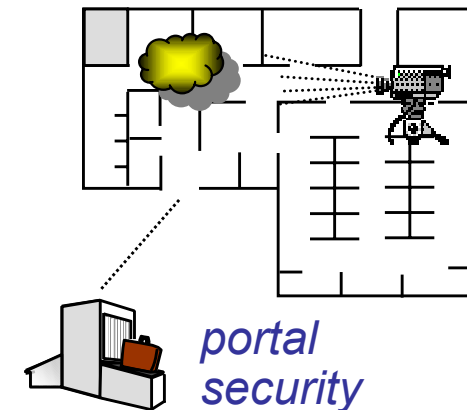
External standoff



External proximate



Internal



## Objectives:

- Protect building occupants (keep aerosolized agent from harming humans)
- Restore building to function quickly
- Preserve forensic evidence

## Payoffs:

- Save lives
- Restore OPTEMPO
- Determine appropriate treatment
- Attribute source of attack
- Make buildings less attractive targets



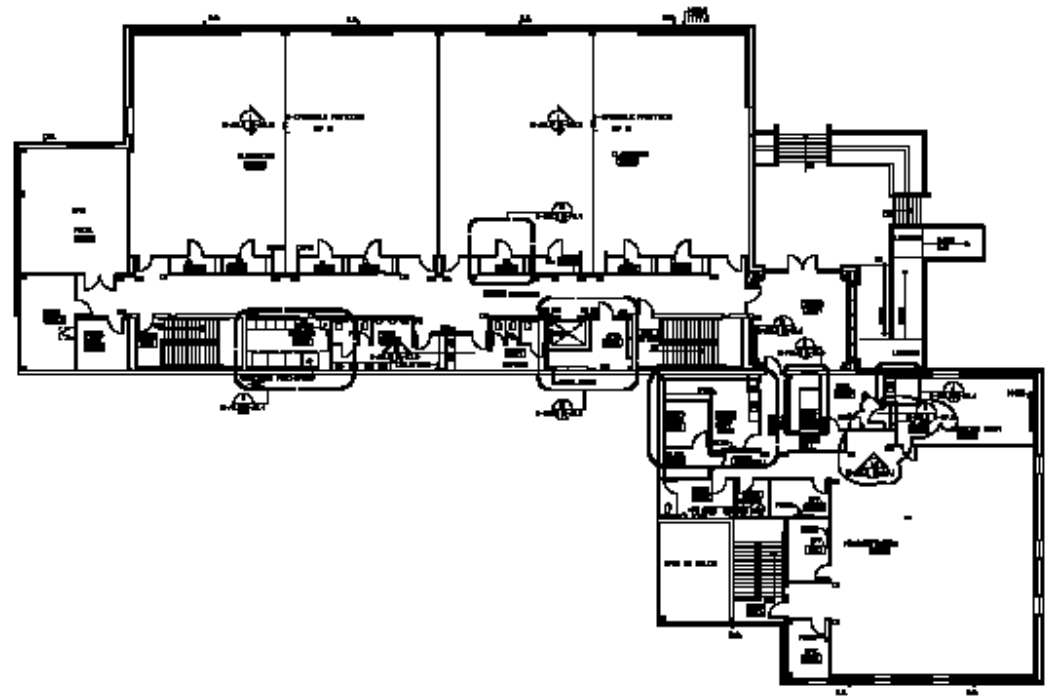
# What is in IB Demo?



Challenge the IB System in an occupied building under real-world operating conditions

- IB System sensors, neutralization, filtration, & active controls will be fully propagated in building
- Releases in arbitrary locations and will include 25 internal and 10 external releases for BOTH chem and bio threats
- Challenge against simulants for spores, encapsulated agents, filter penetrants, low vapor pressure agents, mid-vapor pressure agents, and dusty agents
- Subset of releases carried out as independently refereed validation tests

Nord Hall, Ft Leonard Wood, MO



IB System Installation is complex & risky

- Modeling will reduce risk in the design phase
- Testbed will be utilized to optimize strategies, components & CONOPS

**My Challenge – Make system transparent to User**



# Why Nord Hall?



- Ft. Leonard Wood: Home of the Army Chemical Corps
  - Enjoys strong Command support
- Nord Hall: Best fit for design criteria
  - Multi Story Building
  - Modern Construction with “Tight Building Envelope”
  - Multiple Air Handlers
  - Within 20-40,000 sq. ft. target zone
  - High use, but no Command and Control mission



# Leverage IB Lessons Learned



## Improve Fixed Site Protection

- Develop new doctrine
- Create Concepts of operations
- Develop and publish Training and Tactics, Techniques and Procedures for CBRNE evacuation

## Minimize impact of IB construction on Occupants

- “How-to” for future efforts



# DOTLMPF Implications



## Balancing Act – Develop ColPro while...

### – Support Operational Needs

- Identify what the field needs now
- Leverage into future requirements – Build into systems early

### – Execute Modularity

- Chemical Units
- Battlestaff across the force

### – Transform the Regiment

- Expanding Core Competencies of each Chemical Soldier
- Migrate high end CBRN capabilities to the General Purpose Chemical Units



# Summary



## Rules for success in ColPro Development

- Plan and design early in Acquisition Cycle
- Ensure systems “enhance” not “hinder” operations
- Pay attention to DOTLMPF
- Look for Future Innovations





***Questions?***

