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Briefer:

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Purpose

Provide the background and issues associated with Human Remains Decontamination and an overview of the Mortuary Affairs Rock Drill.





Agenda

- Problem
- Background
- Issues
- Human Remains Decontamination System
- Limited Objective Experiment
 - Phases
 - Rock Drill
- Way ahead



Problem

- DOD lacks capability to:
 - Decontaminate human remains
 - Transport contaminated remains back to CONUS
- Current policy on contaminated remains:
 - Perform Mortuary Affairs mission
 - Inter in theater



Background

- DOD Directive 1300.22 appointed the Army as the Mortuary Affairs (MA) Executive Agent.
- Responsibilities include:
 - Maintaining mortuary affairs force structure.
 - Provide back-up general support to all Services.
 - Technical support to other Services.
 - Decontamination of remains.





Combined Arms Support Command (CASCOM)

- Army Mortuary Affairs (MA) is a Logistics function, under Quartermaster (QM) Proponency.
- CASCOM: Concepts, Doctrine, Training, Materiel Development & Force Structure.
 - The QM Center & School's Mortuary Affairs Center (MAC): MA Doctrine & Training.
 - CASCOM Staff: MA Concepts, Materiel Development & Force Structure.

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Background

(cont'd)

- 2002: OIF identified need for capability to decontaminate remains.
- 2002: Army purchased two commercial-off-theshelf decon systems (not tested/interim approval).
- 2003: DEPSECDEF policy memorandum directing temporary interment if cannot decontaminate.
- May 05- present: MA capabilities development documents: in final staffing, identifying gaps & laying foundation for materiel solutions.



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Background

- Fall 2005: J8/ Joint Requirements Office (JRO)
 CBRND drafted a Capability Development
 Document (CDD) for the Human Remains Decon
 System (HRDS) Increment I.
- Arose from a gap identified in Increment II Joint Service Personnel/Skin Decon System (JSPDS) Operational Requirements Document Apr 04.
- Also included as a gap in the draft Mortuary Affairs Capabilities Based Assessment.
- Being developed under the Joint Capabilities Integration and Development System (JCIDS).



Background

(cont'd)

- Jul 06: JPEO CBD directed CASCOM to conduct a Limited Objective Experiment (LOE) in order to validate the requirements in the Draft HRDS CDD.
- The LOE is an experiment designed to support the materiel development process.
- LOE results will provide basis for changes in the CDD.

MA LOE Purpose:

- Determine if HRDS requirements in the CDD are valid.
- Refine requirements based on results of LOE.
- Develop the rationale to support the requirements.
- Determine if the Concept of Operations and TTPs are adequate to support the HRDS capability.



HRDS

The Human Remains Decontamination System (HRDS) is being developed in increments (proposed change):

- HRDS, Increment I: consists of a Contaminated Human Remains Pouch (CHRP) and a Remains Decontamination System (RDS) to provide initial capabilities for personnel from all Services, while in appropriate protective posture, to safely recover, handle and transport contaminated remains within a theater, as well as to safely perform Mortuary Affairs mission.
- HRDS, Increment ?: consists of the capability to transport all Human Remains, to include decontaminated remains and those that cannot be decontaminated, from an operational theater to a port mortuary for final disposition (inter-theater transport).
- HRDS, Increment III: consists of the capability to decontaminate Human Remains (internal/external) that may have internalized contamination and/ or infectious biological hazards.



Issues

- DOD recognizes lack of policy guidelines for movement of, "equipment, casualties, remains, aircraft, & vessels" following contamination event.
- Oct 05: ASD, Policy created Chemical, Biological, Radiological, Nuclear (CBRN) Contamination Hazards & Risks Working Group (CHRWG).
 - Sub-groups by type hazard.
 - Phased approach: 1) operational risk management; 2) standards/ guidance; 3) recommendations.

Decontamination challenges:

- Lack of research and technology regarding physiological effects of agents in the decomposition process.
- No capability for internal decontamination.
- No capability to certify required decon levels.





LOE Overview

HRDS LOE consists of four phases:

Table Top Exercise4 Oct 06

LOE (Field Experiment)24-26 Oct 06

Modeling and Simulation
 Feb-Mar 07

Rock Drill2-6 April 07

Outcome:

Final Report to JPEO CBD
 Jun/Jul 07

Update HRDS CDD
 Summer 07



LOE Objectives

- Refine requirements for HRDS Increment I CDD
 - Ensure KPPs are defendable
 - Refine Attributes
- Validate /determine rationale to support requirements
- Ensure Joint participation
- Assist with refining TTPs
 - Evaluation of the appropriate level of PPE for each station
- Refine concept for MA decontamination on battlefield
 - Linked with CBRN and Medical Concepts
 - Ensure vetted in Joint Forum

Phase I Table Top Exercise

- 4 Oct 06 at Fort Lee.
- Over 45 participants from Joint staff, Services, CBRN, Medical, and MA communities.

Outcome:

- Conducted detailed review of the Mortuary Affairs
 Decontamination Collection Point Operations (MADCP).
- Validated and/or refined some capabilities of HRDS for the CDD in preparation for JROC.
- Refined objectives, metrics of analyses and scenario of field exercise.

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Phase II Field Exercise

Overview:

- 24-26 Oct 06 at Fort Pickett, VA.
- 54th MA Company set up and operated a Mortuary Affairs Decontamination Collection Point (MADCP) using COTS RDS components.
- Army Test and Evaluation Command provided evaluation support.
- HRDS scaled down to minimize cost.
- Used current available equipment.



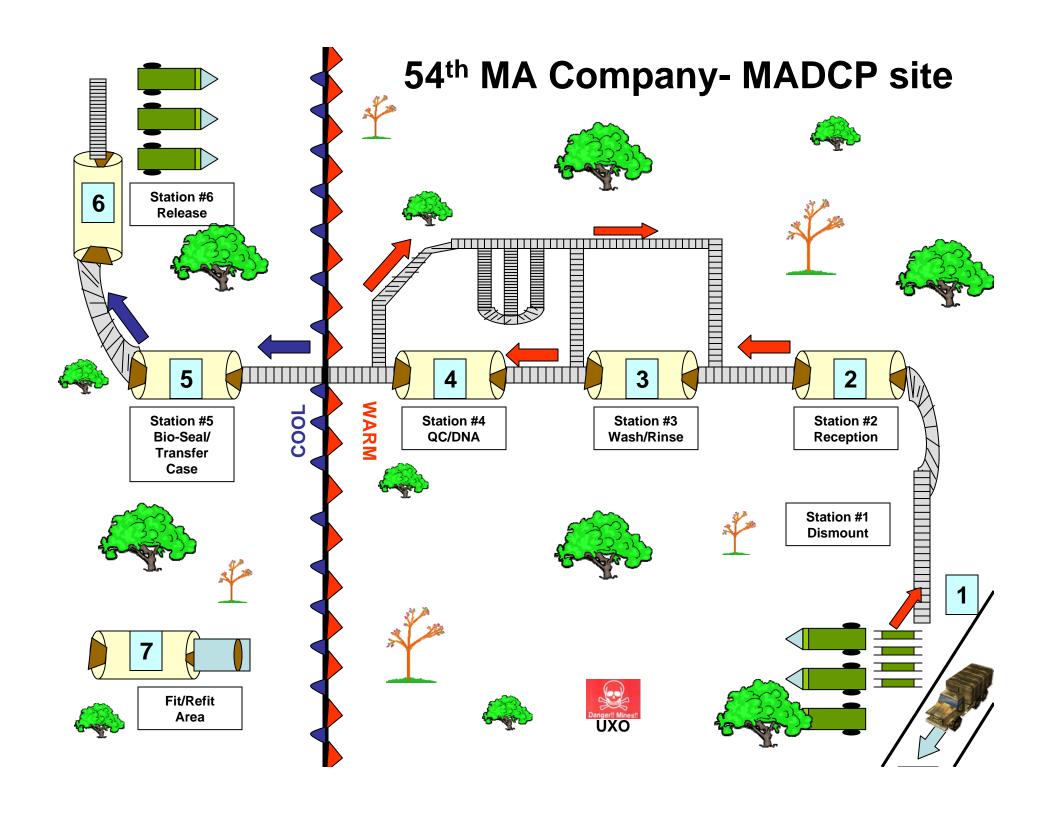
Field Exercise (cont'd)

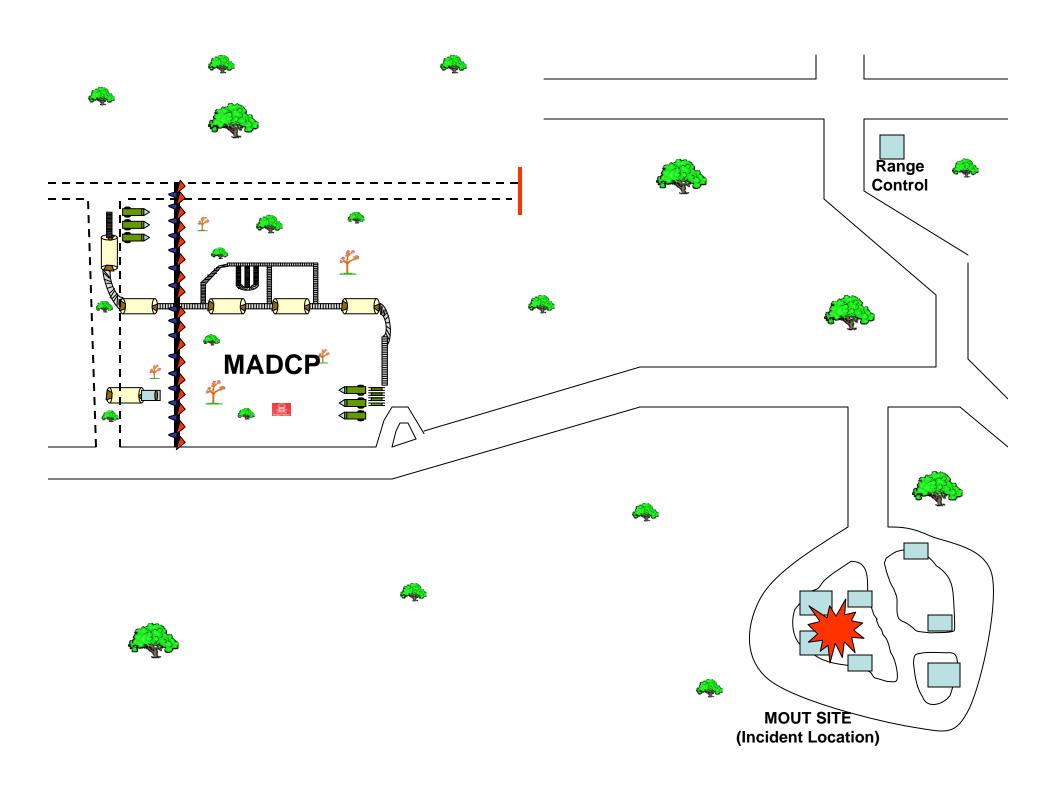
Scenario

- WMD Scenario: Persistent chemical agent in urban environment
- # Casualties: 30 "remains" on hand
- 54th MA Co also conducted search & recovery, as well as transport of remains to the MADCP

System Assessment

- Looked at effectiveness, survivability, and suitability (of the process) vs. equipment
- Not a "materiel test"; not a pass/fail
- AST report will provide observations and recommendations regarding requirements





Dismount Station



Dismount Station



Stations



Reception Station



Reception Station



Transfer Between Stations



BioSeal



Prepare for Shipment or Interment





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FOUO Phase III MADCP Model

- M&S support by CASCOM, using Arena software
- Replicates stations and processes
- Will assist in developing a baseline
- Easy to change variables:

personnel -- # remains & delivery frequency

-- # of platoons Shift schedule

Time for each task
 Contact time for decon solution

Model will run multiple excursions



MADCP Model

- Following receipt of field exercise assessment,
 Model will be adjusted to reflect more realistic data.
- Outcomes will assist in refining requirements & supporting rationale.
- Field Exercise report due Mid-Dec06; currently under final review, est. receipt date mid- Feb07.
- A summary report of Model outcomes will be included in the LOE final report.



LOE Rock Drill

- 2-6 April 2007: Larkin Hall, Fort Lee, VA
- Exercise Director: Joint Exercise & Analysis Directorate (JEAD) – Robin Byrom
- Proponent Lead: CASCOM/QMC&S COL Pate
- Sponsor: JPEO CBD, MG Reeves
- Oversight: Joint Requirements Office (JRO)
- Rock Drill will look at "end-to-end" process from incident to evacuation from Theater, to final destination
 - With CBRN, Logistics, & Medical communities
 - In a Joint environment
 - Unclassified, but based on Defense Planning Guidance



Rock Drill

- Joint Staff and significant GO Support
- Joint Staff Invitation
 - 75+ Participants: all Services, COCOMs, Joint Staff, DoD level, TRANSCOM, Combat Developers, Materiel Developers, DTRA, HLS, AFME, etc.
- Essential to pick up this issue and lay out path to move forward- no resolution of issues since 1990s!



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LOE Rock Drill

- Assist in development of Operational Mission Profile
- Rock Drill will provide forum to discuss tough issues:
 - Determine MA Decon fits into overall WMD concepts
 - Identify strategy and players to develop "standards"
 - Identify process for handling remains without capability to internally decon remains (near term)
 - Define HRDS increments
 - Develop strategy to develop interim capability now



LOE Final Report

- CASCOM will provide final report to JRO and JPEO CBD in Jun/Jul 2007
 - Results of all four phases.
 - Recommendations for changes to CDD
 - Rationale to support recommendations.



Way Ahead

- Human Remains Decontamination System (HRDS) capability document to Joint Requirements Oversight Council (JROC) in Fall 07 for approval.
- Army requesting science and technology support from Defense Threat Reduction Agency (DTRA).
- Army requesting assistance from ASD Policy regarding policy and standards.
- Army proposal to expedite interim capability currently in staffing.
- Contamination Hazards & Risks Working Group continue working remains issues.
- Follow-on Efforts needed- i.e. bio and radiological threats; interaction between DoD and HLS.



Conclusion

- Complex and technologically challenging issue.
 - Crosses functional boundaries, between Logistics, CBRN, Personnel & Medical communities.
 - Crosses boundaries between DoD and National agencies.
- The MA LOE will provide data required to support the HRDS CDD.
- DoD, Joint, Service, and various agencies support and assistance is <u>critical</u> to this effort.
- Army is committed to addressing problems, near and long term.

Back-up



HRDS (old)

The Human Remains Decontamination System (HRDS) is being developed in two increments:

- HRDS, Increment I: consists of a Contaminated Human Remains Pouch (CHRP) and a Remains Decontamination System (RDS) to provide the initial capabilities for all Services to safely recover, handle and transport contaminated remains prior to decontamination at the MA Decontamination Collection Point (MADCP) and to provide external decontamination of remains at the MADCP (intra-theater transport).
- HRDS, Increment II: consists of capability to fully decontaminate Human Remains (internal/external) that may have internalized infectious biological hazards, and capabilities to safely handle and transport all decontaminated Human Remains from an operational theater to a port mortuary for final disposition (intertheater transport).



TTPs

Clarify TTPs

- Distance from incident site (is there a recommended minimum)
- Validate tasks at each station
- # and MOSs of personnel
- # showers; management of personnel into and out of stations
- Length of shifts/ rest periods
- Type of SCBAs/oxygen systems (same as NBC personnel, ability to refill, etc.)
- Are Level A suits required for stations 1&2?
- Location and number of refrigerated holding areas
- Validate configuration of processing line (and spurs)
- Do conveyors start at Dismount station or Reception Station
- Need to identify operating time frames/ shifts/ etc. breaking point when another shift is needed (i.e. when over 85 degrees, over 25 casualties, etc.)
- Can we decon the tents? Or do we assume tents are throw-away?
- DOTMLPF- Materiel is last resort; may need to be significant changes/ solutions on how to address



HRDS I KPPs

Key Performance Parameters (KPPs):

KPP 1: Contaminated Human Remains Pouch (CHRP) Leak Prevention

KPP 2: CHRP Decon Survivability

KPP 3: Remains Decon System (RDS) Throughput

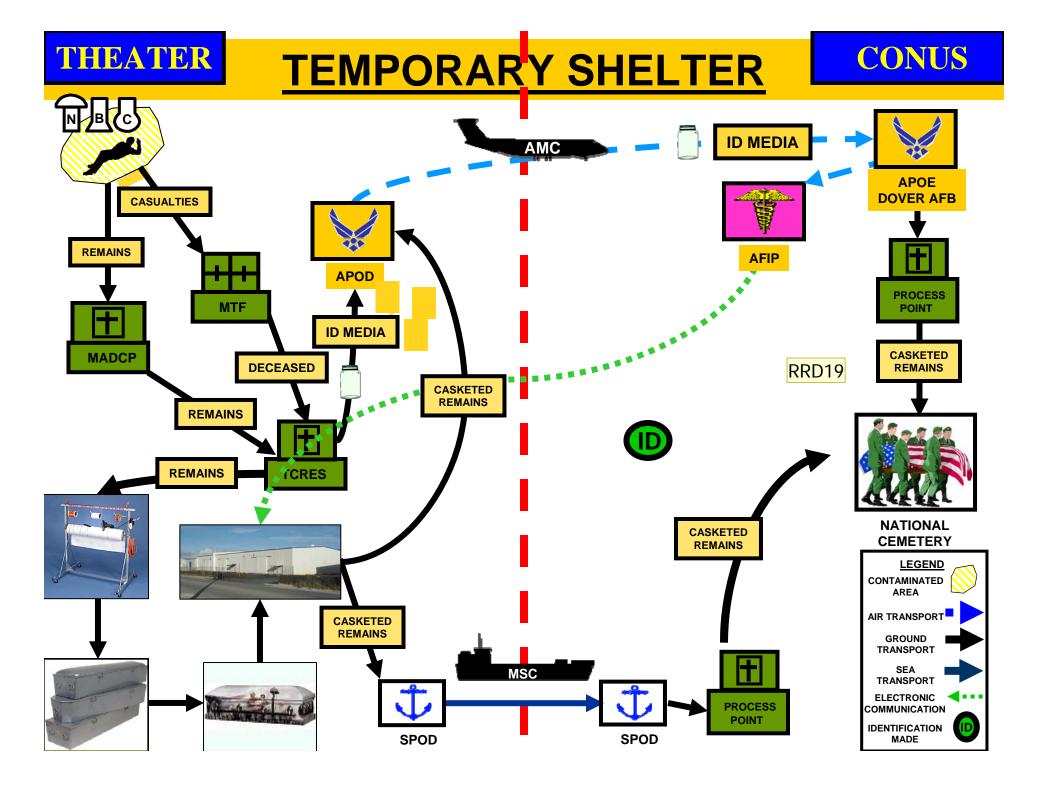
KPP 4: RDS Survivability

For each, will develop Metrics and Rationale



HRDS CDD

HRDS ATTRIBUTES	
1. RDS Set-up Time	8. RDS Wind Resistance
2. RDS Decon and Pack-up Time	9. RDS Lighting
3. RDS MHE Compatibility	10. RDS Self-supporting Structure
4. RDS Transportability	11. RDS Tactical Fuel Compatibility
5. RDS Decontaminant Compatibility	12. RDS Environmental Impact
6. RDS Climate Control	13. Internal Biological Decon of Remains (HRDS II)
7. RDS Water Storage/ Wastewater Collection	14. Transportation of Potentially Infectious Remains (HRDS II)

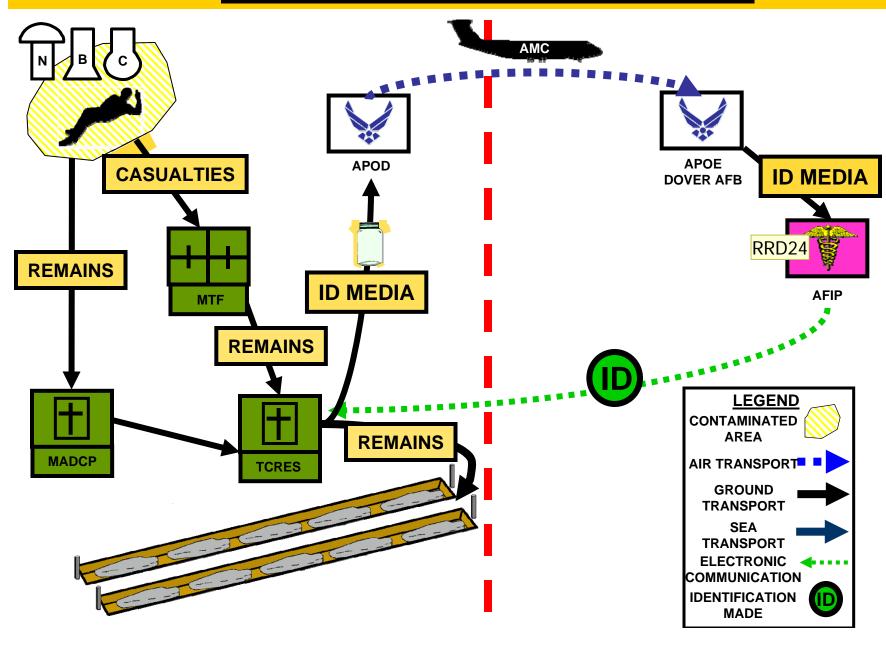


RRD19

THERE IS NO IOGICAL REASON TO CONDUCT TEMPORARY INTERMENT IN THE GROUND UNLESS THE INTENT IS TO LEAVE THEM THERE UNTIL THEY HAVE COMPLETELY DECOMPOSED; 1) WHICH IS NOT THE INTENT OF TEMPORARY INTERMENT IAW JP 4-06 2) IS POLITICALLY AND PUBLICALLY UNACCEPTABLE 3) MAY CONTAMINATE THE ENVIRONMENT (SURROUNDING SOIL) FOR UP TO 40 YEARS 4) DISINTERMENT IS HAZARDOUS UNLESS THE REMAINS HAVE TOTALLY DECOMPOSED, AND EVEN THEN, THE CLOTHS AND OTHER ITEMS MAY STILL POSE A THREAT. IN ADDITON WE HAVE NO WAY OF KNOWING HOW LONG THAT WILL TAKE (PER THE AFRME, THERE IS NO SAFE END POINT FOR DISINTERMENT) 5) WE ARE NOW TALKING ABOUT A LONG TERM SECURITY ISSUE. BOTTOM LINE IS THIS IS NOT A GOOD OPTION. THE TMAO IS CONSIDERING AN ALTERNATIVE PLAN, HOWEVER, USING BIOSEAL AND ZIEGLER CASES TO "TEMPORARILY INTER" REMAINS WHILE WE AWAIT POSITIVE ID OF REMAINS. WE WILL OF COURSE HAVE TO PUT THE ZEIGLER CASES IN A WAREHOUSE, UNDER SUNSHADES, IN TENTS, OR OTHER ALTERNATIVE TO KEEP THEM OUT OF THE SUN, HOWEVER, THIS ALTERNATIVE: 1) WILL ENABLE DISINTERMENT OPERATIONS TO BE CONDUCTED QUICKER SINCE WE WON'T HAVE TO DIG THE REMAINS UP; BUT RATHER, JUST REMOVE THE CASES FROM THE WAREHOUSE, SEAL THEM WITH SILICONE SEALANT, PLACE THE CASE IN THE CASKET AND EVACUATE THE REMAINS FROM THE AOR. 2) REQUIRES LESS LOGISTICS SUPPORT SINCE WE DON'T REQUIRE ENGINEER SUPPORT TO PREPARE THE INTERMENT SITE OR PERSONNEL TO HAND DIG UP THE REMAINS DURING DISINTERMENT OPERATIONS TO PREVENT FROM PUNCTURING THE BIOSEAL BAG 3) IS SAFER SINCE WE WON'T HAVE TO DIG UP THE REMAINS WHICH ELIMINATES THE POSSIBILITY OF ACCIDENTLY PUNCTURING THE BIOSEAL BAG, POTENTIALLY RELEASING THE CONTAMINATE.

Colonel Richard R. Dillon, 11/14/2002

TEMPORARY INTERMENT



RRD24

THERE IS NO IOGICAL REASON TO CONDUCT TEMPORARY INTERMENT IN THE GROUND UNLESS THE INTENT IS TO LEAVE THEM THERE UNTIL THEY HAVE COMPLETELY DECOMPOSED; 1) WHICH IS NOT THE INTENT OF TEMPORARY INTERMENT IAW JP 4-06 2) IS POLITICALLY AND PUBLICALLY UNACCEPTABLE 3) MAY CONTAMINATE THE ENVIRONMENT (SURROUNDING SOIL) FOR UP TO 40 YEARS 4) DISINTERMENT IS HAZARDOUS UNLESS THE REMAINS HAVE TOTALLY DECOMPOSED, AND EVEN THEN, THE CLOTHS AND OTHER ITEMS MAY STILL POSE A THREAT. IN ADDITON WE HAVE NO WAY OF KNOWING HOW LONG THAT WILL TAKE (PER THE AFRME, THERE IS NO SAFE END POINT FOR DISINTERMENT) 5) WE ARE NOW TALKING ABOUT A LONG TERM SECURITY ISSUE. BOTTOM LINE IS THIS IS NOT A GOOD OPTION. THE TMAO IS CONSIDERING AN ALTERNATIVE PLAN, HOWEVER, USING BIOSEAL AND ZIEGLER CASES TO "TEMPORARILY INTER" REMAINS WHILE WE AWAIT POSITIVE ID OF REMAINS. WE WILL OF COURSE HAVE TO PUT THE ZEIGLER CASES IN A WAREHOUSE, UNDER SUNSHADES, IN TENTS, OR OTHER ALTERNATIVE TO KEEP THEM OUT OF THE SUN, HOWEVER, THIS ALTERNATIVE: 1) WILL ENABLE DISINTERMENT OPERATIONS TO BE CONDUCTED QUICKER SINCE WE WON'T HAVE TO DIG THE REMAINS UP; BUT RATHER, JUST REMOVE THE CASES FROM THE WAREHOUSE, SEAL THEM WITH SILICONE SEALANT, PLACE THE CASE IN THE CASKET AND EVACUATE THE REMAINS FROM THE AOR. 2) REQUIRES LESS LOGISTICS SUPPORT SINCE WE DON'T REQUIRE ENGINEER SUPPORT TO PREPARE THE INTERMENT SITE OR PERSONNEL TO HAND DIG UP THE REMAINS DURING DISINTERMENT OPERATIONS TO PREVENT FROM PUNCTURING THE BIOSEAL BAG 3) IS SAFER SINCE WE WON'T HAVE TO DIG UP THE REMAINS WHICH ELIMINATES THE POSSIBILITY OF ACCIDENTLY PUNCTURING THE BIOSEAL BAG, POTENTIALLY RELEASING THE CONTAMINATE.

Colonel Richard R. Dillon, 11/14/2002

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FOUO Transportation of **Contaminated Remains**

- No suitable commercial or military container exists to transport contaminated remains.
- Policy to transport, store, or to enter CONUS not defined.
 - 2003: TRANSCOM directed evaluation of Triple Containment Method for Air Transport of Contaminated Human Remains (Army funded/executed by Air Force Research Laboratory).
 - Approach failed testing; no follow-on research conducted/planned.
- Development on-going.
 - Science & technology investment required.
 - Policy to identify standards required.



LOE Hypothesis

Given current doctrine and TTPs, if there is a chemical agent attack in a theater of operations, personnel, in appropriate protective posture, operating the HRDS can:

- Provide initial capabilities for all Services to safely recover, handle and transport contaminated remains within a theater.
- Reduce the level of contamination on remains to an acceptable level of risk in order to perform MA processes
 - To facilitate the positive identification process
 - Preserve and/or document forensic evidence
 - Document items accompanying the remains
 - Preserve durable personal effects
 - Prepare remains for temporary interment