

AIR COMBAT COMMAND

CONCEPT OF OPERATIONS

FOR THE

WARTIME MEDICAL

DECONTAMINATION TEAM (WMDT)

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EXECUTIVE SUMMARY

1. GENERAL: This document outlines the Air Combat Command (ACC) Concept of Operations (CONOPS) for the Wartime Medical Decontamination Team (WMDT), UTC FFGLB. The CONOPS describes the peacetime and wartime mission, organization, and span of control of the WMDT. It shows how WMDT will transition from a peacetime to wartime posture. The goal of this document is to establish the framework upon which to base more detailed planning, organizational, and policy documents.

2. DESCRIPTION: The primary mission of the WMDT is to provide capability to remove or neutralize Nuclear, Biological and/or Chemical (NBC) agents on wartime casualties immediately prior to being admitted to the Medical Treatment Facility (MTF). Standardized WMDTs and equipment assemblages can be deployed, assigned, or pre-positioned to support and enable USAF MTFs to safely and effectively treat contaminated casualties without contaminating medical personnel, equipment, or facilities. WMDTs have a secondary mission to provide technical guidance on food decontamination.

3. OPERATIONS: Two WMDT personnel packages (UTC FFGLB) and one WMDT equipment package (UTC FFGLA) are deployed in direct support of MTFs operating in NBC-threat environments. Decontamination sites/facilities are constructed in the vicinity of the MTF. The WMDT is activated when the enemy has introduced NBC weapons. Personnel decontamination is accomplished by clothing removal and skin washing using soap, hypochlorite, or Diatomaceous earth. The WMDT conducts contamination control of medical personnel and assets as needed, evaluates potentially contaminated food supplies, and provides technical assistance and recommendations to Responsible Property Officers on the disposition and/or decontamination of food.

4. COMMAND AND CONTROL RELATIONSHIPS/STRUCTURE: WMDTs are assigned to the supported MTF. The MTF Commander, through the Public Health Officer, is responsible for medical WMDTs and DECON operations.

5. INTELLIGENCE SUPPORT: WMDT will need intelligence support to provide information on NBC threats, delivery systems, and probability of attack.

6. COMMUNICATIONS SYSTEMS SUPPORT: A landline (telephone) or radio must be supplied to facilitate constant communication between the DECON site and the MTF during DECON operations. The WMDT Chief maintains constant landline or radio communication with the MTF during contamination control activities to advise of patient rates, injury types, NBC agents identified, resupply needs, and additional manpower needs.

7. INTEGRATION & INTEROPERABILITY: Integration with other systems. The WMDT integrates with the ATH or other deployed medical unit. Personnel from the WMDT may be utilized to perform their primary AFSC functions when not tasked to perform decontamination or training. All equipment and tentage are compatible with the ATH or other deployable medical units.

8. SECURITY: The decontamination facility must be encompassed by the MTF security perimeter. Approaches to the 250-ft perimeter must be controlled to prevent theft of equipment/supplies and accidental NBC agent inhalation or contamination.

9. TRAINING: All MTFs will comply with the contingency training requirements of ACCR 400-10, Medical Mobility Support and MAJCOM supplements for decontamination team training. Decontamination training will be conducted using the actual War Reserve Material (WRM). If this is not possible (a unit doesn't have a FFGLA package), then WMDTs will select and use equipment from the list of training equipment in Appendix A1 of Annex A. Basic principles in medical decontamination are included in the initial technical training for Public Health Officers and enlisted (AFSCs 043H3 and 4E0X1) conducted at the USAF School of Aerospace Medicine. The Contingency Public Health Operations Course/ B30ZYCONOP 000 provides more in-depth training in wartime medical decontamination and is offered to a variety of AFSCs.

10. LOGISTICS: The WMDT will require Local Base Support when deployed to include, water, electricity, exterior lighting. Personnel will require billeting and subsistence support.

**CONCEPT OF OPERATIONS
FOR THE
WARTIME MEDICAL DECONTAMINATION TEAM (WMTD)**

SECTION I - GENERAL

1.0. PURPOSE:

Provides capability to remove or neutralize Nuclear, Biological and/or Chemical (NBC) agents on wartime casualties immediately prior to being admitted to the Medical Treatment Facility. Evaluates potentially contaminated food supplies. Provides technical assistance and recommendations to Responsible Property Officers on the disposition and/or decontamination of contaminated food and offers direct technical guidance to food decontamination teams.

1.1. BACKGROUND:

1.1.1. HQ AFMOA/SGOP serves as the Air Force OPR for the establishment of doctrine, procedures, resources, and training requirements for medical decontamination.

1.1.2. HQ ACC/SG serves as the Manpower and Equipment Force Packaging System (MEFPAK) manager for UTC FFGLB, Wartime Medical Decontamination Team, henceforth, referred to as the WMDT in this document., and UTC FFGLA, Patient Decontamination Equipment.

1.1.3. Deployed MTF Commanders:

1.1.3.1. Ensure operational contingency plans include appropriate provisions to conduct and support medical decontamination when appropriate.

1.1.3.2. Determine when the decontamination team and facility will be activated and deactivated based on threat conditions.

1.1.3.3. Determine pre-decontamination triage priorities and to what extent definitive medical treatment will be administered to contaminated casualties prior to decontamination.

1.1.3.4. Report suspected or confirmed NBC contamination to higher headquarters.

1.1.3.5. Provide a Biomedical Equipment Repair technician (4A2X1) to assist the WMDT when operations include decontaminating medical equipment/facilities.

1.1.3.6. Coordinate medical vehicle decontamination with the base Transportation Officer.

1.1.4. The term “decontamination” as used in this CONOPS means the removal or neutralization of radioactive particles, biological warfare agents, and chemical warfare agents to levels low enough that casualties may be treated without contaminating medical facilities and without posing any immediate

health risks to unprotected medical personnel. With regard to radioactive particles (fallout), “decontamination” does not imply absolute removal of contaminants. Definitive decontamination of casualties exposed to radioactive particles (fallout) may be required in the course of treatment. Such definitive levels of radiation monitoring and wound/internal decontamination are appropriate for third and fourth echelon MTFs and are beyond the scope of this CONOPs.

1.2. THREAT:

1.2.1. The National Air Intelligence Center-developed “Threat Compendium, Worldwide Threat to Air Bases: 1995-2005,” NAIC-2660F-265-95, 1 Sep 94, is the baseline threat reference for air base operability. Because of the wide variety of possible operating locations and potential adversaries, a broad range of air and ground threats can be expected. These include a mix of iron bombs, precision guided munitions, anti-personnel/vehicle mines, chemical and biological weapons, nuclear radiation/fallout, saboteurs, special operations forces, and general purpose offensive ground forces.

SECTION II - DESCRIPTION

2.0. MISSION/TASKS:

The need for DECON capabilities must be included in the deliberate planning process for deployable and forward-based MTFs when OPLANs envision the receipt of contaminated casualties. UTCs FFGLA (DECON equipment) and FFGLB (WMDT) must be represented in Time Phased Force Deployment Documents (TPFDDs) for these OPLANs. The MTFs may include ATHs, ASFs, and other deployed medical units.

2.1. DESCRIPTION/CAPABILITIES:

2.1.1. Description:

2.1.1.1. Manpower: Unit Type Code FFGLB, Wartime Medical Decontamination Team is composed of 19 enlisted medical members lead by a Public Health Craftsman (AFSC 4E071). Two teams should be provided for each MTF/ATH where an NBC threat exists. Levels for maximum substitution in Annex F of WMP-1 may be exceeded. All positions may be substituted by any AFSC 4XXXXX except one 4E071 and two 4N071’s. All 4N0X1 positions, to include substitutes, require national EMT certification. The Team Chief must ensure personnel appointed to this UTC are of sufficient stature and physical condition to perform frequent litter carries and strenuous manual labor in full NBC protective ensemble. The 4E0X1s provide core knowledge of decontamination process. The EMT certified members are trained in and responsible for triage prior to decontamination; basic life support and wound management during decontamination; and nerve agent antidote administration. All other team members are trained augmentees.

MANPOWER DETAIL:

| POSITION | AFSC | QUANTITY |
|---------------------------|-------|----------|
| HEALTH SVC MGT JNMN | 4A051 | 4 |
| MEDICAL LOGISTICS JNMN | 4A151 | 1 |
| BIOMEDICAL EQUIP JNMN | 4A251 | 1 |
| PUBLIC HEALTH CFMN | 4E071 | 1 |
| PUBLIC HEALTH JNMN | 4E051 | 3 |
| AEROSPACE PHYSIOLOGY CFMN | 4M071 | 1 |
| MEDICAL SERVICE CFMN | 4N071 | 2 |
| MEDICAL SERVICE JNMN | 4N051 | 2 |
| DENTAL ASST JNMN | 4Y051 | 4 |

2.1.1.2. Equipment and Supplies: Unit Type Code FFGLA, Patient Decontamination Equipment contains all items listed in TA 902, column A. Quantities are sufficient for the decontamination of 500 casualties. The quantity of chemical warfare defense ensembles and mask filter sets are sufficient to provide four of each for every WMDT member. All items required for the construction of a 6-section TEMPER tent decontamination facility and Donning/Doffing tent are also included. Two 1300-gallon water bladders, electric water pump, two environmental control units, shelving, and interior lighting are also included. The Chemical Agent Monitors (CAMS) included in the equipment package require special handling, additional training, and radioisotope committee permits because the unit contains a radioactive source. Additional responsibilities for storage, maintenance and training are listed below:

2.1.1.2.1. The Base Radiation Safety Officer (RSO) will:

2.1.1.2.1.2. Maintain radioactive material (RAM) permit while WRM CAMS unit(s) are on your installation.

2.1.1.2.1.3. Conduct a semiannual inventory of all RAM permitted items.

2.1.1.2.1.4. Conduct swipe samples prior to shipping WRM CAMS unit(s).

2.1.1.2.1.5. If WMDT (UTC FFGLB) is deploying with UTC FFGLA, designate in writing a qualified user (normally the Team Chief) to maintain WRM CAM unit(s).

2.1.1.2.2. The Medical Logistics Officer will:

2.1.1.2.2.1. Inform Base Radiation Safety Officer (RSO) and WMDT Team Chief upon receipt of CAMS.

2.1.1.2.2.2. Inform RSO and Team Chief before Patient Decon Equipment Package (UTC FFGLA) is deployed or relocated.

2.1.1.2.3. The WMDT Team Chief will:

2.1.1.2.3.1. Develop joint CAMS training with Civil Engineering's Readiness Flight (CEOX) using CEOX's CAMS.

2.1.1.2.3. 2. Ensure appropriate WMDT members attend the USAFSAM Contingency Public Health Operations Course, B3OZYCONOP-000.

2.1.1.3. Decontamination Site: Optimal requirements for a decontamination facility site include co-location with the supported MTF (not closer than 250 ft downwind or crosswind, and situated so arriving vehicles/casualties can reach it without approaching the MTF), access to water (free of NBC contaminants but not necessarily potable), hook-up to electricity/electric generator for water pump operation and lighting, a 250 ft controlled perimeter, and ground/floor gradient sufficient to facilitate drainage of contaminated water away from the DECON facility and MTF. Protection of equipment from temperature extremes, rain, and pilferage is required.

2.1.1.4. OPR: Patient decontamination is a wartime function of Public Health. The assigned/attached Director, Public Health ensures the WMDT is trained and equipped to fulfill mission requirements and appoints a WMDT Chief, requires a member holding a duty AFSC of 4E071, who is a mobility-tasked member of UTC FFGLB. The WMDT Chief trains WMDT members and directly supervises medical decontamination operations.

2.1.2. Capabilities:

2.1.2.1. UTC FFGLB (WMDT) may:

2.1.2.1.1. Be deployed with the decontamination equipment assemblage to support a deployed or forward-based MTF.

2.1.2.1.2. May be deployed independently of the equipment assemblage to robust or replace an in-place decontamination team or to link-up with a prepositioned equipment assemblage or forward-based decontamination facility.

2.1.2.1.3. May be permanently assigned members of a forward-based MTF tasked to operate at that MTF.

NOTE: The 19 member WMDT is designed to operate one 12 hour shift; if 24 hour operations are required, then a second UTC FFGLB 19 member WMDT should be deployed to man the second 12 hour shift.

2.1.2.2. UTC FFGLB (WMDT) tasking of bases by MAJCOM Medical Planners should take into account other mobility taskings of Public Health personnel (AFSC's 043H3 and 4E0X1). Planners are reminded that the average size of a base-level Public Health Office is only 7-8 people. UTC FFGLB requires four 4E0X1's. Therefore, a base tasked for a WMDT and PM Team (1-043H3, 1- 4E071, 1- 4E051)) would have nearly 100% mobility tasking. Obviously, further taskings involving Public Health personnel would not be desirable in such cases.

2.1.2.3. Whenever possible, one of the deployed WMDTs (both personnel and equipment packages) should be attached to deployed MTFs from the same home base. Previous training and ownership of equipment will enhance effectiveness and coordination between the deployed MTF and the WMDT.

2.1.2.4. UTC FFGLA (DECON equipment) tasking should be sufficient to support the total number of MTFs required under each OPLAN. FFGLA tasking should be targeted toward bases that are also tasked for UTC FFGLB (WMDT).

2.1.2.5. Forward-based MTFs which have no FFGLA or FFGLB tasking but which do have other medical decontamination requirements in their contingency plans will select equipment and supplies from TA 902. Note that this TA is divided into two columns. Only the items listed under column A are intended for use by WMDTs. Not all of the items listed will be required for every MTF with decontamination tasking. For example, TEMPER tents would not be needed by those MTFs that plan to conduct decontamination inside a predetermined building. MAJCOMs should define these acceptable deviations.

2.1.2.6 One 19 member WMDT can simultaneously process between 4-5 litter and 6-7 ambulatory patients in an hour, depending on the level and type of contaminant. This rate will decrease as heat stress and fatigue increase.

SECTION III - OPERATIONS

3.0. EMPLOYMENT:

3.0.1. The WMDT is activated when NBC weapons have been introduced by the enemy. All arriving casualties (vehicular and pedestrian) are then directed to stop at the MTF entry control point where a WMDT member ascertains if contamination is present. Contaminated casualties are directed to the DECON facility. Non-contaminated casualties are directed around the DECON facility to the MTF.

3.0.2. The WMDT and Retrieval Team unload contaminated casualties at the entrance of the DECON facility. Casualties are triaged, administered nerve agent antidote (when appropriate), then decontaminated. Litter and ambulatory patients can be processed simultaneously. Wound and airway management are performed simultaneously with clothing removal and decontamination.

3.0.3. Decontamination is accomplished by clothing removal and skin washing using soap, hypochlorite, or diatomaceous earth. WMDT members are dressed in Mission Oriented Protective Posture (MOPP) 4 when performing decontamination operations. They also wear rubber aprons.

3.0.4. Decontaminated casualties are moved by WMDT members from the DECON facility to the patient exchange point. In a non-chemically hardened ATH setup the patient will be transported across the 250 foot vapor hazard buffer. In a Chemically Hardened ATH (CHATH) the DECON team will place the patient in the airlock between the DECON facility and the CHATH. Masks are then removed from patients and triage is (again) performed by a Post-DECON Triage Team. The normal process of decontamination may drastically change the triage priority of the patients.

3.0.5. The WMDT conducts contamination control of medical personnel and assets as needed. Contaminated materials and run off are carried/directed to a controlled location by WMDT members. Coordinate with Bioenvironmental Engineering and Civil Engineering to arrange for final disposal of contaminated waste.

3.0.6. The WMDT evaluates potentially contaminated food supplies. The WMDT Chief provides technical assistance and recommendations to Responsible Property Officers on the disposition and/or decontamination of contaminated food and offers technical guidance to his/her food decontamination teams.

3.0.6.1. Detailed step-by-step procedures for the decontamination of food are outlined in Annex C.

3.0.7. Comprehensive step-by-step patient/personnel decontamination procedures are outlined in Annex A.

3.0.8. Chemically Hardened Air Transportable Hospital (CHATH) DECON Team procedures are outlined in Annex B (**NOTE:** Non-CHATH MTFs should use Annex A for DECON operations, CHATH MTFs should use Annex B - NOT both Annexes).

3.1. DEPLOYMENT/REDEPLOYMENT:

3.1.1. WMDTs are deployed in direct support of MTFs operating in NBC threat environments. These teams are assigned to the supported MTF. Decontamination sites/facilities are constructed in the vicinity of the MTF.

3.1.2. The WMDT (equipment/personnel package) UTCs will be identified in the Designed Operation Capability (DOC) statements.

3.1.3. Occupies 3 pallet positions, 2 Ship & Storage Containers (*Brooks & Perkins Containers*) and 1 aircraft cargo pallet, or 3 aircraft pallets can be used until adequate Ship and Storage Containers are available. Approximate weight 5,589 Lbs., approximate cube 806.5144.

SECTION IV - COMMAND & CONTROL STRUCTURE AND RELATIONSHIPS

4.0. WMDTs are assigned to the supported MTF. The MTF Commander, through the Public Health Officer, is responsible for medical WMDTs and DECON operations.

SECTION V - INTELLIGENCE SUPPORT

5.0. WMDT will need intelligence support to provide information on NBC threats, delivery systems, and probability of attack.

SECTION VI - COMMUNICATIONS/INFORMATION SYSTEM SUPPORT

6.0. A landline (telephone) or radio must be supplied to facilitate constant communication between the DECON site and the MTF during DECON operations. The WMDT Chief maintains constant landline or radio communication with the MTF during contamination control activities to advise of patient rates, injury types, NBC agents identified, resupply needs, and additional manpower needs.

SECTION VII - INTEGRATION & INTEROPERABILITY

7.0. Integration with other systems: The WMDT integrates with the ATH or other deployed medical unit. Personnel from the WMDT may be utilized to perform their primary AFSC functions when not tasked to perform decontamination or WMDT training.

7.1. Interoperability: All equipment and tentage are compatible with the ATH or other deployable medical units.

SECTION VIII - SECURITY

8.0. The DECON facility must be encompassed by the MTF security perimeter. Approaches to the 250-ft perimeter must be controlled to prevent theft of equipment/supplies and accidental NBC agent inhalation or contamination.

SECTION IX - TRAINING

9.0. All MTFs will comply with the contingency training requirements of ACCR 400-10, Medical Mobility Support and MAJCOM supplements for decontamination team training.

9.1. Decontamination training will be conducted using the actual War Reserve Material (WRM). If this is not possible (a unit doesn't have a FFGLA package), then WMDTs will select and use equipment from the list of training equipment in Appendix A1 of Annex A.

9.2. MTF contingency training and exercises will include WMDT integration with the retrieval, triage, security, and command teams. In Air Combat Command, exercises and evaluations will be conducted IAW the ACC Medical Evaluation of Readiness in Individual Training Contingency Plan (MERIT CONPLAN).

9.3. MTFs with UTC FFGLA, Deployable Patient Decontamination Equipment, will conduct an annual inventory and familiarization training session in cooperation with medical logistics personnel. This process will include tent erection, equipment operation/serviceability checks, and replacement of expired supply items.

9.4. Basic principles in medical decontamination are included in the initial technical training for Public Health Officers and enlisted (AFSCs 043H3 and 4E0X1) is included in courses conducted at the USAF School of Aerospace Medicine. The Contingency Public Health Operations/ B30ZYCONOP

000 course provides more in-depth training in wartime medical decontamination and is offered to a variety of AFSCs.

SECTION X - LOGISTICS

10.0. Water must be transported to the 1300-gallon decontamination facility water storage bladders. This quantity is sufficient for the decontamination of 500 casualties.

10.1. The ground beneath the decontamination facility/site must be graded to prevent the accumulation of standing water. A trench or pipe leading to a soakage pit must be installed to capture wastewater runoff.

10.2. The equipment assemblage contains no exterior lighting. To facilitate night operations, the host MTF must provide exterior lighting for the DECON facility entrance and exit and the path between the DECON facility entrance and the MTF.

10.3. Electrical power sufficient for a water pump, two Environmental Control Units (ECUs) and interior /exterior DECON facility lighting must be provided by the supporting MTF.

10.4. Vehicular traffic must be capable of reaching the DECON site entrance without approaching the MTF. Road or fence-line modifications may be required to accommodate this requirement. Ensure modifications are coordinated in advance with CE, SF and other appropriate agencies.

10.5. Billeting/messing for two 19 member teams of UTC FFGLB are required. To aid in team continuity and morale it is recommended that the WMDT members be billeted together.

10.6. Movement of the DECON equipment pallets to the DECON site will require forklift support.

APPENDIX 1 GLOSSARY OF TERMS

A

| | |
|------|----------------------------|
| ACC | Air Combat Command |
| AFSC | Air Force Specialty Code |
| ATH | Air Transportable Hospital |

B

| | |
|-----|--------------------------|
| BDO | Battle Dress Overgarment |
| BDU | Battle Dress Uniform |
| BW | Biological Warfare |

C

| | |
|---------|--|
| CaCl | Calcium Hypochlorite |
| CAM | Chemical Agent Monitor |
| CE | Civil Engineering |
| CFMN | Craftsman |
| CHATH | Chemically Hardened Air Transportable Hospital |
| CONOPS | Concept of Operations |
| CONPLAN | Contingency Plan |
| CW | Chemical Warfare |

D

| | |
|------------|--------------------------------------|
| DECON Team | Wartime Medical Decontamination Team |
| DOC | Designed Operation Capability |

E

| | |
|-----|------------------------------|
| EMT | Emergency Medical Technician |
|-----|------------------------------|

G

| | |
|-----|----------------------|
| GCE | Ground Crew Ensemble |
|-----|----------------------|

H

| | |
|----------|--|
| HQ AFMOA | Headquarters Air Force Medical Operations Agency |
|----------|--|

J

| | |
|------|------------|
| JNMN | Journeyman |
|------|------------|

| | |
|--------------------------------|--|
| LHA | L Liquid Hazard Area |
| MEFPAK MERIT MOPP MTF | M Manpower/Equipment Force Packaging Medical Evaluation of Readiness in Individual Training Mission Oriented Protective Posture Military Treatment Facility |
| NAIC NARP NATO NBC | N National Air Intelligence Center Nuclear Weapon Accident Procedures North Atlantic Treaty Organization Nuclear/Biological/Chemical |
| OPLANS OPR | O Operational Plans Office of Primary Responsibility |
| ppm | P Parts Per Million |
| SF | R Security Forces |
| RDIC | S Resuscitation Device, Individual Chemical |
| TA TAP TEMPER | T Table of Allowance Toxicological Agent Protective Apron Tent, Expandable, Modular, Personnel |
| UTC | U Unit Type Code |
| VHA | V Vapor Hazard Area |

W

WMDT
WMP-1
WRM

Wartime Medical Decontamination Team
War Mobilization Plan
War Reserve Material

APPENDIX 2 REFERENCES

1. AFI 32-4001, Disaster Preparedness Planning and Operations.
2. AFVA 32-4011, USAF Standardized Alarm Signals for Areas Subject to NBCC Attack.
3. AFI 40-106, Medical Readiness Training.
4. AFJMAN 44-149, Treatment of Chemical Casualties and Conventional Military Chemical Injuries.
5. AFM 105-7, Field Behavior of NBC Agents.
6. AFM 355-4, Chemical Weapons Employment.
7. AFM 355-6, Technical Aspects of Biological Defense.
8. AFR 355-7, Potential Military Chemical/Biological Agents and Compounds.
9. TO 11C15-1-3, Chemical Warfare Decontamination, Detection and Disposal of Decontaminating Agents.
10. TO 11D1-111, Decontaminating Kit, Skin, M258 and M258A1.
11. TO 11H2-2-31, Radiological Assessment Kit, ADM 300A.
12. TO 11H2-20-1, Chemical Agent Monitor (CAM).
13. TO 11H2-21-1, Operators Manual for Chemical Agent Detector Kit M256/M256A1.
14. TO 11H2-14-5-1, Operation Instructions, Paper, Chemical Agent, VGH, ABC-M8 and Tape, Chemical Agent Detector, M9.
15. TO 14P3-1-141, Ground Crew Chemical Defense Ensemble.
16. TO 14P4-15-1, Mask, Chemical-Biological, MCU-2/P, or TO 14P4-9-31, Mask, Protective, Field, M17, M17A1, M17A2 and Accessories.
17. TO 14P4-1-151, Chemical and Biological Canisters and Filter Element Sets and Serviceability Listings.
18. TO 35E-5-6-1, Temper Tents.
19. Control of Communicable Diseases in Man.
20. US Army Tech Manual 3-4230-229-10, M291, Decontaminating Kit.
21. US Army Tech Manual 3-6665-327-13&P, Chemical Agent Monitor.

APPENDIX 3 -- DISTRIBUTION LIST

| | |
|---|---|
| <p>HQ USAF SGOP (1) SGXR (1)</p> <p>HQ ACC CEX (1) DOX (1) DP (1) DR (1) IG (1) INX (1) LGX (1) SCP (1) SG (1) SPI (1) XPJ (1)</p> <p>HQ CINCUSACOM J02M (1)</p> <p>HQ USEUCOM ECMD (1)</p> <p>HQ USCINCPAC JO72 (1)</p> <p>USSOUTHCOM SCSG (1)</p> <p>HQ USSOUTHAF SGX (1)</p> <p>HQ USCENTCOM CCSG (1)</p> <p>HQ USCENTAF A1-SGX (1)</p> <p>HQ AFRES SGP (1) SGX (1) XP (1)</p> <p>HQ AFSOC SGP (1) SGX (1)</p> <p>HQ NGB SGB (1) SGX (1) XP (1)</p> <p>HQ PACAF SGP (1) SGX (1)</p> | <p>HQ USAFE SGP (1) SGX (1)</p> <p>HQ AETC SGP (1) SGX (1)</p> <p>HQ AFMC SGP (1) SGX (1)</p> <p>HQ AMC SGP (1) SGX (1)</p> <p>HQ SPACECOM SGP (1) SGX (1)</p> <p>HQ USAF ACADEMY SGP (1) SGX (1)</p> <p>1 MDG SGP (1) SGX (1)</p> <p>2 MDG SGP (1) SGX (1)</p> <p>4 MDG SGP (1) SGX (1)</p> <p>5 MDG SGP (1) SGX (1)</p> <p>7 MDG SGP (1) SGX (1)</p> <p>9 MDG SGP (1) SGX (1)</p> <p>20 MDG SGP (1) SGX (1)</p> |
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| | |
|---------|-----|
| 24 MDG | |
| SGP | (1) |
| SGX | (1) |
| 27 MDG | |
| SGP | (1) |
| SGX | (1) |
| 28 MDG | |
| SGP | (1) |
| SGX | (1) |
| 49 MDG | |
| SGP | (1) |
| SGX | (1) |
| 55 MDG | |
| SGP | (1) |
| SGX | (1) |
| 65 MDG | |
| SGP | (1) |
| SGX | (1) |
| 347 MDG | |
| SGP | (1) |
| SGX | (1) |
| 355 MDG | |
| SGP | (1) |
| SGX | (1) |
| 366 MDG | |
| SGP | (1) |
| SGX | (1) |
| 509 MDG | |
| SGP | (1) |
| SGX | (1) |
| 554 MDG | |
| SGP | (1) |
| SGX | (1) |

APPENDIX 4 - CONOPS COMMENT SHEET

Title: Wartime Medical Decontamination Team

Date:

Project Officer: CMSgt Tim Martin

This CONOPS represents a coordinated position to aid commanders in understanding a particular mission or operational application. To help ACC/XPJ deliver the finest possible product to the user, we need inputs from commanders, staff officers, and planners. Please complete this comment sheet to assist ACC/XPJ in developing and coordinating a revision or update to this CONOPS. Thank you for taking time to complete this comment sheet.

Name/Grade: _____ Office Symbol: _____ DSN: _____

Mailing Address: _____

1. Circle your response to rate the document, using the scale below. A comment section following the sub-areas is provided for any additional remarks.

| | POOR | | SATISFACTORY | | | EXCELLENT | |
|----------------------------|------|---|--------------|---|---|-----------|---|
| • Content (overall) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| • Accuracy | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| • Applicability | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| • Currency | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| • Format | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| • Readability | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| • Timeliness | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

2. Evaluation.

a. Does the concept provide the overall framework or "big picture" for the covered topic?

b. Is the concept consistent with current doctrine, policy, and/or Defense Planning Guidance (if applicable)?

c. Is the information provided useful? If not, how can it be improved?

d. Recommend the following change(s) (if any):

3. Additional Comments:

4. Please mail comments to **HQ ACC/XPJ, 204 DODD BLVD, SUITE 202, LANGLEY AFB VA 23665-2778** (additional pages may be attached if desired) or FAX to DSN 574-2048 or COMM (804)764-2048.

ANNEX A
PROCEDURES FOR WARTIME MEDICAL DECONTAMINATION

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ANNEX A
PROCEDURES FOR WARTIME MEDICAL DECONTAMINATION

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SECTION 1 - INTRODUCTION AND GENERAL INFORMATION

1.1. PURPOSE: The purpose of patient decontamination is to remove gross levels of NBC contaminants from wartime casualties with the intent of arresting the effect of the agent and of enabling prompt medical treatment of contaminated casualties without risking contamination of unprotected medical personnel and medical assets. The more definitive decontamination efforts that may be required, especially regarding radiation exposures, are beyond the scope of this document.

1.2. SCOPE: These instructions apply to wartime medical decontamination operations. Adaptations to accommodate local facility design and wartime tasking are permitted and expected. Radiological decontamination procedures address nuclear weapon detonation fallout only.

1.2.1. The term "decontamination" as used herein means the removal or neutralization of radioactive particles, biological warfare agents, and chemical warfare agents to levels low enough that casualties may be treated without contaminating medical facilities and without posing any immediate health risks to unprotected medical providers. "Decontamination" does not imply absolute removal of contaminants.

1.3. REFERENCES: Additional information is included in the publications listed in Appendix 2. These must be immediately available for reference by WMDT.

1.4. RESPONSIBILITIES: At the MTF, the following applies:

1.4.1. Medical Treatment Facility (MTF) Commander:

1.4.1.1. Ensures operational contingency plans include appropriate provisions to conduct and support medical decontamination when appropriate.

1.4.1.2. Assigns WMDT members in writing.

1.4.1.3. Determines when the WMDT and facility will be activated and deactivated based on threat conditions.

1.4.1.4. Determines pre-decontamination triage priorities and to what extent definitive medical treatment will be administered to contaminated casualties prior to decontamination based on medical providers available, casualty arrival rates, and the type and extent of contamination.

1.4.1.5. Reports suspected or confirmed NBC contamination to higher headquarters.

1.4.1.6. Coordinates with the Transportation Officer on plans for the decontamination of medical vehicles.

1.4.2. Chief, Public Health:

1.4.2.1. Ensures the WMDT is trained and equipped to fulfill mission requirements.

1.4.2.2. Appoints a WMDT Chief, holding a primary AFSC of 4E071.

1.4.3. WMDT Chief: Trains WMDT members and directly supervises medical decontamination operations.

1.4.4. WMDT:

1.4.4.1. Removes or neutralizes NBC contaminants on casualties prior to their admission into the MTF.

1.4.4.2. Removes or neutralizes NBC contaminants on medical personnel, equipment, and facilities.

1.4.4.3. Evaluates potentially contaminated food supplies. Provides technical assistance and recommendations to Responsible Property Officers on the disposition and/or decontamination of contaminated food and offers guidance to food decontamination teams.

SECTION 2 - RESOURCES

2.1. WMDT COMPOSITION:

2.1.1. Medical personnel are assigned to the WMDT by the MTF Commander. These assignments must not conflict with other local wartime/mobility tasking and should take into account the ability of the MTF to receive and stabilize casualties without them. Such assignment is considered a war contingency tasking, not an extra duty or a detail. Rotation of team members will be minimized to maintain team integrity and competency. Due to the difficult physical nature of litter movements in full chemical ensemble it is imperative WMDT members be of sufficient stature and physical condition to accomplish this detail.

2.1.2. During actual contingency operations and deployments, WMDT members may be used by the team that most requires their skills (4NXXXs to treatment teams, 4EXXXs to the PM Team, etc.) whenever they are not engaged in decontamination tasks. However, these duties will not interfere with or be given priority over the conduct of decontamination operations or periodic WMDT training.

2.1.3. The standard WMDT is composed of 19 members. MTFs with UTC FFGLB tasking (WMDT) will conform to the team composition given in the Manpower Force Element Listing for Unit Type Code FFGLB. Other MTFs will compose decontamination teams from this model. Since MTFs vary greatly in size, manpower composition, patient treatment rates, and wartime tasking, the composition of non-UTC teams must be modified locally to meet contingency support plan requirements. Regardless of AFSC make-up, a 19 member team is recommended because patient processing speed is maximized while the potential for recontamination of patients, and WMDT member heat stress, fatigue, and errors are minimized.

2.1.4. Basic triage and wound management tasks must be performed in conjunction with decontamination. Although casualties may have been triaged at casualty collection points and/or by the Retrieval Team before transport to the MTF, a patient's status may have changed by the time of arrival at the DECON facility. Therefore, triage must be done immediately before decontamination. Also, contaminated bandages may have to be replaced during decontamination. Contaminated splint components may have to be replaced and the splint decontaminated by saturating the splint with the 0.5% chlorine solution. These tasks will be conducted by four medical technicians or health care providers assigned to the WMDT. One conducts triage while the other supervises the removal and replacement of bandages and manages wounds during decontamination.

2.1.5. The Manpower Team Chief must be prepared to replace WMDT members suffering heat stress. WMDT members are dressed in Mission Oriented Protective Posture (MOPP) 4 when performing decontamination operations. They also wear rubber aprons and over boots. This, combined with the required lifting of patients, is expected to cause rapid heat stress of WMDT members. Replacement WMDT members will wear their personal GCE (or BDO) and mask. Replacement items, if needed, can be drawn from WMDT back-up supplies.

2.2. WMDT EQUIPMENT AND SUPPLIES:

2.2.1. Equipment and supplies needed by MTFs with contingency tasking for a patient decontamination equipment assemblage (UTC FFGLA) are listed in TA 902A.

2.2.2. Personal protective equipment quantities in TA 902A outfit 38 WMDT members, (in addition to these quantities, GCEs are issued as mobility gear to each person upon deployment to a high threat area). Supplies are sufficient to perform complete body skin decontamination of 500 casualties. This list must be reviewed and modified to support local wartime tasking and types of DECON facilities.

2.3. PATIENT DECONTAMINATION FACILITY:

2.3.1. DECON facility requirements include easy access to water (free of NBC contaminants), electric light, heat or air conditioning (in extremely hot or cold environments), drainage away from the DECON facility and MTF, two shuffle pits (4' x 2' box, 4" deep, with an attached bottom), and shelving (to hold clean supplies and decontamination agent ingredients). Patient decontamination does not have to be conducted inside a facility or tent. However, a roof of some kind is desired to protect equipment and GCEs from rainwater (which can compromise suits and filters) and to provide shade. Complete enclosure in a facility or tent is needed if heat or air conditioning is desired and to protect equipment from weather, dirt, and pilferage. Obviously, vapor concentrations will be greater in an enclosed facility. The impact of this vapor concentration on patient decontamination is difficult to predict since it will depend on the agent, quantity present, air temperature, decontamination solution used, etc. Although WMDT members are protected from chemical agent vapors, patients removed from their GCEs may be compromised. It's desirable to minimize vapor build-up in the facility by maximizing ventilation, frequently removing bags of contaminated waste materials from the interior of the facility, and rinsing of the facility floor (if possible). Increased ventilation can be accomplished by opening doors and

windows, using fans or ECUs, rolling up tent sides, etc. Another way to reduce vapors inside the facility is to operate Station 1 (clothing removal) outside the entrance. Since 90% of the agent will be removed with the clothing, most of the agent will never enter the enclosed area of the facility when using this option. Each WMDT Chief must decide if local circumstances dictate that temperature control or other factors take precedence over potential vapor build-up.

2.3.2. The interior of the DECON facility described herein is designed to become progressively cleaner from entrance to exit. This is accomplished by using gently sloped terrain or floor drains (where available), a series of shuffle pits, and a wall (to restrict vapor movement and splashing) between the wash and remonitor stages. Stations 1 and 2 are Liquid Hazard Areas (LHA). Station 3 is a Vapor Hazard Area (VHA). MOPP 4 is required in the LHA and VHA.

2.3.3. The WMDT operates within the MTF security perimeter. The DECON facility will be at least 250 feet downwind of the MTF, and be situated so arriving vehicles/casualties can reach it without approaching the MTF. A vapor hazard hot line that separates the Vapor Hazard Area from the Toxic Free Area is established halfway between these facilities. The 250 ft distance between the DECON facility and MTF permits moving the liquid and/or vapor hazard lines if areas on the clean side become contaminated and prevents the creation of an inhalation hazard to the MTF from shifting wind directions.

2.3.4. Carrying litters over this 250 ft. distance would slow the decontamination process and rapidly fatigue personnel. Therefore, wheeled litter carriers are included on the WMDT equipment list and can be used for this purpose. Where local terrain inhibits their use, another means of transport should be devised, such as setting litter patients in the bed of a pick-up truck or an available ambulance. Gently sloping terrain and soil conditions which permit drainage from beneath the DECON facility are also needed. Where hardened facilities are used by MTFs, the DECON facility can be safely located in the same building provided air and water flow patterns inhibit vapor and liquid transfer to the treatment areas.

2.3.5. When using a Tent, Expandable, Modular, Personnel (TEMPER), Appendix A2 provides a recommended site set-up, and Appendixes A3, A3-1, and A3-2 provides the recommended configuration of the actual decontamination area.

2.3.6. M-9 chemical agent detection tape will be used to mark areas and facilities around the WMDT and medical compound to detect liquid agent contamination and to ensure the integrity of the hot line.

2.3.7. A shuffle pit should be placed at the DECON facility entrance. Also, position a shuffle pit between Stations 2 and 3. This second pit marks the liquid hazard line. Use one part calcium hypochlorite (CaCl) to three parts of diatomaceous earth or any other available dry chlorine/earth mixture as filler.

2.3.8. Wash bucket set-up and use: 12 buckets are required and are included on the equipment list. Place three at Station 1, place four at Station 2, place four on the ambulatory line and one at Station 3. This set-up is illustrated in Appendix C. All buckets are filled with clean decontamination solution. At Station 1 (both lines), bucket #1 is used to soak dirty scissors, bucket #2 is used for hand washing and

bucket #3 contains multiple pairs of clean scissors. At Station 2 (both lines) use bucket #1 for soaking dirty scissors (which may be needed at station 2 for bandage removal), bucket #2 for glove and apron washing, bucket #3 for gauze, scissors and tongue depressors soaked in decontamination solution, and bucket #4 for refills of decontamination solution. These buckets should be marked to avoid confusion.

2.3.9. The water bladders and pump enable the DECON facility to store clean water and to pump it directly into the decontamination solution receptacles (buckets or trash cans).

2.3.10. Four Stage DECON tent flooring process. Each stage compliments the prior stage. The first stage is used upon arrival, with the subsequent stages to improve the working area and provide a safer working environment for the WMDT. Clearly, if the team arrives on station and must begin DECON procedures immediately, Stage 1 or 2 is the best the WMDT Chief can expect. But, the ultimate goal is to have a Stage 4 floor in place as soon as possible before the team begins DECON procedures.

| STAGE | TIME | TREATMENT |
|--------------|--------------|--|
| 1 | First 24 hrs | Grade floor to allow drainage away from DECON tent and MTF, dig trench between stations 1 and 2 to allow wastewater flow to soakage pit. |
| 2 | 48 hrs | Use sub-flooring on ground to allow better flow of water to soakage pit and slow the contamination of the ground below the DECON tent area. |
| 3 | 72 hrs | Have the CE or Air Base support unit build a gently sloping deck for stations 1 and 2. |
| 4 | 96 hrs | Cover deck with sub-flooring to reduce the absorption of contaminants into the deck materials and increase the flow of wastewater to the soakage pit(s). |

SECTION 3 - PATIENT DECONTAMINATION OPERATIONS

3.1. GENERAL:

3.1.1. When possible, the decision to institute decontamination of patients will be based on more than patient injuries and symptoms. Many conventional weapons can cause “chemical-warfare agent” like symptoms. These include napalm (burns/blisters); incendiaries (burns/blisters, and incidental toxic fumes or oxygen deficiency); obscurants, smokes, riot control agents (nausea, coughing and chemical burns/blisters in high doses); fuel and dust-air explosives (burns/blisters or a virtual absence of visual physical damage); and special military explosive mixtures (burns/blisters). Guidance on the management of these and other non-chemical warfare agent chemical casualties can be found in AFJAM 44-149, Treatment of Chemical Agent Casualties and Conventional Military Chemical Injuries, and AFR 355-7, Potential Military Chemical/Biological Agents and Compounds.

3.1.2. Decontamination causes a delay in medical treatment that could prove critical in some cases. Therefore, only those casualties that are contaminated should be subjected to this process. A properly worn and intact chemical warfare ensemble will protect skin surfaces. Do not assume that every casualty needs stripping and washing. In some cases, removal of the outer layer of clothing may be all that is required. Not all chemical agent vapors and gases adhere as well or persist as long on clothing and skin as do liquid and powdered agents. The effectiveness of aerosols, vapors and gases can be rapidly decreased by wind, rain, heat, and time. Casualties from nearby the MTF may arrive grossly contaminated while those transported long distances may be completely clean. If persistent NBC agents have been used in the area, the Medical Commander may direct that all outer clothing be removed from all patients. However, removal of under layers of clothing and washing of skin should be done only when indicated.

3.1.3. Medical Commander must be advised by the WMDT Chief and reach a decision based on:

3.1.3.1. The potential effect of the agent on the patient and medical staff if not completely removed before definitive medical treatment.

3.1.3.2. The persistency of the agent based on its physical state, method of employment, time since employment, and the effects of local weather and topography.

3.1.3.3. The defensive posture of friendly forces at the time of attack and protective effects of hardened facilities.

3.1.3.4. The ability or inability of the WMDT to detect the presence of the agent on casualties.

3.1.4. Decontamination of casualties is done prior to the delivery of definitive care in medical facilities to arrest the action of the contaminant on the patient and prevent further contamination of patients, medical personnel and medical assets. However, life-saving medical treatment should be provided prior to decontamination, as described below and in AFJAM 44-149, Appendix E.

3.1.4.1. The Medical Commander may elect to establish this treatment team based on medical resources available, patient arrival rates and type of contaminant. In such cases, the treatment team will also conduct the pre-decontamination triage. The team members must wear personal protective gear effective against the NBC agent present. The treatment area prior and during decontamination must be separate from clean treatment areas. Team members are designated by the Medical Commander and must be competent in the emergency management of life threatening wounds and administration of chemical agent antidote.

3.1.4.2. If liquid chemical agent is on the patient, it can be covered during life-saving treatment or contaminated garments can be cut away or removed. The mask can be removed from the patient for emergency airway management or resuscitation. The resuscitation device, individual chemical (RDIC) must be used to prevent exposing the patient to vapor hazards.

3.1.4.3. Treatment at emergency medical treatment station is limited to the administration of atropine, 2PAM CL, and diazepam auto-injectors, application of pressure dressings, establishing a patent airway, and starting an IV infusion. If immediate clearing of the airway must be done at this point to save a life, then the airway is cleared, and the mask replaced.

3.1.4.4. Life saving treatment should always be provided before decontamination of casualties contaminated with only nuclear fallout. Nuclear fallout presents less of an immediate hazard to medical personnel than does a persistent chemical agent. Emergency life saving treatment can be done before decontamination without immediately endangering the safety of treatment teams, provided they wear gloves and practice good personal hygiene and appropriate clothing decontamination. A surgical cap can be used to cover potentially contaminated hair. The mask can be removed from the patient for emergency airway management or resuscitation.

3.1.4.5. When this team is used, decontamination is completed after the stabilization of these patients and before they are transferred to clean treatment or evacuation areas.

3.2. PERSONAL PROTECTIVE EQUIPMENT:

3.2.1. Proper wear of the GCE is described in TO 14P3-1-141. During decontamination operations, all WMDT members dress in MOPP 4. The WMDT Chief will visually inspect each member to ensure protective equipment is properly worn.

3.2.2. WMDT members wear an M-2 toxicological apron over the GCE. The apron is worn over the gloves and the mask hood. The sleeve cuffs of the apron should be taped to the gloves when handling particulate chemical agents (dusts or powders) and radiological agents. The apron must be decontaminated immediately whenever liquid agent is visible and after each patient.

3.2.3. Helmets and load bearing belts and straps are not worn during patient decontamination operations. Rationale: Decontamination operations are not conducted in Alarm Red conditions, failure to secure the chin strap can result in the helmet falling and striking the patient, and the helmet, belts and straps increase physical exertion and heat stress. Although this individual equipment should not be

worn, it should be kept at hand. This will permit quick access to individual nerve agent antidote injectors, canteens and helmets. Equipment can be placed on shelves or be hung from nails, rope or hangers to protect it from contamination.

3.2.4. The WMDT Chief will brief all WMDT members on heat stress. Refer to AFM 32-4005 for information on work/rest cycles. This directive gives projected safe and maximum work times in MOPP 4 based on work level, temperature and humidity. Early symptoms of heat stress include profuse sweating, abdominal cramps, headache, and muscular weakness, trembling, or incoordination. The WMDT Chief will immediately direct the replacement of any WMDT member exhibiting signs of heat stress and will process the stressed team member out of the DECON facility in the same fashion ambulatory patients are processed.

3.2.5. Resting, cooling, and drinking water between patient surges will reduce heat stress. The WMDT Chief should attempt to ascertain (based on communications between the Retrieval Team and 2E Medical Command Center, etc.) if enough time is available before the next casualties arrive to rest the team. If so, he/she may elect to remove WMDT members from the liquid and vapor hazard areas to rest and cool down.

3.2.5.1. Masks and gloves may be removed and the jacket front opened after leaving the vapor hazard area. Before crossing the liquid hazard line, members of Stations 1 and 2 should:

- Wash/decontaminate gloves, then aprons, then over boots, then gloves again.
- Remove aprons and hang them up to avoid recontamination.
- Monitor the entire ensemble for contamination and remove contaminated items.
- Decontaminate boot soles in shuffle pit.

3.2.6. Replace filters/canisters whenever instructed to do so by command authorities, if they get wet, or if air flow through them seems restricted. The NBC agent load on the WMDT's filters/canisters is not expected to exceed that of troops exposed to direct CW or BW agent attack.

3.3. TRIAGE PRIORITIES:

3.3.1. Unless otherwise instructed by the Medical Commander, patients will be processed through the decontamination facility in the following priority:

- 1 - Immediate, 2 - Minimal, 3 - Delayed, 4 - Expectant

3.4. DETECTION AND REMOVAL OF CHEMICAL AGENTS:

3.4.1. WMDTs must be aware of the significant potential for employment of more than just one type of chemical agent in a single attack. Additionally, chemical attacks may occur at the same time as conventional attacks (this tactic is used to increase the effectiveness of the conventional weapon- a force multiplier).

3.4.2. Detection/removal: Currently fielded detection equipment does not detect all possible chemical warfare agents. Agent-specific detection equipment and skin decontamination solutions are shown in The Medical Management of Chemical Casualties Handbook, Sept 1995 (Army). Use of these kits are also described in AFJAM 44-149, and in the Technical Orders listed in references of this CONOPS.

3.4.2.1. M-8 paper: Detects the liquid G nerve agents but does not differentiate between them. Identifies liquid V nerve agent. Detects the liquid H blister agents but does not differentiate between them. Does not detect vapors.

3.4.2.2. M-9 tape: Detects the liquid H, G, and V agents but does not differentiate between them. Does not detect vapors.

3.4.2.3. M256 Kit: Identifies H, CX and L blister agent vapors. Detects G and V nerve agent vapors but does not differentiate between them. Detects CK and AC blood agent vapors but does not differentiate between them. May be used by the PM Team in food storage buildings and by the BEE Team to detect area contamination. This kit is not used to detect liquid agent.

3.4.2.4. Chemical Agent Monitor (CAM): Detects nerve and blister vapors (but only one at a time). Used after the presence of nerve or blister agents has been established to pinpoint contaminated areas. There are six CAMS assigned to the WMDT. They are used at the Entry Control Point (ECP), at Station 3 to ensure the effectiveness of clothing removal and skin washing steps, and at the vapor hazard line to ensure patients are clean prior to entrance into the MTF. Two CAMS are used at each location. Use one on G mode and one on H mode. Instructions for use are given in TO 11H2-20-1 and US Army Technical Manual 3-6665-327-13P.

3.4.3. Decontamination solution preparation and application:

3.4.3.1. M258A1 Personal Skin Decontamination Kit: Effective against nerve and blister agents. The preferred method of emergency individual skin decontamination. **NOTE**, this item is being replaced with the M291 Skin Decontamination Kit (this kit differs significantly from the M258A1, it is a single charcoal impregnated pad).

3.4.3.2. Chlorine solutions: This is the preferred method of decontamination for mass patient decontamination operations. By liberating chlorine on contact, chlorine solutions change nerve and blister agents to less toxic chemicals. Avoid contact with eyes. As with all liquid decontamination solutions, avoid spreading contaminants by minimizing runoff. Use damp (not dripping wet) gauze to wipe (not scrub) contaminated skin. The chlorine in the solutions will gas off and be neutralized by organic materials and the chemical agents. Change the solutions frequently to ensure you are maintaining the proper chlorine concentrations.

3.4.3.2.1. Two different concentrations of calcium hypochlorite (CaCl) solution are used in the patient decontamination procedure. A 0.5% chlorine solution is used for all skin decontamination. A 5% chlorine solution is used to decontaminate the casualty's protective mask and hood; scissors; TAP aprons, and gloves of decontamination team personnel; and litters. The chlorine solutions are placed in the buckets for use. Buckets should be distinctly marked to indicate 0.5% and 5% solutions. It may be much easier to differentiate the two if the 0.5% solution is marked "skin" and the 5% solution is marked "equipment".

3.4.3.2.2. 70% Calcium hypochlorite (CaCl powder): Use the Chlorine Solution Measuring Device, NSN 4610-00-205-0810 to prepare the solutions to the proper concentrations.

3.4.3.2.3. 5% Sodium hypochlorite (chloral): The only chlorine stocked in with the DECON team equipment package is the 70% calcium hypochlorite (CaCl). If a shortage of chlorine occurs, regular household bleach can be procured and utilized. Household bleach contains a 5% chlorine solution, and should be used undiluted when decontaminating equipment. For skin decontamination ½ gallon in 5 gallons of water yields a 0.5% solution.

3.4.3.3. Soapy water: Mixtures are effective as long as suds are maintained. Soap lowers the surface tension of water, thus increasing the wetting power and helping the water to loosen and carry off dirt and grease. Mustard agents are emulsified by this process but are not neutralized. Nerve agents are partially neutralized. As with all liquid decontamination solutions, avoid spreading contaminants by minimizing runoff. Use damp (not dripping wet) gauze to wipe contaminated skin.

3.4.3.4. Sodium Bicarbonate (Baking Soda/Bicarbonate of Soda): Destroys G agents by hastening their hydrolysis. It does not destroy nerve or blister agents as rapidly as calcium hypochlorite solution. Avoid contact with eyes. Prepare a 5% solution by mixing 1 lb. of baking soda to five gallons of warm water. As with all liquid decontamination solutions, avoid spreading contaminants by minimizing runoff. Use damp (not dripping wet) gauze to wipe (not scrub) contaminated skin.

3.4.3.5. Diatomaceous Earth: Preferred as shuffle pit filler ingredient. Mix three (3) parts diatomaceous earth with one (1) part CaCl. Adsorbs liquid agent from aprons, gloves and, to a lesser degree, skin. Avoid contact with eyes, mouth and open wounds. Preferred over wet solutions for removing liquid blister agent from equipment since these agents are generally hydrolyzed in water but not neutralized and can therefore be spread in wet solutions. Using diatomaceous earth can be more time-consuming than wet solutions since all visible dust must be brushed off. Apply by sprinkling it onto the affected area and gently brushing it off after a 1 minute contact time. Rinsing with a minimal amount of soapy water can aid removal of dust from surfaces. Research data indicate that once an agent is adsorbed by diatomaceous earth, it no longer presents a skin contact hazard. However, the agent may slowly evolve out of the diatomaceous earth and can present a vapor hazard over time. The agent may also be released if the used diatomaceous earth becomes wet.

NOTE: Diatomaceous earth is an inhalation hazard and should not be used during training. Sand may be used as substitute for training.

3.5. DETECTION AND REMOVAL OF RADIOLOGICAL AGENTS:

3.5.1. For guidance in decontamination for non-detonation radiological scenarios, refer to the AFOEHL Broken Arrow Guide for Bioenvironmental Engineers, AFI32-4001 Disaster Preparedness Planning and Operations and DODM5100-52, Nuclear Weapon Accident Response Procedures (NARP).

3.5.2. Over 200 fission products, with varying half-lives may result from a detonation fission reaction. Their principle mode of decay is by the emission of beta/gamma radiation. The resulting residual radiation (fallout), in the form of dust, ashes, dirt or mud, may loosely adhere to the clothing and skin of patients.

3.5.3. There are three distinct hazards associated with radiologically contaminated patients. These are the whole body gamma hazard, the beta contact hazard, and an internal hazard from inhalation, ingestion and entry through wounds of contaminated material. These hazards are not of equal importance in a 2E setting. Although potentially the most important, the whole-body gamma hazard should be considerably reduced by the time the patient reaches the MTF due to shake-off of loose particles. Under nuclear war conditions, the minute quantities of radioactive material inhaled, ingested and absorbed through wounds represent a minor hazard compared to the others. The beta contact hazard is significant. If permitted to remain on the skin for several hours to days, damage resembling first or second degree skin burns may result. Removing particles from the skin will eliminate this hazard. This, and preventing a general contamination hazard in the MTF, is the objective of patient decontamination.

3.5.4. Detection:

3.5.4.1. If the MTF is in, or patients are arriving from, a fallout field (or both), monitoring may not be useful. In this case, all casualties may be considered contaminated. Outer clothing should be removed and the potentially contaminated/exposed skin should be washed to remove loose particles. Monitoring of patients after clothing removal/skin washing is also of limited value. It is expected that complete decontamination may not be accomplished by the methods prescribed herein. However, virtually all loose particles will be removed, and medical personnel will not be immediately threatened. Further patient monitoring, nasal swabbing, and abrasive decontamination should be conducted by 3rd and/or 4th Echelon MTFs. The time required to document patient exposure and contamination data is not justified in a 2E setting.

3.5.4.2. The ADM 300 RADIAC Set (depending on levels present) will be used by the BEE Team to determine background radiation levels in the MTF and DECON facility, and (when appropriate) by the WMDT for patient monitoring. Refer to T.O. 11H2-2-31 for detailed instructions on care and use of the ADM 300 Radiac.

3.5.5. Removal: Remove the outer and otherwise exposed layers of clothes and wash exposed skin with gauze saturated with warm soapy water. Do not rub or scrub. Particular attention must be given to places where particles can be trapped, such as the hair, armpits, ears, nostrils,

between fingers and toes, etc. Wash each area that was not protected by clothing/hood/gloves for 1 minute using wet gauze, replacing the gauze frequently. Don't use dripping-wet gauze because this and indiscriminate washing of unexposed skin surfaces may spread contamination. Absolute agent removal from skin surfaces may not always be possible without excessive scrubbing or abrasive cleaning of the skin. Such abrasive cleaning methods are not appropriate in a 2E setting and should not be done. Similarly, contaminated hair is difficult to clean and particles may be retained in spite of washing. However, the presence of these trapped particles is not significant in a 2E setting since they aren't loose (and won't cause significant contamination of clean areas). Detailed monitoring and thorough decontamination must be addressed by 3E and 4E MTFs.

3.6. DETECTION AND REMOVAL OF BIOLOGICAL AGENTS:

3.6.1. Refer to AFM 105-7, Field Behavior of NBC Agents; AFVA32-4011, USAF Standardized Alarm Signals for Areas Subject to NBCC Attack; AFR355-7, Potential Military Chemical/Biological Agents and Compounds; for information on the employment, physical properties, infectivity, detection and control of biological agents. Basically, protection consists of denying access of the agent to the respiratory and digestive systems and upon immunization of individuals. Skin and wound contamination are of secondary importance.

3.6.2. Detection: There is no field detection kit currently available for biological warfare agents. Recognition of their use must be based on epidemiology and symptoms. Once illness begins to appear, the presence of an airborne biological agent should be relatively obvious because of the large numbers of casualties and the absence of a common exposure source such as food or water. Obviously, food and/or water may also serve as a vehicle of transmission. If the situation is not readily apparent, the attack will not have been effective. Some indications of an attack are:

3.6.2.1. Point-source epidemiology with a record number of sick and dying patients presenting within a short period of time, i.e., 12-48 hours.

3.6.2.2. Very high attack rates, i.e., 60-90% of personnel are affected/symptomatic.

3.6.2.3. A high incidence of pulmonary involvement signaling an aerosol route of infection. This would apply to such agents as plague, tularemia, anthrax, and Q fever, where the usual form of infection is not pulmonary.

3.6.2.4. "Impossible epidemiology." If Congo-Crimean Hemorrhagic Fever occurred in Alaska or New York, or Venezuelan Equine Encephalitis in England, a man-made epidemic would be extremely likely.

3.6.2.5. Record fatality rates would be expected for many agents, since a large number of victims would receive doses of organisms far beyond what could possibly occur in nature. This is especially true of an aerosol attack.

3.6.2.6. Localized areas of disease epidemics might occur in an area or sector downwind from the point of attack.

3.6.2.7. Multiple infections at a single site with unusual pathogens.

3.6.2.8. Increased numbers of dead animals of all species, i.e., not just rats for plague, or horses as with an equine encephalitis virus.

3.6.2.9. The near simultaneous outbreak of similar or different epidemics at the same site or at different sites in a theater of operation or at military installations around the world.

3.6.2.10. Direct evidence of an attack, i.e., finding an unexploded munitions or a contaminated exploded munitions; admission by hostile forces or terrorists that bio-weapons are being used; witnessing an attack; or intelligence information reporting use of bio-weapons by hostile forces from covert agents working with those hostile forces.

3.6.3. The MTF should attempt to identify the agent using whatever laboratory resources are available, and should collect and transport appropriate environmental and biological samples to more capable facilities, i.e., Forward Naval Lab.

3.6.4. Removal: Remove the outer layer of clothing and wash contaminated skin with germicidal soap and warm water. As with all liquid decontamination solutions, avoid spreading contaminants by minimizing runoff. Use damp (not dripping wet) gauze to wipe contaminated skin.

3.7. WOUND AND BANDAGE MANAGEMENT:

3.7.1. The WMDT will attempt to process contaminated casualties without interfering with bandages, splints and tourniquets. However, if there is any doubt about contamination of the items or if they obstruct or inhibit skin decontamination, the WMDT will remove and/or replace them. The most qualified medical technician assigned to the WMDT will perform these tasks.

3.7.2. Minimal amounts of contaminants may escape detection, especially around wounds/damaged skin. Treatment teams within the MTF should wear examination or surgical gloves when providing treatment. After each patient, they should immediately dispose of gloves as potentially contaminated material. All surgical gloves, irrigation fluids, and gauze sponges should also be treated as potentially contaminated material after use. Covered, lined containers at each treatment station should be used for temporary collection of these wastes. The bagged material from these receptacles should be collected frequently and be carried by a gloved person to a receptacle stationed at the vapor hot line between the MTF and DECON facility. It will be taken from there to the contaminated waste site by a masked WMDT member.

3.7.3. Decontamination of wounds and mucous membranes (when contaminated) is primarily done by irrigation. Irrigation fluids can spread contaminants and must be controlled:

- Eyes (mask missing or damaged): Irrigate with water or normal saline washing from inner angle toward outer edge. **NOTE:** Replace the damaged or missing mask with a new mask immediately after washing eyes and face.
- Ears (hood missing or damaged): Irrigate and wipe with skin decontamination solution.
- Mouth (conscious patient only, mask missing or damaged): Rinse with water or 3% hydrogen peroxide.
- Wounds: Irrigate wounds (except intracranial head wounds or penetrating abdominal and thoracic cavity wounds) with the 0.5% chlorine solution. Avoid getting the M291 kit material or the diatomaceous earth in wounds.

3.7.4. Decontamination of contaminated Tourniquet(s):

- Decontaminate area of limb proximal (closer to body) to the tourniquet.
- Place a new tourniquet ½ to 1 inch above old tourniquet.
- Remove old tourniquet.
- Decontaminate area where old tourniquet was located.

3.7.5. Decontamination of contaminated splints:

- Remove the splint and wash exposed skin.
- Soak the splint and surrounding exposed skin with decontamination solution if removing it will be excessively time consuming.
- Do not replace splints if removed. The WMDT Chief will inform the Triage Team whenever this has been done.

3.7.6. Decontamination of contaminated bandages:

- Cut away all bandages.
- Decontaminate wounds with skin decontamination solution.
- Cover wounds loosely with gauze.

3.8. PROCESSING AND PATIENT FLOW:

3.8.1. When chemical weapons have been used against friendly forces in the theater of operations, the WMDT is activated. All arriving casualties are then directed to stop at the MTF entry control point so a WMDT member can ascertain if decontamination is needed (by using M-8 paper/M-9 tape, the CAM, or circumstantial evidence such as presence of chemical agent in the area from which the patient came). Casualties suspected or confirmed to be contaminated are directed to the DECON facility. Clean casualties are directed around the DECON facility to the MTF.

3.8.2. After removing outer layers of clothes as described in para 3.10 - Clothing Removal (which is expected to remove over 90% of contaminants) the WMDT must ensure its procedures prevent recontaminating the patients. The system described below utilizes an assembly line/mesh litter approach that has the advantage of employing separate people for successively cleaner tasks. These are organized as Station 1 cut and remove clothes, Station 2, wash skin, and Station 3, remonitor, cover patient, and transfer to triage. Other advantages are:

3.8.2.1. Because of the assembly line approach, each member does fewer tasks. Therefore, the process is more likely to flow smoothly and members are less likely to accidentally skip a step.

3.8.2.2. Traffic flow within the DECON facility is smooth because Station 1 members don't operate in the same space as Station 2 members, etc.

3.8.3. This system can simultaneously process between 4 - 5 litter and 6 - 7 ambulatory patients in an hour, depending on the level and type of contaminant. Appendix A3-2 is an example of the facility layout and patient flow. Four people man the ambulatory line (three at Stations 1 & 2, and one at Station 3). Twelve people man the litter line (four at each station). The four EMTs work where-ever they're needed; to perform triage, assist in patient movement, and performing lifesaving medical procedures. The WMDT Chief moves freely between these lines. Following is a brief description of patient flow and handling on the litter line:

3.8.4. Station 1 (4 people):

- Carry the litter patient from pre-decontamination triage to Station 1.
- Cut off clothing, bandages, etc.
- Wash aprons and gloves with 5% chlorine solution.
- Perform 3-man lift of patient.

3.8.4.1. 4th member scoops cut clothing off litter and drops it into barrel. He then takes litter off the stationary wheeled litter carrier and passes back out the dirty door (DECON facility entrance). Then he places clean mesh litter on the stationary wheeled litter carrier. **NOTE:** Use wheeled litter carrier instead of litter stands, for Stations 1&2, stabilize the wheeled litter carrier with sandbags to create a stable work platform.

- Patient is transferred to mesh litter.
- Wash gloves and aprons.
- Go get next patient.

3.8.4.2. Station 1 is the most time consuming stop in the process. To increase processing speed, every Station 1 member must be involved. Although the GCE should be removed from head to toe (hood, jacket, pants, boots), the jacket cuts can be started before the hood removal is complete, etc. If done well, the gloves and over boots should be removed just seconds after the pant legs are cut and laid open. Also, if not already occupied, the members of the ambulatory Station 1 and the pre-decontamination Triage Officer/NCO should help with waiting litter patients by removing load bearing

equipment, litter straps, and starting the cut process. Conversely, when there are no litter patients, the litter line can form into two additional ambulatory lines.

3.8.5. Station 2 (4 people):

- Go to Station 1, 4-man lift of mesh litter, carry to Station 2.
- Place on litter stand.
- Wash from front to back of contaminated body surfaces. Litter is cleaned as thoroughly as patient.
- Monitor, re-clean if needed.
- Perform 3-man lift of patient, 4th member lifts mesh litter off stand and stands it up against one wall adjacent to Station 2, then he places a clean litter from Station 3 on wheeled litter carrier.
- 4-man lift of litter, front 2 members stand in shuffle pit between Stations 2 and 3. Hand-over-hand pass litter to Station 3.
- Wash gloves and aprons.
- Go get next patient.

3.8.6. Station 3 (4 people, dozens of clean cloth litters available):

- Receive litter from Station 2 people, set on litter stand, re-monitor patient, mask and litter.
- Pass back to Station 2 if dirty.
- If clean, cover patient.
- Carry, roll or otherwise transport clean litter out of WMDT facility exit to “vapor hot line” for pick-up by medical personnel. (Masks are then removed by WMDT member and sent with the patient to the MTF).
- Receive next patient from Station 2.
- Hand clean materials and supplies across to Station 2 as needed.

3.9. LIFTING LITTERS AND PATIENTS:

3.9.1. Litter straps will be used when moving patients into and out of the DECON facility. They will not be used between Stations 1 and 2, or 2 and 3.

3.9.2. Litter patients are always carried by four WMDT members. Litters are moved feet first. The WMDT member at the patient’s right shoulder gives all commands.

3.9.3. When transferring a patient from dirty to clean litter, three WMDT members stand along one side of the litter and the fourth stands on the opposite side of the litter. The member at the patient’s head gives all commands:

- Wash aprons.
- Lift patient using three-man lift, (if the patient has a spinal injury requiring additional in-line support or if the patient is extremely large, then use a four-man lift).
- Member #1 gives all commands, when to lift and lower. He/she also places his arms under the patient’s neck and upper back.

- Member #2 places his/her arms under the small of patient's back and upper thighs.
- Member #3 places his/her arms under the patient's knees and lower legs.
- Lift by rolling the patient to the lifters' chest.
- Member #4 disposes of contaminated clothes, removes dirty litter, and replaces it with a clean litter.
- Lower patient to clean litter.

3.9.4. Alternate methods for patient movement: These examples can be used at the discretion of the WMDT Chief. Variance from the standard patient movement may be required if the following circumstances occur: The physical stature of the team is small (small personnel with reduced upper body strength will have a tough time continuously performing patient lifts, thus, more susceptible to heat stress injuries and/or physical trauma), or if physical trauma/heat stress injuries have depleted the team personnel compliment and the MTF is unable to sustain or backfill the manpower shortages.

3.9.4.1. Alternate method #1: Carrying of litters can be minimized by using wheeled litter carriers. Load the litter patient onto wheeled litter carrier after predecon triage and roll the patient to Station 1. After clothing removal and lifting the patient, roll the dirty cloth litter out the DECON facility entrance. Dispose of the litter and reuse the carrier for the next patient. In the meantime, the first patient is lowered onto a mesh litter permanently mounted to another wheeled carrier and is rolled to Station 2. After washing the patient and the wheeled litter carrier, this is rolled to Station 3 for monitoring (using a roll-in shuffle pit, this shuffle pit must be as long as the circumference of the wheels of the NATO Wheeled Litter Carrier). If contamination is detected, roll it back to Station 2 for re-washing. If not, Station 3 members lift the patient off the mesh. The mesh is rolled back to Station 2 and a clean cloth litter is rolled under the patient, who is then lowered onto it for transfer to triage. This process is not any faster than the traditional method, due in part to the extra washing/monitoring of the wheeled litter carrier itself as well as the patient.

3.9.4.2. Alternate method #2: You can reduce the number of three-man lifts to one (currently, there are two) if you use the mesh litters for patient transfer to the MTF. Instead of washing the patient and transferring the patient to a clean cloth litter at station 2; you can skip the three-man lift and decontaminate the litter as well as the patient by rolling the patient from side-to-side to decontaminate their back. Simultaneously decontaminate the litter with 5 % chlorine solution. Then transfer the patient and mesh litter to Station 3. The Station 3 personnel will monitor the patient and the mesh litter for contaminants, if clean the Station 3 personnel will transfer the patient and mesh litter to the MTF. The MTF can transfer patients from decontaminable litters to beds or other litters upon arrival, therefore, the turn-around time on the mesh litters should be minimal. The TA 902A has been adjusted to reflect this contingency, 12 mesh litters are required now instead of 2.

3.10. CLOTHING REMOVAL:

3.10.1. This step in the decontamination process offers the greatest opportunity for contaminant removal. However, if incorrectly performed, liquid or particulate contaminant transfer to underlayers of clothing or skin may occur. Clothing should be removed one layer at a time. If removal of the BDO adequately decontaminates the patient, do not remove all clothing.

3.10.2. Transfer is most likely to occur along the cut lines (via contaminated scissors), or by touching clean areas of the patient with contaminated gloves. Transfer is best prevented by unzipping rather than cutting whenever possible, and by frequently washing scissors and the gloved fingers of cutters. Washing must be more than just dipping of the fingertips and scissors into the decontamination solution. If a liquid decontamination solution is used, the scissors/fingers must be agitated while submerged. If diatomaceous earth is used, it must be rinsed off (dip and agitate) in a chlorine solution before next use to remove all dust. (The rinse solution must be treated as contaminated waste and be replaced often). Expose all surfaces of the scissors (especially the area between the blades) and wipe off any visible agent with clean gauze dampened with chlorine solution. To expedite this process, scissors may be washed in batches. Using this technique, scissors are dropped into the wash solution in bucket #1 after each cut, hands are washed in bucket #2, and a clean instrument is drawn from bucket #3. While two WMDT members cut off clothes and one tends to wounds and bandages, the fourth Station 1 member washes the scissors in bucket #1 then places them in bucket #2 for reuse.

3.10.3. Standard bandage scissors are expected to become dull after cutting approximately 15 complete ensembles. Replace scissors frequently. Dull scissors will fatigue the cutter and increase the chance of contaminant transfer along jagged cut-lines. Rescue knives are fast and can be less tiresome for cutters. They have several disadvantages though; if you cut across a metal zipper they dull quickly (very quickly), they have a tendency to clog up on the soft insulative nylon liner of the GCE, and if you leave them wet/unprotected they rust almost over-night, rendering them useless for cutting. Combination is the key to fast/accurate clothing removal, use the scissors for the tight/tough spots (neck and shoulder areas) and the rescue knives for the straight/long cuts (sleeves and pant legs).

3.10.4. Masks are not removed from patients until they have been transferred out of the liquid and vapor hazard areas.

3.10.5. Patients may arrive with self-administered nerve agent antidote auto-injectors fixed to the breast pockets of their ground crew ensembles. Obviously, these will be removed as part of the decontamination process. Since health care providers need to know which patients were injected, and how many injections were administered, the WMDT will devise a method of communicating this information to them. For example, the empty injectors may be placed in a clean zip-lock bag, dipped in decontamination solution, and be moved through the DECON facility with the patient to triage; or the number of injectors removed can be written in grease pencil on the patients eye lens cover, etc.

3.10.6. Clothing removal steps:

3.10.6.1. Litter patient:

- Remove litter straps and drop into contaminated barrel.
- Remove load bearing equipment and drop into contaminated barrel.
- Decontaminate hood, remove gross amounts of chemical if present.

NOTES: Before cutting, wipe the lens covers, inlet valve covers (M17A1 only), nose piece/voice emitter, and the hood surfaces around these. Position 2 people on either side of the patient and perform the following steps as mirror images.

3.10.6.1.1. Remove hood: M-17A Protective Mask (some M17A1 masks are still in use):

- Wash scissors.
- Release or cut hood shoulder straps.
- Cut/untie neck cord (one person).
- Cut or pull/loosen neck cord (one person).
- Unzip the hood zipper (one person).
- Cut through the zipper line below voice emitter, starting at the bottom and work up (two people).
- Proceed cutting upward, close to the filter inlet covers and eye lens covers (two people).
- Cut upward to top of eye lens covers (two people).
- Cut across forehead to center (two people).
- Cut from the center of forehead over the top of the head (one person).
- Fold left and right sides of the hood to the side over patient's head, laying sides on the litter (two person).

3.10.6.1.2. Remove hood: MCU-2P and/or M/40:

- Wash scissors.
- Release or cut hood shoulder straps.
- Cut/untie neck cord (one person).
- Cut through the elastic line below voice emitter, starting at the bottom and work up.
- Cut the temple straps of the hood, NOT the mask (one person).
- Fold left and right sides of the hood to the side over patient's head, laying sides on the litter (two person).

3.10.6.1.3. Decontaminate Protective Mask/Face (if hood was torn/damaged):

- Wash/wipe external parts of mask.
- On the M17A1 mask don't spend time trying to prevent the filter inlet valve cover(s) getting wet. These covers must be cleaned and filters in the mask can be replaced at a later time.
- Wipe exposed areas of patient's face including the chin, neck, and back of ears.

3.10.6.1.4. Remove over garment jacket:

NOTE: Cut clothing around tourniquets. **CAUTION:** Bandages required for severe bleeding are treated like tourniquets. See section 3.7 for wound management.

- Wash scissors.
- One person starts to cut at bottom of the jacket on the right side of the patient's button line and works upward to the neck line.

- Wash scissors.
- Both team members grasp a sleeve at the wrist, pull the arm out (away from the patient) and cut the wrist area of sleeve along the inseam up to armpit, and then to the neck area.
- Roll chest sections inside-out toward the patient's sides and tuck these rolls between arm and chest.

3.10.6.1.5. Remove outer gloves:

NOTE: Position one person on each side of the patient and work simultaneously. Do not remove inner gloves.

- Wash your gloves.
- Lift patient's arm by grasping glove.
- Pull the glove away from the patient over the sides of the litter, rolling the cuff over the fingers, turning the glove inside out.
- Drop gloves into the contaminated barrel.
- Wash your gloves.
- Being careful to only touch the patient's gloved hands, lower the arms across the chest or leave the arms extended away from the body. The goal is to avoid touching the potentially contaminated trousers with the patient's inner gloves and unprotected wrists.

3.10.6.1.6. Remove over garment trouser:

NOTE: Position a person at patient's right and left legs and spread the legs slightly.

- Wash scissors.
- Person on patient's left leg: Cut from bottom cuff along inseam to and up the zipper line. This cut should be made as close to the litter surface as possible to minimize the amount of material left when the trouser leg is rolled inside-out toward the patient's side.
- Person on patient's right leg: Cut from cuff to just below zipper and then go sideways across the groin to the first cut. This cut should be made as close to the litter surface as possible to minimize the amount of material left when the trouser leg is rolled inside-out toward the patient's side.
- Roll the trouser halves inside-out toward the patient's sides.

3.10.6.1.7. Remove over boots - Lace-up over boots or green vinyl over boots, (position 2 people, one at each foot):

- Wash your gloves.
- Green vinyl over boots: Cut or unfasten tabs.
- Lace-up over boots: Cut or untie laces, fold lacing eyelets outwards, grasp heel and pull towards you until removed.
- Place over boots in contaminated barrel.
- Wash your gloves.

3.10.6.1.8. Remove combat boots (if over boots were torn/damaged):

NOTE: Position a person at each foot.

- Cut boot laces along the tongue.
- Pull boot downward and toward you until removed.
- Drop boot in contaminated barrel.

3.10.6.1.9. Remove inner trousers (if over garments were torn/damaged):

NOTE: Position a person at patient's right and left legs and spread the legs slightly.

- Wash scissors.
- Unbuckle belt.
- Person on patient's left leg: Cut from bottom cuff along inseam to and up the zipper line. This cut should be made as close to the litter surface as possible to minimize the amount of material left when the trouser leg is rolled inside-out toward the patient's side.
- Person on patient's right leg: Cut from cuff to just below zipper and then go sideways across the groin to the first cut. This cut should be made as close to the litter surface as possible to minimize the amount of material left when the trouser leg is rolled inside-out toward the patient's side. Roll the trouser halves inside-out toward the patient's sides.

3.10.6.1.10. Remove shirt (if over garments were torn):

NOTE: Cut clothing around tourniquets. **CAUTION:** Bandages required for severe bleeding are treated like tourniquets.

- Wash scissors.
- One person starts to cut at the bottom of the shirt on the right side of the patient's button line and works upward to the neck line. Cutting off buttons instead of making a long cut up the button line is quicker for fatigues and BDUs.
- Wash scissors.
- Both team members grasp a sleeve at the wrist, pull the arm out (away from the patient) and cut the wrist area of sleeve along the inseam up to armpit, and then to the neck area.
- Roll chest sections inside-out toward the patient's sides and tuck these rolls between arm and chest.

3.10.6.1.11. Cut underwear (if inner garments were torn):

- Wash scissors.
- Cut at both side seams and fold inward to the groin.
- Put underwear in contaminated barrel.

3.10.6.1.12. If the patient is wearing a brassiere:

- Wash scissors.
- Cut both shoulder straps.

- Cut between cups and both shoulder straps where they attach to cups, lay straps back off shoulders and pull cups to sides.
- Put underwear in contaminated barrel.

NOTE: Do not remove dog tags. (DECONTAMINATE WITH 5% CHLORINE SOLUTION).

3.10.6.1.13. Remove socks (if boots were torn/damaged):

- Wash your gloves.
- Grasp sock at top and pull over foot, turning sock inside out.

3.10.6.1.14. Remove inner gloves:

- Wash your gloves.
- Grasp glove at wrist and pull over hand, turning inside out.

3.10.6.2. Ambulatory patients: Some patients may be capable of removing their own clothes. However, this must be strictly supervised if permitted. A WMDT member must ensure each step is done in order to prevent cross-contamination.

- Remove load bearing equipment and drop into contaminated barrels.
- Wash gloves.

3.10.6.2.1. Remove hood: M-17A Protective Mask (some M17A1 masks are still in use):

- Wash scissors.
- Release or cut hood shoulder straps.
- Cut/untie neck cord (one person).
- Cut or pull/loosen neck cord (one person).
- Unzip the hood zipper (one person).
- Cut through the zipper line below voice emitter, starting at the bottom and work up (two people).
- Proceed cutting upward, close to the filter inlet covers and eye lens covers (two people).
- Cut upward to top of eye lens covers (two people).
- Cut across forehead to center (two people).
- Cut from the center of forehead over the tip of the head (one person).
- Pull the hood down and to the back of patient's head, pulling away from the patient.
- Place in barrel designated for contaminated items.

3.10.6.2.2. Remove hood: MCU-2P and/or M/40:

- Wash scissors.
- Release or cut hood shoulder straps.
- Cut/untie neck cord (one person).
- Cut through the elastic line below voice emitter, starting at the bottom and work up.

- Cut the temple straps of the hood, NOT the mask (one person).
- Pull the hood down and to the back of patient's head, pulling away from the patient.
- Place in barrel designated for contaminated items.

3.10.6.2.3. Decontaminate Protective Mask/Face (if hood was torn/damaged):

- Wash/wipe external parts of mask.
- On the M17A1 mask don't spend time trying to prevent the filter inlet valve cover(s) getting wet. These covers must be cleaned and filters in the mask can be replaced at a later time.
- Wipe exposed areas of patient's face including the chin, neck, and back of ears.

3.10.6.2.4. Remove over garment jacket (one person):

3.10.6.2.4.1. Instruct patient to:

- Clench his/her fists.
- Stand with arms held down and extended backward at a 30 degree angle.
- Place feet one shoulder width apart.

3.10.6.2.4.2. Stand in front of patient:

- Unsnap jacket front flap.
- Cut or untie bottom string.
- Unzip jacket front.

3.10.6.2.4.3. Move to the rear of the patient:

- If no splints/bandages/tourniquets present: Grasp jacket at collar, peel jacket off shoulders at a 30 degree angle, down and away from the patient (avoid rapid or sharp jerks to avoid spread of contamination).
- Smoothly pull the inside of sleeves over the patient's wrists and hands.
- If splints/bandages or tourniquets present: Wash scissors, cut around all splints, bandages, and tourniquets.
- Cut sleeves from inside wrist to armpit. Cut across shoulder through collar. Peel jacket back and downward to avoid spreading contamination. Insure that the outside of jacket does not touch the patient or inner clothing.

3.10.6.2.5. Remove outer gloves (patient's arms are still extended backwards at a 30 degree angle) (one or two people):

- Wash your gloves in CaCl solution or soapy water.
- Use thumbs and forefingers of both hands.
- Have patient unclench his hands.
- Grasp the heel of patient's glove.
- Peel glove (s) off with a smooth downward motion. (If one person - repeat on opposite side).

- Drop gloves in contaminated barrel.
- Tell the patient to reposition their arms for comfort, but not to touch their trousers.

3.10.6.2.6. Remove over garment trousers (one or two people):

- Cut around all splints, bandages and tourniquets.
- Make two cuts from the outside seam, waist to the ankle.
- Let the trousers drop, pull away from patients feet, dispose of trousers.

3.10.6.2.7. Remove over boots - Lace-up over boots or green vinyl over boots:

- Wash your gloves.
- Green vinyl over boots: Cut or unfasten tabs
- Lace-up over boots: Cut or untie laces, fold lacing eyelets outwards, grasp heel and pull towards you until removed.
- Place over boots in contaminated barrel.
- Wash your gloves.

NOTE: Over boots can be decontaminated and reutilized.

3.10.6.2.8. Remove glove liners (if outer gloves were torn/damaged):

NOTE: Patient should remove the liners since this will reduce the possibility of spreading contamination. Tell patient to:

- Grasp heel of glove with thumb and forefinger without touching exposed skin.
- Peel liner downward and off (away from body).
- Drop in plastic lined can for contaminated disposal.
- Remove and dispose the remaining liner in the same manner.

3.10.6.2.9. Remove inner shirt (if jacket was torn/damaged)(one person):

3.10.6.2.9.1. Instruct patient to:

- Clench his/her fists.
- Stand with arms held down and extended backward at a 30 degree angle.

3.10.6.2.9.2. Place feet one shoulder width apart:

- Stand in front of patient.
- Unbutton or wash scissors and cut off front buttons.
- Move to the rear of the patient.

3.10.6.2.9.3. If no splints/bandages/tourniquets present:

- Grasp at collar, peel off shoulders at a 30 degree angle, down and away from the patient (avoid rapid or sharp jerks to avoid spread of contamination).
- Smoothly pull the inside of sleeves over the patient's wrists and hands.

3.10.6.2.9.4. If splints/bandages or tourniquets present:

- Wash scissors.
- Cut around all splints, bandages, and tourniquets.
- Cut sleeves from inside waist to armpit.
- Cut across shoulder through collar.
- Peel shirt back and downward to avoid spreading contamination. Insure that the outside of shirt does not touch the patient or inner clothing.

3.10.6.2.10. Remove inner trousers (if over garment trousers were torn/damaged) (one or two people):

- Wash scissors and cut around all splints, bandages and tourniquets.
- Make two cuts from the outside seam, waste to the ankle.
- Let the trousers drop, pull away from patients feet, dispose of trousers.

3.10.6.2.11. Remove patient's boots (if over boot was torn/damaged) (one or two people):

- Cut laces, grasp the boot by the heel and pull toward you until removed. Drop boot in contaminated barrel.
- Repeat process with other boot.
- Remove socks (if combat boots were torn).

3.10.6.2.12. Cut underwear (if inner garments were torn):

- Wash scissors.
- Cut at both side seams and allow to drop to ground.
- Put underwear in contaminated barrel.

3.10.6.2.13. If the patient is wearing a brassiere:

- Wash scissors.
- Stand behind patient.
- Cut both shoulder straps.
- Cut back straps and allow brassiere to drop to ground.
- Put underwear in contaminated barrel.

SECTION 4 -CONTAMINATION CONTROL OF EQUIPMENT, FACILITIES AND PATIENT PROPERTY

4.1. GENERAL: The WMDT will attempt to decontaminate medical facilities and equipment. When possible, conduct cleaning operations in the patient decontamination facility to minimize spreading of contaminants.

4.2. HANDLING AND DISPOSAL OF CONTAMINATED MATERIEL:

4.2.1. WMDT members will conduct all handling and disposal tasks. MOPP 4 will be maintained during all disposal procedures. A disposal site will be designated by the MTF Commander based on WMDT Chief recommendations and its perimeter will be clearly marked. Markings will include the NBC agent(s) present and the date of last use of the site.

4.2.2. The disposal site will be near the DECON facility (when practicable) for easy access. If the DECON facility is in the same building as the MTF, the site will be at least 250 feet downwind of the MTF, with a vapor hazard line established halfway between them.

4.2.3. Provided time and resources permit, or if the safety of the MTF is threatened, the drainage trough and collection pit will be periodically neutralized and material in the disposal site buried under 3 feet of earth to preclude vapor hazards. Coordinate this effort with your Bioenvironmental Engineers and Civil Engineers.

4.3. DECONTAMINATION SOLUTIONS: Decontamination materials include Calcium Hypochlorite (70%) and other chlorine solutions, diatomaceous earth, dirt, hot air, fire, soap, water, baking soda, washing soda, ammonia, gasoline, time and many others. Select solutions based on type of material to be cleaned, the agent, and the expected chemical reaction between the solution, material and agent. Some solutions (especially chlorinated solutions) react violently or produce toxic vapors when in contact with certain other materials or chemical agents. Detailed guidance is given in the Annexes of this CONOPS, AFJAM 44-149, AFR 355-7 and TO 11C15-1-3.

4.4. PATIENT CLOTHING, EQUIPMENT AND PERSONAL ITEMS:

4.4.1. Removing personal items from the clothing of patients during decontamination operations would ensure the items were kept segregated from those belonging to other patients. However, this may slow the process, and should only be done when patient rates are low enough that it causes no delays. During patient surges, and whenever the WMDT Chief directs, personal items will be collected from contaminated clothing after all patients have been processed.

4.4.2. When collecting personal items from contaminated clothing, use one plastic bag to hold all of the items from each piece of clothing. Decontaminate the items while maintaining this grouping, and transfer

the group to a clean bag. The bags will be given to the MTF Administrator for safe keeping and disposition. The WMDT Chief will personally ensure the integrity of this operation. The contents of each bag can then be examined for personal information or can be identified by patients.

4.4.3. Disposed/potentially contaminated clothing and equipment items are salvaged only if ordered by the MTF Commander. When so ordered, instructions should be sought from the Civil Engineering Air Base Operability Section.

4.5. DECON FACILITY CLEAN-UP AND SHUT DOWN: Time and resources should not be spent cleaning the facility or equipment unless it is necessary for their continued use or for the safety of other medical assets.

4.5.1. Mix shuffle pit filler with a shovel when it appears coagulated, damp, or off-color and replace it when monitoring produces positive results. Used filler should be bagged and labeled as contaminated waste.

4.5.2. Floors and walls may accumulate contaminants. If time and resources permit, wash the floor when radiation levels reach three times outdoor background or when chemical agent monitoring indicates the presence of free liquid agent. Water interferes with beta monitoring, so monitor the driest yet most contaminated areas.

4.5.3. The Medical Commander will determine when the WMDT and facility will be deactivated (temporarily or permanently). Shut down procedures:

4.5.3.1. Contaminated supplies and the contents of contaminated material barrels that will not be salvaged will be bagged, sealed with tape, and taken to the disposal site.

4.5.3.2. The DECON facility walls, equipment, barrels, shuffle pits and floors will be cleaned with the appropriate solution.

4.5.3.3. Before leaving the DECON facility for temporary termination of DECON operations, WMDT members will:

- Decontaminate gloves, then aprons, then gloves again.
- Remove aprons and hang them up to avoid recontamination.
- Decontaminate over boot tops then gloves.
- Monitor the entire ensemble for contamination and remove contaminated items.
- Decontaminate boot soles in shuffle pit.
- Don't remove the mask until after crossing vapor hot line.

4.6. DONNING AND DOFFING TENT: A two section donning /doffing tent is used by the WMDT as a staging and storage area. It is located at the vapor hot line between the MTF and the DECON facility. The WMDT will need an area to perform their shift change and re-supply procedures without the support of the MTF. A tent is necessary to provide protection to the team members and

supplies from the elements and pilferage. The WMDT's Ship & Storage Containers (Brooks & Perkins) will be co-located to the donning/doffing tent. This tent could also serve as the staging/treatment area for the post decontamination triage team during patient influx. The TA 902A has been adjusted to accommodate the donning/doffing tent.

APPENDIX A1

RECOMMENDED TRAINING EQUIPMENT FOR DECON PERSONNEL PACKAGES (FFGLB) NOT CO-LOCATED WITH DECON EQUIPMENT PACKAGE (FFGLA)

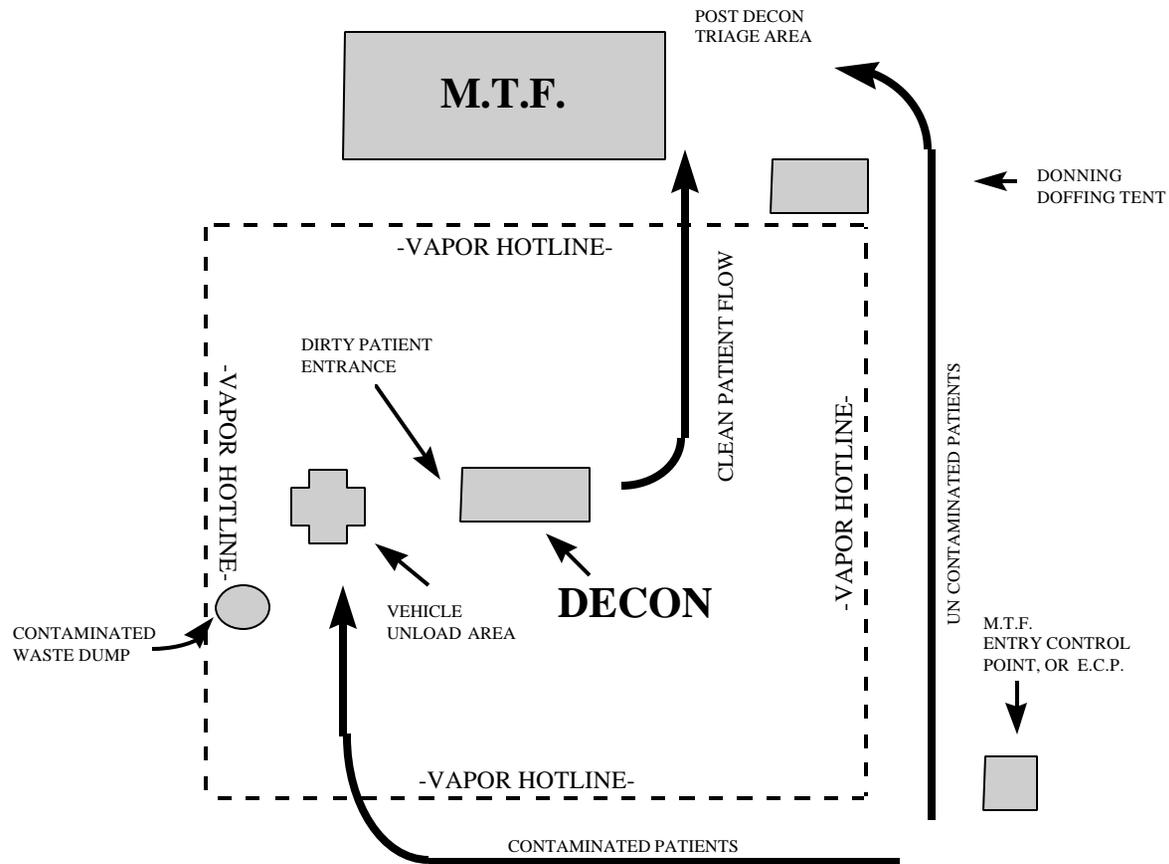
| NSN | Quantity | Nomenclature | Common Name | UI | ACC NOTES |
|---------------|----------|---------------------------------------|--|----|--|
| 3740006414719 | 1 | SPRAYER INSECTICIDE 8 QT | BUG SPRAYER | EA | |
| 4230011013984 | 0 | DECONTAMINATING KIT | M258A1 PERSONAL DECON KIT | KT | USE UNTIL EXPIRES IF YOU HAVE ON HAND, DON'T ORDER NEW |
| 4320008529036 | 1 | PUMP INFLATING MAN 30 IN | BICYCLE PUMP | EA | |
| 4720002033920 | 5 | HOSE RUBR WTR 5/8DIA 50FT | GARDEN HOSE | EA | |
| 4730005951103 | 4 | NOZZLE GARDEN HOSE | GARDEN HOSE NOZZLE OR SPRAYER | EA | |
| 5110000984326 | 5 | BLADE KNIFE CRASH STEEL2S | RESCUE KNIFE BLADES (REPLACEMENT) | PG | |
| 5110005246924 | 10 | KNIFE RESCUE SAFETY | RESCUE KNIVES | EA | |
| 6510007822698 | 24 | SPONGE SURG GAUZE4X4IN200 | FOUR BY FOURS | PG | |
| 6510007822699 | 24 | SPONGE SURG 12PLY4X8IN200 | GAUZE SPONGE | PG | |
| 6515003245500 | 1 | DEPRESSOR TONGUE 6IN 100S | TONGUE DEPRESSORS | PG | |
| 6515009357138 | 20 | SCISSORS BAND CRS 7.25 IN | BANDAGE SCISSORS | EA | |
| 6530012207186 | 6 | CARRIER LITTER WHEELED | NATO WHEELED LITTER CARRIER | EA | |
| 6530012909964 | 6 | LITTER FOLDING RIGID POLE | NYLON MESH LITTER | EA | |
| 6665000508529 | 10 | PAPER CHEM AGENT DETECTOR | M-8 PAPER | BK | ALTERNATE FOR CAMS |
| 6665011121644 | 3 | SIMULATOR, DETECTOR TICKETS, CHEMICAL | CHEM AGENT DETECTOR TRAINING KIT | KT | |
| 6665011334964 | 2 | DETECTOR KIT CHEMICAL | M256- VAPOR DETECTION KIT | KT | 8 TESTS PER KIT |
| 6665011994153 | 0 | MONITOR CHEMICAL AGENT | CAMS OR CHEMICAL AGENT MONITORING SYSTEM | EA | COORD WITH BIO/REQUEST TO BORROW CAMS AND RECEIVE TRNG |
| 6665012265589 | 5 | PAPER CHEMICAL AGENT 2S | M-9 TAPE | RO | ALTERNATE FOR CAMS |
| 7105002698463 | 6 | CHAIR FOLDING STEEL | FOLDING CHAIR | EA | |
| 7240005752243 | 20 | PAIL UTILITY STEEL 28 QTS | STEEL BUCKET | EA | XTRA FOR MIXING CHEM. |
| 7240008197735 | 15 | WASTE RECEPTACLE 32 GAL | LARGE PLASTIC TRASH CAN W/LID | EA | |
| 7920002406358 | 6 | BRUSH DUSTING, BENCH 13IN | DUSTING BRUSH | EA | |
| 7920002924370 | 2 | BROOM UPRIGHT FIBER | BROOM FOR SWEEPING | EA | |
| 8105008377757 | 1 | BAG,PLASTIC | SMALL PLASTIC BAGS | BX | FOR PERSONAL EFFECTS |
| 8105012213239 | 1 | BAG PLASTIC 60 X 36 200S | LARGE PLASTIC BAGS | BX | |
| 8415002817814 | 10 | APRON TOX AGT PROTECT M-2 | MEDIUM M2 APRONS | EA | |
| 8415002817815 | 10 | APRON TOX AGT PROTECT M-2 | LARGE M2 APRON | EA | |

| | | | | |
|---------------|-----------------------------|--|----|---|
| 4230012761905 | 1 DECONTAMINATING KIT, SKIN | M291 KIT, REPLACEMENT FOR M258A1 | BX | 6 PK/KT, 20 KT/BOX |
| 9905013464716 | 2 SIGN KIT, CONTAMINANT | NBC MARKING KIT | EA | A NICE ITEM |
| 4230013578456 | 1 DECONTAMINATION KIT, INDI | M295 LARGE DECON KIT | BX | 4 PK/KT, 80 KT/BOX |
| 6665013427747 | 0 ADM-300A (KIT C) | ADM 300 RADIAC SET, REPLACES ALL OTHERS | EA | COORD WITH BIO/REQUEST TO BORROW CAMS AND RECEIVE TRNG |
| 6665800993001 | 0 ADM 300A- (KIT E) | ADM 300 RADIAC SET, VERFICATION KIT | EA | COORD WITH BIO/REQUEST TO BORROW CAMS AND RECEIVE TRNG |

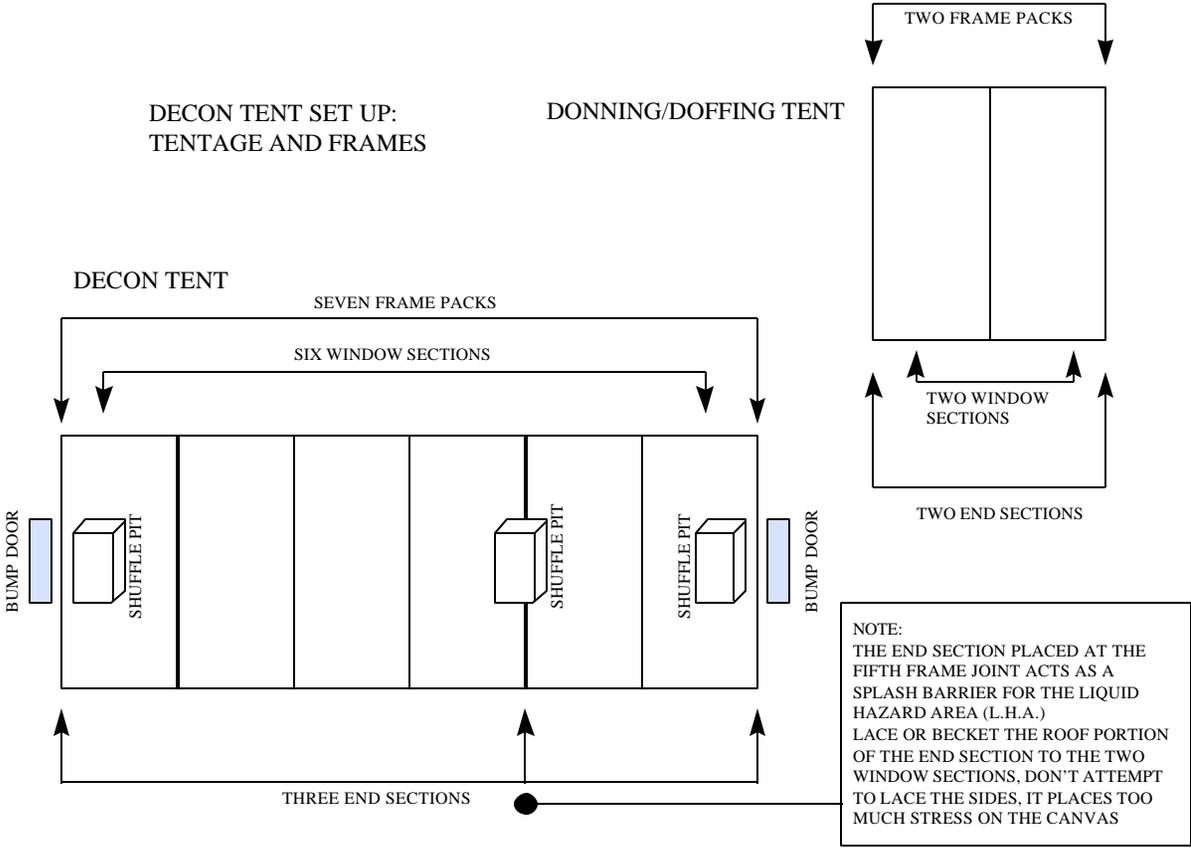
NOTES:

1. Ground Crew Ensembles/MCU-2P Masks/Boots/Gloves/etc. should be issued to each member from your base IEU.
2. To conserve resources tentage is not necessary to conduct the training, however, if tentage is available recommend using it to enhance realism of training.
3. Old GCEs, uniforms, etc., will be needed to dress-out your training casualties.

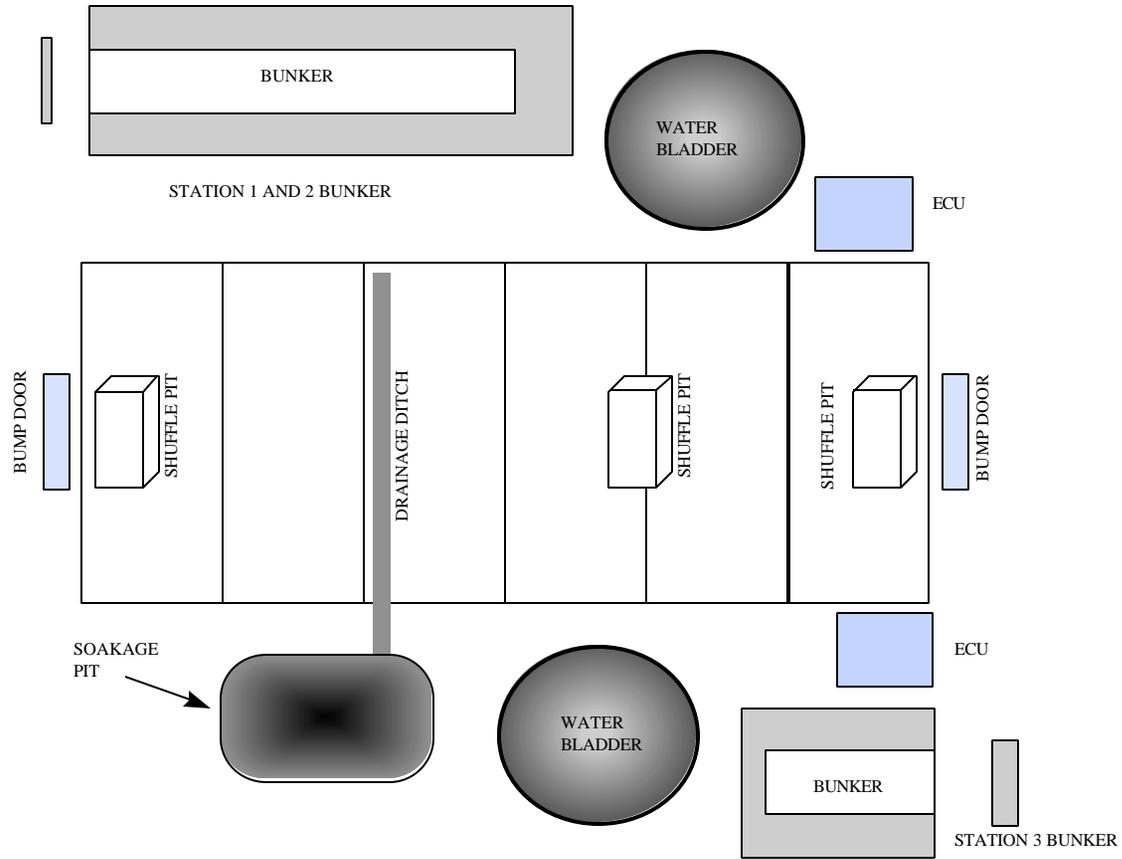
Appendix A2: MTF AND DECON SITE PLACEMENT



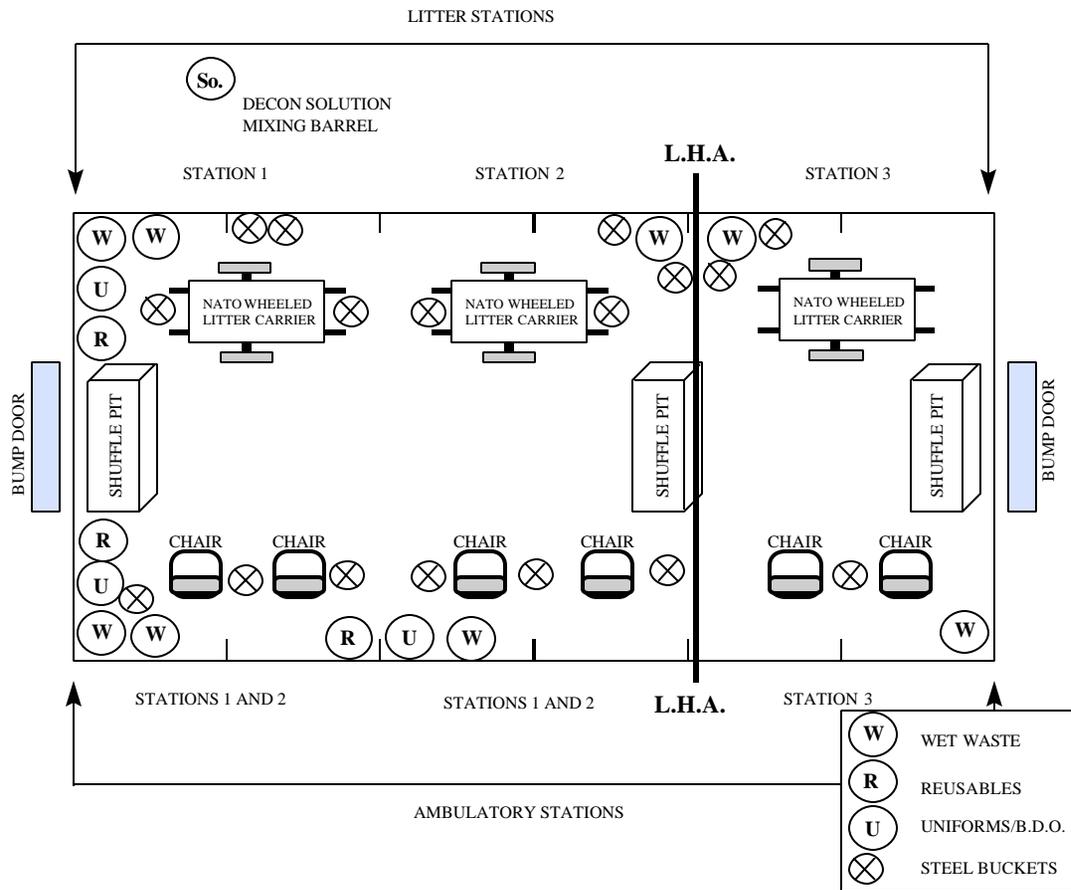
APPENDIX A3: DECON FACILITY LAYOUT



APPENDIX A3-1: DECON FACILITY LAYOUT



APPENDIX A3-2: INTERNAL DECON FACILITY LAYOUT



ANNEX B
PROCEDURES FOR WARTIME MEDICAL DECONTAMINATION CHEMICALLY
HARDENED AIR TRANSPORTABLE HOSPITAL (CHATH) SYSTEM

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ANNEX B
PROCEDURES FOR WARTIME MEDICAL DECONTAMINATION CHEMICALLY
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INDEX Continued

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SECTION 1 - INTRODUCTION AND GENERAL INFORMATION

1.1. PURPOSE: The purpose of patient decontamination is to remove gross levels of NBC contaminants from wartime casualties with the intent of arresting the effect of the agent and of enabling prompt medical treatment of contaminated casualties without risking contamination of unprotected medical personnel and medical assets. The more definitive decontamination efforts that may be required, especially regarding radiation exposures, are beyond the scope of this document.

1.2. SCOPE: These instructions apply to wartime medical decontamination operations when used with the CHATH system. Adaptations to accommodate local facility design and wartime tasking are permitted and expected. Radiological decontamination procedures address nuclear weapon detonation fallout only.

1.2.1. The term "decontamination" as used herein means the removal or neutralization of radioactive particles, biological warfare agents, and chemical warfare agents to levels low enough that casualties may be treated without contaminating medical facilities and without posing any immediate health risks to unprotected medical providers. "Decontamination" does not imply absolute removal of contaminants.

NOTE: The CHATH requires a higher level of decontamination than what would normally be performed in a regular or normal ATH, due to the over pressure of the protective envelope. Final analysis - zero tolerance for contaminants introduced into the CHATH.

1.3. REFERENCES: Additional information is included in the publications listed in Appendix 2. The references must be immediately available for use by the WMDTs.

1.4. RESPONSIBILITIES: At the MTF, the following applies:

1.4.1. Medical Treatment Facility (MTF) Commander:

1.4.1.1. Ensures operational contingency plans include appropriate provisions to conduct and support medical decontamination when appropriate.

1.4.1.2. Assigns WMDT members in writing.

1.4.1.3. Determines when the WMDT and facility will be activated and deactivated based on threat conditions.

1.4.1.4. Determines pre-decontamination triage priorities and to what extent definitive medical treatment will be administered to contaminated casualties prior to decontamination based on medical providers available, casualty arrival rates, and the type and extent of contamination.

1.4.1.5. Reports suspected or confirmed NBC contamination to higher headquarters.

1.4.1.6. Coordinates with the Transportation Officer on plans for the decontamination of medical vehicles.

1.4.2. Chief, Public Health:

1.4.2.1. Ensures the WMDT is trained and equipped to fulfill mission requirements.

1.4.2.2. Appoints a WMDT Chief, holding a primary AFSC of 4E071.

1.4.3. WMDT Chief: Trains WMDT members and directly supervises medical decontamination operations.

1.4.4. WMDT:

1.4.4.1. Removes or neutralizes NBC contaminants on casualties prior to their admission into the MTF.

1.4.4.2. Removes or neutralizes NBC contaminants on medical personnel, equipment, and facilities.

1.4.4.3. Evaluates potentially contaminated food supplies. Provides technical assistance and recommendations to Responsible Property Officers on the disposition and/or decontamination of contaminated food and offers guidance to food decontamination teams.

SECTION 2 - RESOURCES

2.1. WMDT COMPOSITION:

2.1.1. Medical personnel are assigned to the WMDT by the MTF Commander. These assignments must not conflict with other local wartime/mobility tasking and should take into account the ability of the MTF to receive and stabilize casualties without them. Such assignment is considered a war contingency tasking, not an extra duty or a detail. Rotation of team members will be minimized to maintain team integrity and competency. Due to the difficult physical nature of litter movements in full chemical ensemble it is imperative WMDT members be of sufficient stature and physical condition to accomplish this detail.

2.1.2. During actual contingency operations and deployments, WMDT members may be used by the team that most requires their skills (4NXXXs to treatment teams, 4EXXXs to the PM Team, etc.) whenever they are not engaged in decontamination tasks. However, these duties will not interfere with or be given priority over the conduct of decontamination operations or periodic WMDT training.

2.1.3. The standard WMDT is composed of 19 members. MTFs with UTC FFGLB tasking (Deployable Patient WMDT) will conform to the team composition given in the Manpower Force Element Listing for Unit Type Code FFGLB. Other MTFs will compose decontamination teams from this model. Since MTFs vary greatly in size, manpower composition, patient treatment rates, and

wartime tasking, the composition of these teams must be modified locally to meet contingency support plan requirements. Regardless of AFSC make-up, a 19 member team is recommended because patient processing speed is maximized while the potential for recontamination of patients, and WMDT member heat stress, fatigue, and errors are minimized.

2.1.4. Basic triage and wound management tasks must be performed in conjunction with decontamination. Although casualties may have been triaged at casualty collection points and/or by the Retrieval Team before transport to the MTF, a patient's status may have changed by the time of arrival at the DECON facility. Therefore, triage should be done immediately before decontamination. Also, contaminated bandages may have to be replaced during decontamination. Contaminated splint components may have to be replaced and the splint decontaminated by saturating the splint with the 0.5% chlorine solution. These tasks will be conducted by four medical technicians or health care providers assigned to the WMDT. One conducts triage while the other supervises the removal and replacement of bandages and manages wounds during decontamination.

2.1.5. The Manpower Team Chief must be prepared to replace WMDT members suffering heat stress. WMDT members are dressed in Mission Oriented Protective Posture (MOPP) 4 when performing decontamination operations. They also wear TAP aprons and over boots. This, combined with the required lifting of patients, is expected to cause rapid heat stress of WMDT members. Replacement WMDT members will wear their personal GCE (or BDO) and mask. Replacement items, if needed, can be drawn from WMDT back-up supplies.

2.2. WMDT EQUIPMENT AND SUPPLIES:

2.2.1. Equipment and supplies needed by MTFs with contingency tasking for a patient decontamination equipment assemblage (UTC FFGLA) are listed in TA 902A.

2.2.2. Personal protective equipment quantities in TA 902A outfit 38 WMDT members. (In addition to these quantities, GCEs are issued as mobility gear to each person upon deployment to a high threat area). Supplies are sufficient to perform complete body skin decontamination of 500 casualties. This list must be reviewed and modified to support local wartime tasking and types of DECON facilities.

2.3. PATIENT DECONTAMINATION FACILITY:

2.3.1. DECON facility requirements include easy access to water (free of NBC contaminants), electric light, heat or air conditioning (in extremely hot or cold environments), drainage away from the DECON facility and MTF, two shuffle pits (4' x 2' box, 4" deep, with an attached bottom), and shelving (to hold clean supplies and decontamination agent ingredients). Patient decontamination does not have to be conducted inside a facility or tent. However, a roof of some kind is desired to protect equipment and GCEs from rainwater (which can compromise suits and filters) and to provide shade. Complete enclosure in a facility or tent is needed if heat or air conditioning is desired and to protect equipment from weather, dirt, and pilferage. Obviously, vapor concentrations will be greater in an enclosed facility. The impact of this vapor concentration on patient decontamination is difficult to predict since it will

depend on the agent, quantity present, air temperature, decontamination solution used, etc. Although WMDT members are protected from chemical agent vapors, patients removed from their GCEs may be compromised. It's desirable to minimize vapor build-up in the facility by maximizing ventilation, frequently removing bags of contaminated waste materials from the interior of the facility, and rinsing of the facility floor (if possible). Increased ventilation can be accomplished by opening doors and windows, using fans or ECU's rolling up tent sides, etc. Another way to reduce vapors inside the facility is to operate Station 1 (clothing removal) outside the entrance. Since 90% of the agent will be removed with the clothing, most of the agent will never enter the enclosed area of the facility when using this option. Each WMDT Chief must decide if local circumstances dictate that temperature control or other factors take precedence over potential vapor build-up.

2.3.2. The interior of the DECON facility described herein is designed to become progressively cleaner from entrance to exit. This is accomplished by using gently sloped terrain or floor drains (where available), a series of shuffle pits, and a wall (to restrict vapor movement and splashing) between the wash and re-monitoring stages. Stations 1 and 2 are Liquid Hazard Areas (LHA). Station 3 is a Vapor Hazard Area (VHA). MOPP 4 is required in the LHA and VHA.

2.3.3. The DECON facility is connected to the CHATH via airlocks at one end of the emergency room/triage area.

2.3.4. Carrying litters from vehicle staging area would slow the decontamination process and rapidly fatigue personnel. Therefore, wheeled litter carriers are included on the WMDT equipment list and can be used for this purpose. Additionally, half of the wheeled litter carriers could be used inside the CHATH to move patients from the emergency/triage area to other clinics within the CHATH.

2.3.5. When using a Tent, Expandable, Modular, Personnel (TEMPER), Appendixs B2, B2-1, B2-2 provides a recommended site set-up, and Appendixs B3, B3-1, B3-2 provides the recommended configuration of the actual decontamination area.

2.3.6. M-9 chemical agent detection tape will be used to mark areas and facilities around the WMDT and medical compound to detect liquid agent contamination and to ensure the integrity of the hot line.

2.3.7. A shuffle pit should be placed at the DECON facility entrance. Also, position a shuffle pit between Stations 2 and 3. This second pit marks the liquid hazard line. Use three parts STB to two parts of Fullers earth or any other available dry chlorine/earth mixture as filler.

2.3.8. Wash bucket set-up and use: 12 buckets are required and are included on the equipment list. Place three at Station 1, place four at Station 2, place four on the ambulatory line and one at Station 3. This set-up is illustrated in Appendix C. All buckets are filled with clean decontamination solution. At Station 1 (both lines), bucket #1 is used to soak dirty scissors, bucket #2 is used for hand washing and bucket #3 contains multiple pairs of clean scissors. At Station 2 (both lines) use bucket #1 for soaking dirty scissors (which may be needed at station 2 for bandage removal), bucket #2 for glove and apron

washing, bucket #3 for gauze, scissors and tongue depressors soaked in decontamination solution, and bucket #4 for refills of decontamination solution. These buckets should be marked to avoid confusion.

2.3.9. The water bladders and pump listed in Appendix A enable the DECON facility to store clean water and to pump it directly into the decontamination solution receptacles (buckets or trash cans).

2.3.10. Four Stage DECON tent flooring process. Each stage compliments the prior stage. The first stage is used upon arrival, with the subsequent stages to improve the working area and provide a safer working environment for the WMDT. Clearly, if the team arrives on station and must begin DECON procedures immediately, Stage 1 or 2 is the best the WMDT Chief can expect. But, the ultimate goal is to have a Stage 4 floor in place as soon as possible before the team begins DECON procedures.

| STAGE | TIME | TREATMENT |
|--------------|--------------|--|
| 1 | First 24 hrs | Grade floor to allow drainage away from DECON tent and MTF, dig trench between stations 1 and 2 to allow wastewater flow to soakage pit. |
| 2 | 48 hrs | Use sub-flooring on ground to allow better flow of water to soakage pit and slow the contamination of the ground below the DECON tent area. |
| 3 | 72 hrs | Have the CE or Air Base support unit build a gently sloping deck for stations 1 and 2. |
| 4 | 96 hrs | Cover deck with sub-flooring to reduce the absorption of contaminants into the deck materials and increase the flow of wastewater to the soakage pit(s). |

SECTION 3 - PATIENT DECONTAMINATION OPERATIONS

3.1. GENERAL:

3.1.1. When possible, the decision to institute decontamination of patients will be based on more than patient injuries and symptoms. Many conventional weapons can cause “chemical-warfare agent” like symptoms. These include napalm (burns/blisters); incendiaries (burns/blisters, and incidental toxic fumes or oxygen deficiency); obscurants, smokes, riot control agents (nausea, coughing and chemical burns/blisters in high doses); fuel and dust-air explosives (burns/blisters or a virtual absence of visual physical damage); and special military explosive mixtures (burns/blisters). Guidance on the management of these and other non-chemical warfare agent chemical casualties can be found in AFJAM 44-149, Treatment of Chemical Agent Casualties and Conventional Military Chemical Injuries, and AFR 355-7, Potential Military Chemical/Biological Agents and Compounds.

3.1.3. Decontamination causes a delay in medical treatment that could prove critical in some cases. Therefore, only those casualties that are contaminated should be subjected to this process. A properly worn and intact chemical warfare ensemble will protect skin surfaces. Do not assume that every casualty needs stripping and washing. In some cases, removal of the outer layer of clothing may be all that is required. Not all chemical agent vapors and gases adhere as well or persist as long on clothing and skin as do liquid and powdered agents. The effectiveness of aerosols, vapors and gases can be rapidly decreased by wind, rain, heat, and time. Casualties from nearby the MTF may arrive grossly contaminated while those transported long distances may be completely clean. If persistent NBC agents have been used in the area, the Medical Commander may direct that all outer clothing be removed from all patients. However, removal of under layers of clothing and washing of skin should be done only when indicated.

3.1.3.1. Medical Commander must be advised by the WMDT Chief and reach a decision based on:

3.1.3.2. The potential effect of the agent on the patient and medical staff if not completely removed before definitive medical treatment.

3.1.3.3. The persistency of the agent based on its physical state, method of employment, time since employment, and the effects of local weather and topography.

3.1.3.4. The defensive posture of friendly forces at the time of attack and protective effects of hardened facilities.

3.1.3.5. The ability or inability of the WMDT to detect the presence of the agent on casualties.

3.1.4. Decontamination of casualties is done prior to the delivery of definitive care in medical facilities to arrest the action of the contaminant on the patient and prevent further contamination of patients, medical personnel and medical assets. However, life-saving medical treatment can be provided prior to

decontamination, as described below and in AFJAM 44-149, Appendix E, and in the Medical Management of Chemical Casualties Handbook.

3.1.4.1. The Medical Commander may elect to establish this treatment team based on medical resources available, patient arrival rates and type of contaminant. In such cases, the treatment team will also conduct the pre-decontamination triage. The team members must wear personal protective gear effective against the NBC agent present. The treatment area must be separate from clean treatment areas. Team members are designated by the Medical Commander and must be competent in the emergency management of life threatening wounds and administration of chemical agent antidote.

3.1.4.2. If liquid chemical agent is on the patient, it can be covered during life-saving treatment or contaminated garments can be cut away or removed. The mask can be removed from the patient for emergency airway management or resuscitation. The resuscitation device, individual chemical (RDIC) must be used to prevent exposing the patient to vapor hazards.

3.1.4.3. Treatment at emergency medical treatment station is limited to the administration of atropine, 2PAM CL, and diazepam auto-injectors, application of pressure dressings, establishing a patent airway, and starting an IV infusion. If immediate clearing of the airway must be done at this point to save a life, then the airway is cleared, and the mask replaced.

3.1.4.4. Life saving treatment should always be provided before decontamination of casualties contaminated with only nuclear fallout. Nuclear fallout presents less of an immediate hazard to medical personnel than does a persistent chemical agent. Emergency life saving treatment can be done before decontamination without immediately endangering the safety of treatment teams, provided they wear gloves and practice good personal hygiene and appropriate clothing decontamination. A surgical cap can be used to cover potentially contaminated hair. The mask can be removed from the patient for emergency airway management or resuscitation.

3.1.4.5. When this team is used, decontamination is completed after the stabilization of these patients and before they are transferred to clean treatment or evacuation areas.

3.2. PERSONAL PROTECTIVE EQUIPMENT:

3.2.1. Proper wear of the GCE/BDO is described in TO 14P3-1-141. During decontamination operations, all WMDT members dress in MOPP 4. The WMDT Chief will visually inspect each member to ensure protective equipment is properly worn.

3.2.2. WMDT members wear an M-2 toxicological apron over the GCE/BDO. The apron is worn over the gloves and the mask hood. The sleeve cuffs of the apron should be taped to the gloves when handling particulate chemical agents (dusts or powders) and radiological agents. The apron must be decontaminated immediately whenever liquid agent is visible and after each patient.

3.2.3. Helmets and load bearing belts and straps are not worn during patient decontamination operations. Rationale: Decontamination operations are not conducted in Alarm Red conditions, failure to secure the chin strap can result in the helmet falling and striking the patient, and the helmet, belts and straps increase physical exertion and heat stress. Although this individual equipment should not be worn, it should be kept at hand. This will permit quick access to individual nerve agent antidote injectors, canteens and helmets. Equipment can be placed on shelves or be hung from nails, rope or hangers to protect it from contamination.

3.2.4. The WMDT Chief will brief all WMDT members on heat stress. Refer to AFM 32-4005 for information on work/rest cycles. This directive gives projected safe and maximum work times in MOPP 4 based on work level, temperature and humidity. Early symptoms of heat stress include profuse sweating, abdominal cramps, headache, and muscular weakness, trembling, or incoordination. The WMDT Chief will immediately direct the replacement of any WMDT member exhibiting signs of heat stress and will process the stressed team member out of the DECON facility in the same fashion ambulatory patients are processed.

3.2.5. Resting, cooling, and drinking water between patient surges will reduce heat stress. The WMDT Chief should attempt to ascertain (based on communications between the Retrieval Team and 2E Medical Command Center, etc.) if enough time is available before the next casualties arrive to rest the team. If so, he/she may elect to remove WMDT members from the liquid and vapor hazard areas to rest and cool down.

3.2.5.1. Masks and gloves may be removed and the jacket front opened after leaving the vapor hazard area. Before crossing the liquid hazard line, members of Stations 1 and 2 should:

- Wash/decontaminate gloves, then aprons, then over boots, then gloves again.
- Remove aprons and hang them up to avoid recontamination.
- Monitor the entire ensemble for contamination and remove contaminated items.
- Decontaminate boot soles in shuffle pit.

3.2.6. Replace filters/canisters whenever instructed to do so by command authorities, if they get wet, or if air flow through them seems restricted. The NBC agent load on the WMDT's filters/canisters is not expected to exceed that of troops exposed to direct CW or BW agent attack.

3.3. TRIAGE PRIORITIES:

3.3.1. Unless otherwise instructed by the Medical Commander, patients will be processed through the decontamination facility in the following priority:

1 - Immediate, 2 - Minimal, 3 - Delayed, 4 - Expectant

3.4. DETECTION AND REMOVAL OF CHEMICAL AGENTS.

3.4.1. WMDTs must be aware of the significant potential for employment of more than just one type of chemical agent in a single attack. Additionally, chemical attacks may occur at the same time as conventional attacks (this tactic is used to increase the effectiveness of the conventional weapon- a force multiplier).

3.4.2. Detection/removal: Currently fielded detection equipment does not detect all possible chemical warfare agents. Agent-specific detection equipment and skin decontamination solutions are shown in The Medical Management of Chemical Casualties Handbook, Sept 1995 (Army). Use of these kits is described in AFJAM 44-149, and in the Technical Orders listed in references of this CONOPS.

3.4.2.1. M-8 paper: Detects the liquid G nerve agents but does not differentiate between them. Identifies liquid V nerve agent. Detects the liquid H blister agents but does not differentiate between them. Does not detect vapors.

3.4.2.2. M-9 tape: Detects the liquid H, G, and V agents but does not differentiate between them. Does not detect vapors.

3.4.2.3. M256 Kit: Identifies H, CX and L blister agent vapors. Detects G and V nerve agent vapors but does not differentiate between them. Detects CK and AC blood agent vapors but does not differentiate between them. May be used by the PM Team in food storage buildings and by the BEE Team to detect area contamination. This kit is not used to detect liquid agent.

3.4.2.4. Chemical Agent Monitor (CAM): Detects nerve and blister vapors (but only one at a time). Used after the presence of nerve or blister agents has been established to pinpoint contaminated areas. There are six CAMS assigned to the WMDT. They are used at the Entry Control Point (ECP), at Station 3 to ensure the effectiveness of clothing removal and skin washing steps, and at the vapor hazard line/air locks to ensure patients are clean prior to entrance into the MTF. Two CAMS are used at each location. Use one on G mode and one on H mode. Instructions for use are given in TO 11H2-20-1 and US Army Technical Manual 3-6665-327-13P.

3.4.3. Decontamination solution preparation and application:

3.4.3.1. M258A1 Personal Skin Decontamination Kit: Effective against nerve and blister agents. The preferred method of emergency individual skin decontamination. **NOTE**, this item is being replaced with the M291 Skin Decontamination Kit (this kit differs significantly from the M258A1, it is a single charcoal impregnated pad).

3.4.3.2. Chlorine solutions: This is the preferred method of decontamination for mass patient decontamination operations. By liberating chlorine on contact, chlorine solutions change nerve and blister agents to less toxic chemicals. Avoid contact with eyes. As with all liquid decontamination

solutions, avoid spreading contaminants by minimizing runoff. Use damp (not dripping wet) gauze to wipe (not scrub) contaminated skin. The chlorine in the solutions will gas off and be neutralized by organic materials and the chemical agents. Change the solutions frequently to ensure you are maintaining the proper chlorine concentrations.

3.4.3.2.1. Two different concentrations of calcium hypochlorite (CaCl) solution are used in the patient decontamination procedure. A 0.5% chlorine solution is used for all skin decontamination. A 5% chlorine solution is used to decontaminate the casualty's protective mask and hood; scissors; TAP aprons, and gloves of decontamination team personnel; and litters. The chlorine solutions are placed in the buckets for use. Buckets should be distinctly marked to indicate 0.5% and 5% solutions. It may be much easier to differentiate the two if the 0.5% solution is marked "skin" and the 5% solution is marked "equipment".

3.4.3.2.2. 70% Calcium hypochlorite (CaCl powder): Use the Chlorine Solution Measuring Device, NSN 4610-00-205-0810 to prepare the solutions to the proper concentrations.

3.4.3.2.3. 5% Sodium hypochlorite (Clorox): The only chlorine stocked in with the DECON team equipment package is the 70% calcium hypochlorite (CaCl). If a shortage of chlorine occurs, regular household bleach can be procured and utilized. Household bleach contains a 5% chlorine solution, and should be used undiluted when decontaminating equipment. For skin decontamination ½ gallon in 5 gallons of water yields a 0.5% solution.

3.4.3.3. Soapy water: Mixtures are effective as long as suds are maintained. Soap lowers the surface tension of water, thus increasing the wetting power and helping the water to loosen and carry off dirt and grease. Mustard agents are emulsified by this process but are not neutralized. Nerve agents are partially neutralized. As with all liquid decontamination solutions, avoid spreading contaminants by minimizing runoff. Use damp (not dripping wet) gauze to wipe contaminated skin.

3.4.3.4. Sodium Bicarbonate (Baking Soda/Bicarbonate of Soda): Destroys G agents by hastening their hydrolysis. It does not destroy nerve or blister agents as rapidly as sodium hypochlorite solution. Avoid contact with eyes. Prepare a 5% solution by mixing 1 lb. of baking soda to five gallons of warm water. As with all liquid decontamination solutions, avoid spreading contaminants by minimizing runoff. Use damp (not dripping wet) gauze to wipe (not scrub) contaminated skin.

3.4.3.5. Diatomaceous Earth: Preferred as shuffle pit filler ingredient. Mix three (3) parts diatomaceous earth with one (1) part CaCl. Adsorbs liquid agent from aprons, gloves and, to a lesser degree, skin. Avoid contact with eyes, mouth and open wounds. Preferred over wet solutions for removing liquid blister agent from equipment since these agents are generally hydrolyzed in water but not neutralized and can therefore be spread in wet solutions. Using diatomaceous earth can be more time-consuming than wet solutions since all visible dust must be brushed off. Apply by sprinkling it onto the affected area and gently brushing it off after a 1 minute contact time. Rinsing with a minimal amount of soapy water can aid removal of dust from surfaces. Research data indicate that once an agent is adsorbed by diatomaceous earth, it no longer presents a skin contact hazard. However, the agent may

slowly evolve out of the diatomaceous earth and can present a vapor hazard over time. The agent may also be released if the used diatomaceous earth becomes wet.

NOTE: Diatomaceous earth is an inhalation hazard and should not be used during training. Sand may be used as substitute for training.

3.5. DETECTION AND REMOVAL OF RADIOLOGICAL AGENTS:

3.5.1. For guidance in decontamination for non-detonation radiological scenarios, refer to the AFOEHL Broken Arrow Guide for Bioenvironmental Engineers, AFI32-4001 Disaster Preparedness Planning and Operations and DODM5100-52, Nuclear Weapon Accident Response Procedures (NARP).

3.5.2. Over 200 fission products, with varying half-lives may result from a detonation fission reaction. Their principle mode of decay is by the emission of beta/gamma radiation. The resulting residual radiation (fallout), in the form of dust, ashes, dirt or mud, may loosely adhere to the clothing and skin of patients.

3.5.3. There are three distinct hazards associated with radiologically contaminated patients. These are the whole-body gamma hazard, the beta contact hazard, and an internal hazard from inhalation, ingestion and entry through wounds of contaminated material. These hazards are not of equal importance in a 2E setting. Although potentially the most important, the whole-body gamma hazard should be considerably reduced by the time the patient reaches the MTF due to shake-off of loose particles. Under nuclear war conditions, the minute quantities of radioactive material inhaled, ingested and absorbed through wounds represent a minor hazard compared to the others. The beta contact hazard is significant. If permitted to remain on the skin for several hours to days, damage resembling first or second degree skin burns may result. Removing particles from the skin will eliminate this hazard. This, and preventing a general contamination hazard in the MTF, is the objective of patient decontamination.

3.5.4. Detection:

3.5.4.1. If the MTF is in, or patients are arriving from, a fallout field (or both), monitoring may not be useful. In this case, all casualties may be considered contaminated. Outer clothing should be removed and the potentially contaminated/exposed skin should be washed to remove loose particles. Monitoring of patients after clothing removal/skin washing is also of limited value. It is expected that complete decontamination may not be accomplished by the methods prescribed herein. However, virtually all loose particles will be removed, and medical personnel will not be immediately threatened. Further patient monitoring, nasal swabbing, and abrasive decontamination should be conducted by 3rd and/or 4th Echelon MTFs. The time required to document patient exposure and contamination data is not justified in a 2E setting.

3.5.4.2. The ADM 300 RADIAC Set (depending on levels present) will be used by the BEE Team to determine background radiation levels in the MTF and DECON facility, and (when appropriate) by the WMDT for patient monitoring. Refer to T.O. 11H2-2-31 for detailed instructions on care and use of the ADM 300 Radiac.

3.5.5. Removal: Remove the outer and otherwise exposed layers of clothes and wash exposed skin with gauze saturated with warm soapy water. Do not rub or scrub. Particular attention must be given to places where particles can be trapped, such as the hair, armpits, ears, nostrils, between fingers and toes, etc. Wash each area that was not protected by clothing/hood/gloves for 1 minute using wet gauze, replacing the gauze frequently. Don't use dripping-wet gauze because this and indiscriminate washing of unexposed skin surfaces may spread contamination. Absolute agent removal from skin surfaces may not always be possible without excessive scrubbing or abrasive cleaning of the skin. Such abrasive cleaning methods are not appropriate in a 2E setting and should not be done. Similarly, contaminated hair is difficult to clean and particles may be retained in spite of washing. However, the presence of these trapped particles is not significant in a 2E setting since they aren't loose (and won't cause significant contamination of clean areas). Detailed monitoring and thorough decontamination must be addressed by 3E and 4E MTFs.

3.6. DETECTION AND REMOVAL OF BIOLOGICAL AGENTS:

3.6.1. Refer to AFM 105-7, Field Behavior of NBC Agents; AFVA32-4011, USAF Standardized Alarm Signals for Areas Subject to NBCC Attack; AFR355-7, Potential Military Chemical/Biological Agents and Compounds; for information on the employment, physical properties, infectivity, detection and control of biological agents. Basically, protection consists of denying access of the agent to the respiratory and digestive systems and upon immunization of individuals. Skin and wound contamination are of secondary importance.

3.6.2. Detection: There is no field detection kit currently available for biological warfare agents. Recognition of their use must be based on epidemiology and symptoms. Once illness begins to appear, the presence of an airborne biological agent should be relatively obvious because of the large numbers of casualties and the absence of a common exposure source such as food or water. Obviously, food and/or water may also serve as a vehicle of transmission. If the situation is not readily apparent, the attack will not have been effective. Some indications of an attack are:

3.6.2.1. Point-source epidemiology with a record number of sick and dying patients presenting within a short period of time, i.e., 12-48 hours.

3.6.2.2. Very high attack rates, i.e., 60-90% of personnel are affected/symptomatic.

3.6.2.3. A high incidence of pulmonary involvement signaling an aerosol route of infection. This would apply to such agents as plague, tularemia, anthrax, and Q fever, where the usual form of infection is not pulmonary.

3.6.2.4. “Impossible epidemiology.” If Congo-Crimean Hemorrhagic Fever occurred in Alaska or New York, or Venezuelan Equine Encephalitis in England, a man-made epidemic would be extremely likely.

3.6.2.5. Record fatality rates would be expected for many agents, since a large number of victims would receive doses of organisms far beyond what could possibly occur in nature. This is especially true of an aerosol attack.

3.6.2.6. Localized areas of disease epidemics might occur in an area or sector downwind from the point of attack.

3.6.2.7. Multiple infections at a single site with unusual pathogens.

3.6.2.8. Increased numbers of dead animals of all species, i.e., not just rats for plague, or horses as with an equine encephalitis virus.

3.6.2.9. Protection of those working in indoor environments or environments with filtered air at the time of the attack.

3.6.2.10. The near simultaneous outbreak of similar or different epidemics at the same site or at different sites in a theater of operation or at military installations around the world.

3.6.2.11. Direct evidence of an attack, i.e., finding an unexploded munitions or a contaminated exploded munitions; admission by hostile forces or terrorists that bio-weapons are being used; witnessing an attack; or intelligence information reporting use of bio-weapons by hostile forces from covert agents working with those hostile forces.

3.6.3. The MTF should attempt to identify the agent using whatever laboratory resources are available, and should collect and transport appropriate environmental and biological samples to more capable facilities, i.e, Forward Naval Lab.

3.6.4. Removal: Remove the outer layer of clothing and wash contaminated skin with germicidal soap and warm water. As with all liquid decontamination solutions, avoid spreading contaminants by minimizing runoff. Use damp (not dripping wet) gauze to wipe contaminated skin.

3.7. WOUND AND BANDAGE MANAGEMENT:

3.7.1. The WMDT will attempt to process contaminated casualties without interfering with bandages, splints and tourniquets. However, if there is any doubt about contamination of the items or if they obstruct or inhibit skin decontamination, the WMDT will remove and/or replace them. The most qualified medical technician assigned to the WMDT will perform these tasks.

3.7.2. Minimal amounts of contaminants may escape detection, especially around wounds/damaged skin. Treatment teams within the MTF should wear examination or surgical gloves when providing treatment. After each patient, they should immediately dispose of gloves as potentially contaminated material. All surgical gloves, irrigation fluids, and gauze sponges should also be treated as potentially contaminated material after use. Covered, lined containers at each treatment station should be used for temporary collection of these wastes. The bagged material from these receptacles should be collected frequently and be carried by a gloved person to a receptacle stationed at the vapor hot line between the MTF and DECON facility. It will be taken from there to the contaminated waste site by a masked WMDT member.

3.7.3. Decontamination of wounds and mucous membranes (when contaminated) is primarily done by irrigation. Irrigation fluids can spread contaminants and must be controlled:

- Eyes (mask missing or damaged): Irrigate with water or normal saline washing from inner angle toward outer edge. **NOTE:** Replace the damaged or missing mask with a new mask immediately after washing eyes and face.
- Ears (hood missing or damaged): Irrigate and wipe with skin decontamination solution.
- Mouth (conscious patient only, mask missing or damaged): Rinse with water or 3% hydrogen peroxide.
- Wounds: Irrigate wounds (except intracranial head wounds or penetrating abdominal and thoracic cavity wounds) with the 0.5% chlorine solution. Avoid getting the M291 kit material or the diatomaceous earth in wounds.

3.7.4. Decontamination of contaminated Tourniquet(s):

- Decontaminate area of limb proximal (closer to body) to the tourniquet.
- Place a new tourniquet ½ to 1 inch above old tourniquet.
- Remove old tourniquet.
- Decontaminate area where old tourniquet was located.

3.7.5. Decontamination of contaminated splints:

- Remove the splint and wash exposed skin.
- Soak the splint and surrounding exposed skin with decontamination solution if removing it will be excessively time consuming.
- Do not replace splints if removed. The WMDT Chief will inform the Triage Team whenever this has been done.

3.7.6. Decontamination of contaminated bandages:

- Cut away all bandages.
- Decontaminate wounds with skin decontamination solution.
- Cover wounds loosely with gauze.

3.8. PROCESSING AND PATIENT FLOW:

3.8.1. When chemical weapons have been used against friendly forces in the theater of operations, the WMDT is activated. All arriving casualties are then directed to stop at the MTF entry control point so a WMDT member can ascertain if decontamination is needed (by using M-8 paper/M-9 tape, the CAM, or circumstantial evidence such as presence of chemical agent in the area from which the patient came). Casualties suspected or confirmed to be contaminated are directed to the DECON facility. Clean casualties are directed around the DECON facility to the MTF.

3.8.2. After removing outer layers of clothes as described in para 3.10 - Clothing Removal (which is expected to remove over 90% of contaminants) the WMDT must ensure its procedures prevent recontaminating the patients. The system described below utilizes an assembly line/mesh litter approach that has the advantage of employing separate people for successively cleaner tasks. These are organized as Station 1 cut and remove clothes, Station 2, wash skin, and Station 3, re-monitoring, cover patient, and transfer to triage. Other advantages are:

3.8.2.1. Because of the assembly line approach, each member does fewer tasks. Therefore, the process is more likely to flow smoothly and members are less likely to accidentally skip a step.

3.8.2.2. Traffic flow within the DECON facility is smooth because Station 1 members don't operate in the same space as Station 2 members, etc.

3.8.3. This system can simultaneously process between 4 - 5 litter and 6 - 7 ambulatory patients in an hour, depending on the level and type of contaminant. Appendix B3-2 is an example of the facility layout and patient flow. Four people man the ambulatory line (three at Stations 1 & 2, and one at Station 3). Twelve people man the litter line (four at each station). The two EMTs work where-ever they're needed; to perform triage, assist in patient movement, and performing lifesaving medical procedures. The WMDT Chief moves freely between these lines. Following is a brief description of patient flow and handling on the litter line:

3.8.4. Station 1 (4 people):

- Carry the litter patient from pre-decontamination triage to Station 1.
- Cut off clothing, bandages, etc.
- Wash aprons and gloves with 5% chlorine solution.
- Perform 3-man lift of patient.

3.8.4.1. 4th member scoops cut clothing off litter and drops it into barrel. He then takes litter off the stationary wheeled litter carrier and passes back out the dirty door (DECON facility entrance). Then he places clean mesh litter on the stationary wheeled litter carrier. **NOTE:** Use wheeled litter carrier instead of litter stands, for Stations 1&2, stabilize the wheeled litter carrier with sandbags to create a stable work platform.

- Patient is transferred to mesh litter.
- Wash gloves and aprons.
- Go get next patient.

3.8.4.2. Station 1 is the most time consuming stop in the process. To increase processing speed, every Station 1 member must be involved. Although the GCE should be removed from head to toe (hood, jacket, pants, boots), the jacket cuts can be started before the hood removal is complete, etc. If done well, the gloves and over boots should be removed just seconds after the pant legs are cut and laid open. Also, if not already occupied, the members of the ambulatory Station 1 and the pre-decontamination Triage Officer/NCO should help with waiting litter patients by removing load bearing equipment, litter straps, and starting the cut process. Conversely, when there are no litter patients, the litter line can form into two additional ambulatory lines.

3.8.5. Station 2 (4 people):

- Go to Station 1, 4-man lift of mesh litter, carry to Station 2.
- Place on litter stand.
- Wash from front to back of contaminated body surfaces. Litter is cleaned as thoroughly as patient.
- Monitor, re-clean if needed.
- Perform 3-man lift of patient, 4th member lifts mesh litter off stand and stands it up against one wall adjacent to Station 2, then he places a clean litter from Station 3 on wheeled litter carrier.
- 4-man lift of litter, front 2 members stand in shuffle pit between Stations 2 and 3. Hand-over-hand pass litter to Station 3.
- Wash gloves and aprons.
- Go get next patient.

3.8.6. Station 3 (4 people, dozens of clean cloth litters available):

- Receive litter from Station 2 people, set on litter stand, re-monitor patient, mask and litter.
- Pass back to Station 2 if dirty.
- If clean, cover patient.
- Carry, roll or otherwise transport clean litter to the airlock. (Masks are not removed until the patient has been admitted into the CHATH).
- Receive next patient from Station 2.
- Hand clean materials and supplies across to Station 2 as needed.

3.9. LIFTING LITTERS AND PATIENTS:

3.9.1. Litter straps will be used when moving patients into and out of the DECON facility. They will not be used between Stations 1 and 2, or 2 and 3.

3.9.2. Litter patients are always carried by four WMDT members. Litters are moved feet first. The WMDT member at the patient's right shoulder gives all commands.

NOTE: Always place the patient into the airlock head first.

3.9.3. When transferring a patient from dirty to clean litter, three WMDT members stand along one side of the litter and the fourth stands on the opposite side of the litter. The member at the patient's head gives all commands:

- Wash aprons.
- Lift patient using three-man lift, (if the patient has a spinal injury requiring additional in-line support or if the patient is extremely large, then use a four-man lift).
- Member #1 gives all commands, when to lift and lower. He/she also places his arms under the patient's neck and upper back.
- Member #2 places his/her arms under the small of patient's back and upper thighs.
- Member #3 places his/her arms under the patient's knees and lower legs.
- Lift by rolling the patient to the lifters' chest.
- Member #4 disposes of contaminated clothes, removes dirty litter, and replaces it with a clean litter.
- Lower patient to clean litter.

3.9.4. Alternate methods for patient movement: These examples can be used at the discretion of the WMDT Chief. Variance from the standard patient movement may be required if the following circumstances occur: The physical stature of the team is small (small personnel with reduced upper body strength will have a tough time continuously performing patient lifts, thus, more susceptible to heat stress injuries and/or physical trauma), or if physical trauma/heat stress injuries have depleted the team personnel compliment and the MTF is unable to sustain or backfill the manpower shortages.

3.9.4.1. Alternate method #1: Carrying of litters can be minimized by using wheeled litter carriers. Load the litter patient onto wheeled litter carrier after predecon triage and roll the patient to Station 1. After clothing removal and lifting the patient, roll the dirty cloth litter out the DECON facility entrance. Dispose of the litter and reuse the carrier for the next patient. In the meantime, the first patient is lowered onto a mesh litter permanently mounted to another wheeled carrier and is rolled to Station 2. After washing the patient and the wheeled litter carrier, this is rolled to Station 3 for monitoring (using a roll-in shuffle pit, this shuffle pit must be as long as the circumference of the wheels of the NATO Wheeled Litter Carrier). If contamination is detected, roll it back to Station 2 for re-washing. If not, Station 3 members lift the patient off the mesh. The mesh is rolled back to Station 2 and a clean cloth litter is rolled under the patient, who is then lowered onto it for transfer to triage. This process is not any faster than the traditional method, due in part to the extra washing/monitoring of the wheeled litter carrier itself as well as the patient.

3.9.4.2. Alternate method #2: You can reduce the number of three-man lifts to one (currently, there are two) if you use the mesh litters for patient transfer to the MTF. Instead of washing the patient and transferring the patient to a clean cloth litter at station 2; you can skip the three-man lift and decontaminate the litter as well as the patient by rolling the patient from side-to-side to decontaminate their back. Simultaneously decontaminate the litter with 5 % chlorine solution. Then transfer the patient

and mesh litter to Station 3. The Station 3 personnel will monitor the patient and the mesh litter for contaminants, if clean the Station 3 personnel will transfer the patient and mesh litter to the MTF. The MTF can transfer patients from decontaminable litters to beds or other litters upon arrival, therefore, the turn-around time on the mesh litters should be minimal. The TA 902A has been adjusted to reflect this contingency, 12 mesh litters are required now instead of 2.

3.10. CLOTHING REMOVAL:

3.10.1. This step in the decontamination process offers the greatest opportunity for contaminant removal. However, if incorrectly performed, liquid or particulate contaminant transfer to under-layers of clothing or skin may occur. Clothing should be removed one layer at a time. If removal of the BDO adequately decontaminates the patient, do not remove all clothing.

3.10.2. Transfer is most likely to occur along the cut lines (via contaminated scissors), or by touching clean areas of the patient with contaminated gloves. Transfer is best prevented by unzipping rather than cutting whenever possible, and by frequently washing scissors and the gloved fingers of cutters. Washing must be more than just dipping of the fingertips and scissors into the decontamination solution. If a liquid decontamination solution is used, the scissors/fingers must be agitated while submerged. If diatomaceous earth is used, it must be rinsed off (dip and agitate) in a chlorine solution before next use to remove all dust. (The rinse solution must be treated as contaminated waste and be replaced often). Expose all surfaces of the scissors (especially the area between the blades) and wipe off any visible agent with clean gauze dampened with chlorine solution. To expedite this process, scissors may be washed in batches. Using this technique, scissors are dropped into the wash solution in bucket #1 after each cut, hands are washed in bucket #2, and a clean instrument is drawn from bucket #3. While two WMDT members cut off clothes and one tends to wounds and bandages, the fourth Station 1 member washes the scissors in bucket #1 then places them in bucket #2 for reuse.

3.10.3. Standard bandage scissors are expected to become dull after cutting approximately 15 complete ensembles. Replace scissors frequently. Dull scissors will fatigue the cutter and increase the chance of contaminant transfer along jagged cut lines. Rescue knives are fast and can be less tiresome for cutters. They have several disadvantages though; if you cut across a metal zipper they dull quickly (very quickly), they have a tendency to clog up on the soft insulative nylon liner of the GCE, and if you leave them wet/unprotected they rust almost over-night, rendering them useless for cutting. Combination is the key to fast/accurate clothing removal, use the scissors for the tight/tough spots (neck and shoulder areas) and the rescue knives for the straight/long cuts (sleeves and pant legs).

3.10.4. Masks are not removed from patients until they have been transferred out of the liquid and vapor hazard areas.

3.10.5. Patients may arrive with self-administered nerve agent antidote auto-injectors fixed to the breast pockets of their ground crew ensembles. Obviously, these will be removed as part of the

decontamination process. Since health care providers need to know which patients were injected, and how many injections were administered, the WMDT will devise a method of communicating this information to them. For example, the empty injectors may be placed in a clean zip-lock bag, dipped in decontamination solution, and be moved through the DECON facility with the patient to triage; or the number of injectors removed can be written in grease pencil on the patients eye lens cover, etc.

3.10.6. Clothing removal steps:

3.10.6.1. Litter patient:

- Remove litter straps and drop into contaminated barrel.
- Remove load bearing equipment and drop into contaminated barrel.
- Decontaminate hood, remove gross amounts of chemical if present.

NOTES: Before cutting, wipe the lens covers, inlet valve covers (M17A1 only), nose piece/voice emitter, and the hood surfaces around these. Position 2 people on either side of the patient and perform the following steps as mirror images.

3.10.6.1.1. Remove hood: M-17A Protective Mask (some M17A1 masks are still in use):

- Wash scissors.
- Release or cut hood shoulder straps.
- Cut/untie neck cord (one person).
- Cut or pull/loosen neck cord (one person).
- Unzip the hood zipper (one person).
- Cut through the zipper line below voice emitter, starting at the bottom and work up (two people).
- Proceed cutting upward, close to the filter inlet covers and eye lens covers (two people).
- Cut upward to top of eye lens covers (two people) .
- Cut across forehead to center (two people).
- Cut from the center of forehead over the tip of the head (one person).
- Fold left and right sides of the hood to the side over patient's head, laying sides on the litter (two people).

3.10.6.1.2. Remove hood: MCU-2P and/or M/40:

- Wash scissors.
- Release or cut hood shoulder straps.
- Cut/untie neck cord (one person).
- Cut through the elastic line below voice emitter, starting at the bottom and work up.
- Cut the temple straps of the hood, NOT the mask (one person).
- Fold left and right sides of the hood to the side over patient's head, laying sides on the litter (two people).

3.10.6.1.3. Decontaminate Protective Mask/Face (if hood was torn/damaged):

- Wash/wipe external parts of mask.
- On the M17A1 mask don't spend time trying to prevent the filter inlet valve cover(s) getting wet. These covers must be cleaned and filters in the mask can be replaced at a later time.
- Wipe exposed areas of patient's face including the chin, neck, and back of ears.

3.10.6.1.4. Remove over garment jacket:

NOTE: Cut clothing around tourniquets. **CAUTION:** Bandages required for severe bleeding are treated like tourniquets. See section 3.7 for wound management.

- Wash scissors.
- One person starts to cut at bottom of the jacket on the right side of the patient's button line and works upward to the neck line.
- Wash scissors.
- Both team members grasp a sleeve at the wrist, pull the arm out (away from the patient) and cut the wrist area of sleeve along the inseam up to armpit, and then to the neck area.
- Roll chest sections inside-out toward the patient's sides and tuck these rolls between arm and chest.

3.10.6.1.5. Remove outer gloves:

NOTE: Position one person on each side of the patient and work simultaneously. Do not remove inner gloves.

- Wash your gloves.
- Lift patient's arm by grasping glove.
- Pull the glove away from the patient over the sides of the litter, rolling the cuff over the fingers, turning the glove inside out.
- Drop gloves into the contaminated barrel.
- Wash your gloves.
- Being careful to only touch the patient's gloved hands, lower the arms across the chest or leave the arms extended away from the body. The goal is to avoid touching the potentially contaminated trousers with the patient's inner gloves and unprotected wrists.

3.10.6.1.6. Remove over garment trouser:

NOTE: Position a person at patient's right and left legs and spread the legs slightly.

- Wash scissors.
- Person on patient's left leg: Cut from bottom cuff along inseam to and up the zipper line. This cut should be made as close to the litter surface as possible to minimize the amount of material left when the trouser leg is rolled inside-out toward the patient's side.

- Person on patient's right leg: Cut from cuff to just below zipper and then go sideways across the groin to the first cut. This cut should be made as close to the litter surface as possible to minimize the amount of material left when the trouser leg is rolled inside-out toward the patient's side.
- Roll the trouser halves inside-out toward the patient's sides.

3.10.6.1.7. Remove over boots - Lace-up over boots or green vinyl over boots, (position 2 people, one at each foot):

- Wash your gloves.
- Green vinyl over boots - Cut or unfasten tabs.
- Lace-up over boots - Cut or untie laces, fold lacing eyelets outwards, grasp heel and pull towards you until removed.
- Place over boots in contaminated barrel.
- Wash your gloves.

3.10.6.1.8. Remove combat boots (if over boots were torn/damaged):

NOTE: Position a person at each foot.

- Cut boot laces along the tongue.
- Pull boot downward and toward you until removed.
- Drop boot in contaminated barrel.

3.10.6.1.9. Remove inner trousers (if over garments were torn/damaged):

NOTE: Position a person at patient's right and left legs and spread the legs slightly.

- Wash scissors.
- Unbuckle belt.
- Person on patient's left leg: Cut from bottom cuff along inseam to and up the zipper line. This cut should be made as close to the litter surface as possible to minimize the amount of material left when the trouser leg is rolled inside-out toward the patient's side.
- Person on patient's right leg: Cut from cuff to just below zipper and then go sideways across the groin to the first cut. This cut should be made as close to the litter surface as possible to minimize the amount of material left when the trouser leg is rolled inside-out toward the patient's side.
- Roll the trouser halves inside-out toward the patient's sides.

3.10.6.1.10. Remove shirt (if over garments were torn):

NOTE: Cut clothing around tourniquets. **CAUTION:** Bandages required for severe bleeding are treated like tourniquets.

- Wash scissors.

- One person starts to cut at the bottom of the shirt on the right side of the patient's button line and works upward to the neck line. Cutting off buttons instead of making a long cut up the button line is quicker for fatigues and BDUs.
- Wash scissors.
- Both team members grasp a sleeve at the wrist, pull the arm out (away from the patient) and cut the wrist area of sleeve along the inseam up to armpit, and then to the neck area.
- Roll chest sections inside-out toward the patient's sides and tuck these rolls between arm and chest.

3.10.6.1.11. Cut underwear (if inner garments were torn):

- Wash scissors.
- Cut at both side seams and fold inward to the groin.
- Put underwear in contaminated barrel.

3.10.6.1.12. If the patient is wearing a brassiere:

- Wash scissors.
- Cut both shoulder straps.
- Cut between cups and both shoulder straps where they attach to cups, lay straps back off shoulders and pull cups to sides.
- Put underwear in contaminated barrel.

NOTE: Do not remove dog tags. (DECONTAMINATE WITH 5% CHLORINE SOLUTION).

3.10.6.1.13. Remove socks (if boots were torn/damaged):

- Wash your gloves.
- Grasp sock at top and pull over foot, turning sock inside out.

3.10.6.1.14. Remove inner gloves:

- Wash your gloves.
- Grasp glove at wrist and pull over hand, turning inside out.

3.10.6.2. Ambulatory Patients: Some patients may be capable of removing their own clothes. However, this must be strictly supervised if permitted. A WMDT member must ensure each step is done in order to prevent cross-contamination.

- Remove load bearing equipment and drop into contaminated barrels.
- Wash gloves.

3.10.6.2.1. Remove hood: M-17A Protective Mask (some M17A1 masks are still in use):

- Wash scissors.
- Release or cut hood shoulder straps.
- Cut/untie neck cord (one person).
- Cut or pull/loosen neck cord (one person).
- Unzip the hood zipper (one person).
- Cut through the zipper line below voice emitter, starting at the bottom and work up (two people).
- Proceed cutting upward, close to the filter inlet covers and eye lens covers (two people).
- Cut upward to top of eye lens covers (two people) .
- Cut across forehead to center (two people).
- Cut from the center of forehead over the tip of the head (one person).
- Pull the hood down and to the back of patient's head, pulling away from the patient.
- Place in barrel designated for contaminated items.

3.10.6.2.2. Remove hood: MCU-2P and/or M/40:

- Wash scissors.
- Release or cut hood shoulder straps.
- Cut/untie neck cord (one person).
- Cut through the elastic line below voice emitter, starting at the bottom and work up.
- Cut the temple straps of the hood, NOT the mask (one person).
- Pull the hood down and to the back of patient's head, pulling away from the patient.
- Place in barrel designated for contaminated items.

3.10.6.2.3. Decontaminate Protective Mask/Face (if hood was torn/damaged):

- Wash/wipe external parts of mask.
- On the M17A1 mask don't spend time trying to prevent the filter inlet valve cover(s) getting wet. These covers must be cleaned and filters in the mask can be replaced at a later time.
- Wipe exposed areas of patient's face including the chin, neck, and back of ears.

3.10.6.2.4. Remove over garment jacket (one person):

3.10.6.2.4.1. Instruct patient to:

- Clench his/her fists.
- Stand with arms held down and extended backward at a 30 degree angle.
- Place feet one shoulder width apart.

3.10.6.2.4.2. Stand in front of patient:

- Unsnap jacket front flap.
- Cut or untie bottom string.
- Unzip jacket front.

3.10.6.2.4.3. Move to the rear of the patient:

- If no splints/bandages/tourniquets present: Grasp jacket at collar, peel jacket off shoulders at a 30 degree angle, down and away from the patient (avoid rapid or sharp jerks to avoid spread of contamination).
- Smoothly pull the inside of sleeves over the patient's wrists and hands.
- If splints/bandages or tourniquets present: Wash scissors, cut around all splints, bandages, and tourniquets.
- Cut sleeves from inside wrist to armpit. Cut across shoulder through collar. Peel jacket back and downward to avoid spreading contamination. Insure that the outside of jacket does not touch the patient or inner clothing.

3.10.6.2.5. Remove outer gloves (patient's arms are still extended backwards at a 30 degree angle) (one or two people):

- Wash your gloves in CaCl solution or soapy water.
- Use thumbs and forefingers of both hands.
- Have patient unclench his hands.
- Grasp the heel of patient's glove.
- Peel glove (s) off with a smooth downward motion. (If one person - repeat on opposite side).
- Drop gloves in contaminated barrel.
- Tell the patient to reposition their arms for comfort, but not to touch their trousers.

3.10.6.2.6. Remove over garment trousers (one or two people):

- Cut around all splints, bandages and tourniquets.
- Make two cuts from the outside seam, waist to the ankle.
- Let the trousers drop, pull away from patients feet, dispose of trousers.

3.10.6.2.7. Remove over boots - Lace-up over boots or green vinyl over boots.

- Wash your gloves.
- Green vinyl over boots - Cut or unfasten tabs.
- Lace-up over boots - Cut or untie laces, fold lacing eyelets outwards, grasp heel and pull towards you until removed.
- Place over boots in contaminated barrel.
- Wash your gloves.

NOTE: Over boots can be decontaminated and reutilized.

3.10.6.2.8. Remove glove liners (if outer gloves were torn/damaged):

NOTE: Patient should remove the liners since this will reduce the possibility of spreading contamination. Tell patient to:

- Grasp heel of glove with thumb and forefinger without touching exposed skin.
- Peel liner downward and off (away from body).
- Drop in plastic lined can for contaminated disposal.
- Remove and dispose the remaining liner in the same manner.

3.10.6.2.9. Remove inner shirt (if jacket was torn/damaged) (one person):

3.10.6.2.9.1. Instruct patient to:

- Clench his/her fists.
- Stand with arms held down and extended backward at a 30 degree angle.

3.10.6.2.9.2. Place feet one shoulder width apart:

- Stand in front of patient.
- Unbutton or wash scissors and cut off front buttons.
- Move to the rear of the patient.

3.10.6.2.9.3. If no splints/bandages/tourniquets present:

- Grasp at collar, peel off shoulders at a 30 degree angle, down and away from the patient (avoid rapid or sharp jerks to avoid spread of contamination).
- Smoothly pull the inside of sleeves over the patient's wrists and hands.

3.10.6.2.9.4. If splints/bandages or tourniquets present:

- Wash scissors.
- Cut around all splints, bandages, and tourniquets.
- Cut sleeves from inside waist to armpit.
- Cut across shoulder through collar.
- Peel shirt back and downward to avoid spreading contamination. Insure that the outside of shirt does not touch the patient or inner clothing.

3.10.6.2.10. Remove inner trousers (if over garment trousers were torn/damaged) (one or two people):

- Wash scissors and cut around all splints, bandages and tourniquets.
- Make two cuts from the outside seam, waste to the ankle.
- Let the trousers drop, pull away from patients feet, dispose of trousers.

3.10.6.2.11. Remove patient's boots (if over boot was torn/damaged) (one or two people):

- Cut laces, grasp the boot by the heel and pull toward you until removed. Drop boot in contaminated barrel.
- Repeat process with other boot.
- Remove socks (if combat boots were torn).

3.10.6.2.12. Cut underwear (if inner garments were torn):

- Wash scissors.
- Cut at both side seams and allow to drop to ground.
- Put underwear in contaminated barrel.

3.10.6.2.13. If the patient is wearing a brassiere:

- Wash scissors.
- Stand behind patient.
- Cut both shoulder straps.
- Cut back straps and allow brassiere to drop to ground.
- Put underwear in contaminated barrel.

SECTION 4 -CONTAMINATION CONTROL OF EQUIPMENT, FACILITIES AND PATIENT PROPERTY

4.1. GENERAL: The WMDT will attempt to decontaminate medical facilities and equipment. When possible, conduct cleaning operations in the patient decontamination facility to minimize spreading of contaminants.

4.2. HANDLING AND DISPOSAL OF CONTAMINATED MATERIEL:

4.2.1. WMDT members will conduct all handling and disposal tasks. MOPP 4 will be maintained during all disposal procedures. A disposal site will be designated by the MTF Commander based of WMDT Chief recommendations and its perimeter will be clearly marked. Markings will include the NBC agent(s) present and the date of last use of the site.

4.2.2. The disposal site will be near the DECON facility (when practicable) for easy access. If the DECON facility is in the same building as the MTF, the site will be at least 250 feet downwind of the MTF, with a vapor hazard line established halfway between them.

4.2.3. Provided time and resources permit, or if the safety of the MTF is threatened, the drainage trough and collection pit will be periodically neutralized and material in the disposal site buried under 3 feet of earth to preclude vapor hazards. Coordinate this effort with your Bioenvironmental Engineers and Civil Engineers.

4.3. DECONTAMINATION SOLUTIONS: Decontamination materials include Calcium Hypochlorite (70%) and other chlorine solutions, diatomaceous earth, dirt, hot air, fire, soap, water, baking soda, washing soda, ammonia, gasoline, time and many others. Select solutions based on type of material to be cleaned, the agent, and the expected chemical reaction between the solution, material and agent. Some solutions (especially chlorinated solutions) react violently or produce toxic vapors when in contact with certain other materials or chemical agents. Detailed guidance is given in AFJAM 44-149, AFR 355-7 and TO 11C15-1-3.

4.4. PATIENT CLOTHING, EQUIPMENT AND PERSONAL ITEMS:

4.4.1. Removing personal items from the clothing of patients during decontamination operations would ensure the items were kept segregated from those belonging to other patients. However, this may slow the process, and should only be done when patient rates are low enough that it causes no delays. During patient surges, and whenever the WMDT Chief directs, personal items will be collected from contaminated clothing after all patients have been processed.

4.4.2. When collecting personal items from contaminated clothing, use one plastic bag to hold all of the items from each piece of clothing. Decontaminate the items while maintaining this grouping during, and transfer the group to a clean bag. The bags will be given to the MTF Administrator for safe keeping and disposition. The WMDT Chief will personally ensure the integrity of this operation. The contents of each bag can then be examined for personal information or can be identified by patients.

4.4.3. Disposed/potentially contaminated clothing and equipment items are salvaged only if ordered by the MTF Commander. When so ordered, instructions should be sought from the Civil Engineering Air Base Operability Section.

4.5. DECON FACILITY CLEAN-UP AND SHUT DOWN: Time and resources should not be spent cleaning the facility or equipment unless it is necessary for their continued use or for the safety of other medical assets.

4.5.1. Mix shuffle pit filler with a shovel when it appears coagulated, damp, or off-color and replace it when monitoring produces positive results. Used filler should be bagged and labeled as contaminated waste.

4.5.2. Floors and walls may accumulate contaminants. If time and resources permit, wash the floor when radiation levels reach three times outdoor background or when chemical agent monitoring indicates the presence of free liquid agent. Water interferes with beta monitoring, so monitor the driest yet most contaminated areas.

4.5.3. The Medical Commander will determine when the WMDT and facility will be deactivated (temporarily or permanently). Shut down procedures:

4.5.3.1. Contaminated supplies and the contents of contaminated material barrels that will not be salvaged will be bagged, sealed with tape, and taken to the disposal site.

4.5.3.2. The DECON facility walls, equipment, barrels, shuffle pits and floors will be cleaned with the appropriate solution.

4.5.3.3. Before leaving the DECON facility for temporary termination of DECON operations, WMDT members will:

- Decontaminate gloves, then aprons, then gloves again.
- Remove aprons and hang them up to avoid recontamination.
- Decontaminate over boot tops then gloves.
- Monitor the entire ensemble for contamination and remove contaminated items.
- Decontaminate boot soles in shuffle pit.
- Don't remove the mask until after crossing vapor hot line.

APPENDIX B1

**RECOMMENDED TRAINING EQUIPMENT FOR DECON PERSONNEL PACKAGES (FFGLB) NOT CO-LOCATED WITH
DECON EQUIPMENT PACKAGE (FFGLA)**

| NSN | Quantity | Nomenclature | Common Name | UI | ACC NOTES |
|---------------|----------|---------------------------------------|--|----|--|
| 3740006414719 | 1 | SPRAYER INSECTICIDE 8 QT | BUG SPRAYER | EA | |
| 4230011013984 | 0 | DECONTAMINATING KIT | M258A1 PERSONAL DECON KIT | KT | USE UNTIL EXPIRES IF YOU HAVE ON HAND, DON'T ORDER NEW |
| 4320008529036 | 1 | PUMP INFLATING MAN 30 IN | BICYCLE PUMP | EA | |
| 4720002033920 | 5 | HOSE RUBR WTR 5/8DIA 50FT | GARDEN HOSE | EA | |
| 4730005951103 | 4 | NOZZLE GARDEN HOSE | GARDEN HOSE NOZZLE OR SPRAYER | EA | |
| 5110000984326 | 5 | BLADE KNIFE CRASH STEEL2S | RESCUE KNIFE BLADES (REPLACEMENT) | PG | |
| 5110005246924 | 10 | KNIFE RESCUE SAFETY | RESCUE KNIVES | EA | |
| 6510007822698 | 24 | SPONGE SURG GAUZE4X4IN200 | FOUR BY FOURS | PG | |
| 6510007822699 | 24 | SPONGE SURG 12PLY4X8IN200 | GAUZE SPONGE | PG | |
| 6515003245500 | 1 | DEPRESSOR TONGUE 6IN 100S | TONGUE DEPRESSORS | PG | |
| 6515009357138 | 20 | SCISSORS BAND CRS 7.25 IN | BANDAGE SCISSORS | EA | |
| 6530012207186 | 6 | CARRIER LITTER WHEELED | NATO WHEELED LITTER CARRIER | EA | |
| 6530012909964 | 6 | LITTER FOLDING RIGID POLE | NYLON MESH LITTER | EA | |
| 6665000508529 | 10 | PAPER CHEM AGENT DETECTOR | M-8 PAPER | BK | ALTERNATE FOR CAMS |
| 6665011121644 | 3 | SIMULATOR, DETECTOR TICKETS, CHEMICAL | CHEM AGENT DETECTOR TRAINING KIT | KT | |
| 6665011334964 | 2 | DETECTOR KIT CHEMICAL | M256- VAPOR DETECTION KIT | KT | 8 TESTS PER KIT |
| 6665011994153 | 0 | MONITOR CHEMICAL AGENT | CAMS OR CHEMICAL AGENT MONITORING SYSTEM | EA | COORD WITH BIO/REQUEST TO BORROW CAMS AND RECEIVE TRNG |
| 6665012265589 | 5 | PAPER CHEMICAL AGENT 2S | M-9 TAPE | RO | ALTERNATE FOR CAMS |
| 7105002698463 | 6 | CHAIR FOLDING STEEL | FOLDING CHAIR | EA | |
| 7240005752243 | 20 | PAIL UTILITY STEEL 28 QTS | STEEL BUCKET | EA | XTRA FOR MIXING CHEM. |
| 7240008197735 | 15 | WASTE RECEPTACLE 32 GAL | LARGE PLASTIC TRASH CAN W/LID | EA | |
| 7920002406358 | 6 | BRUSH DUSTING, BENCH 13IN | DUSTING BRUSH | EA | |
| 7920002924370 | 2 | BROOM UPRIGHT FIBER | BROOM FOR SWEEPING | EA | |
| 8105008377757 | 1 | BAG,PLASTIC | SMALL PLASTIC BAGS | BX | FOR PERSONAL EFFECTS |
| 8105012213239 | 1 | BAG PLASTIC 60 X 36 200S | LARGE PLASTIC BAGS | BX | |
| 8415002817814 | 10 | APRON TOX AGT PROTECT M-2 | MEDIUM M2 APRONS | EA | |
| 8415002817815 | 10 | APRON TOX AGT PROTECT M-2 | LARGE M2 APRON | EA | |
| 4230012761905 | 1 | DECONTAMINATING KIT, SKIN | M291 KIT, REPLACEMENT FOR M258A1 | BX | 6 PK/KT, 20 KT/BOX |

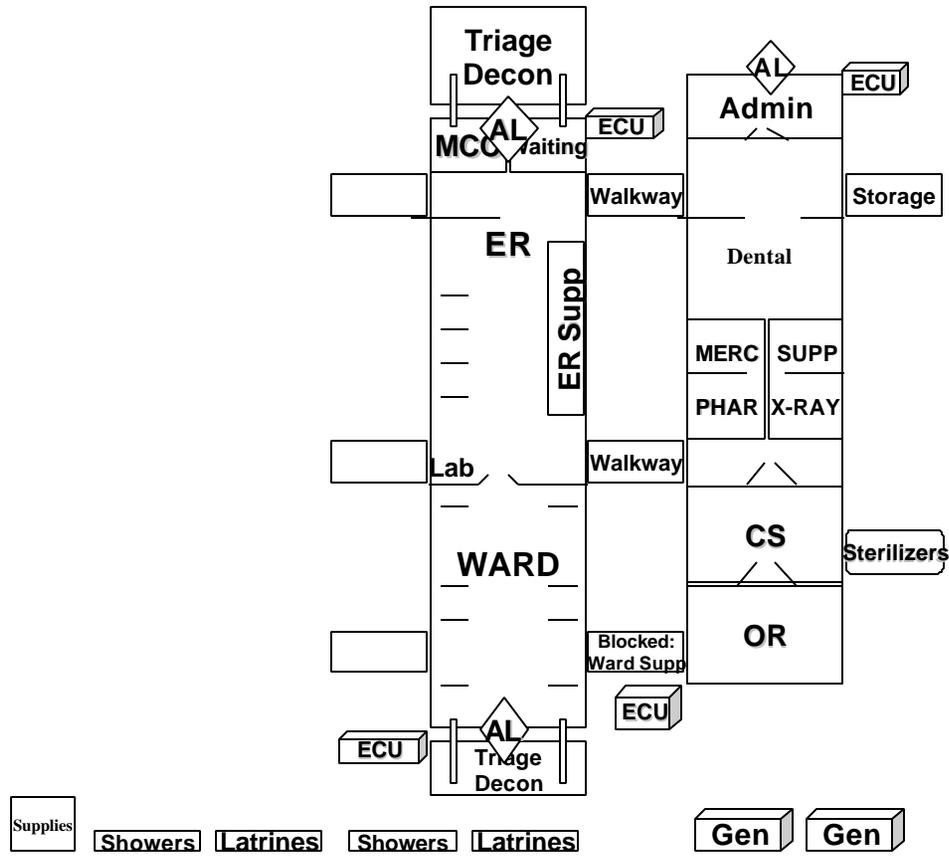
| | | | | |
|---------------|-----------------------------|--|----|---|
| 9905013464716 | 2 SIGN KIT, CONTAMINANT | NBC MARKING KIT | EA | A NICE ITEM |
| 4230013578456 | 1 DECONTAMINATION KIT, INDI | M295 LARGE DECON KIT | BX | 4 PK/KT, 80 KT/BOX |
| 6665013427747 | 0 ADM-300A (KIT C) | ADM 300 RADIAC SET, REPLACES ALL OTHERS | EA | COORD WITH BIO/REQUEST TO BORROW CAMS AND RECEIVE TRNG |
| 6665800993001 | 0 ADM 300A- (KIT E) | ADM 300 RADIAC SET, VERFICATION KIT | EA | COORD WITH BIO/REQUEST TO BORROW CAMS AND RECEIVE TRNG |

NOTES:

1. Ground Crew Ensembles/MCU-2P Masks/Boots/Gloves/etc. should be issued to each member from your base IEU.
2. To conserve resources tentage is not necessary to conduct the training, however, if tentage is available recommend using it to enhance realism of training.
3. Old GCEs, uniforms, etc., will be needed to dress-out your training casualties.

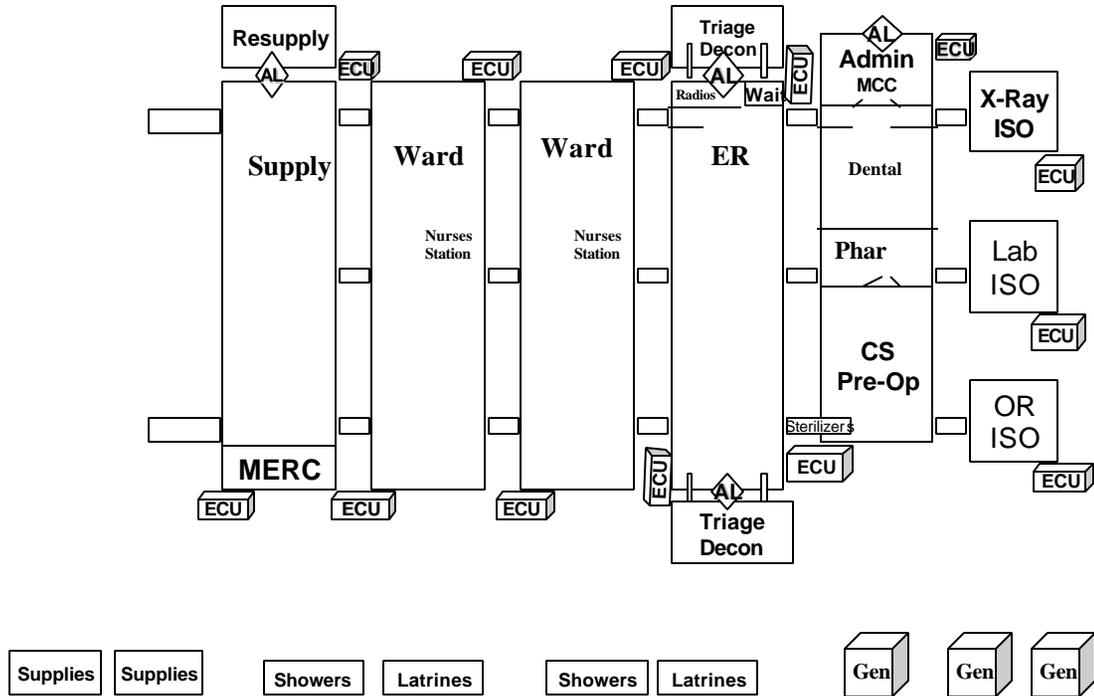
APPENDIX B2: MTF AND DECON SITE PLACEMENT

CORONET BANDAGE CHATH



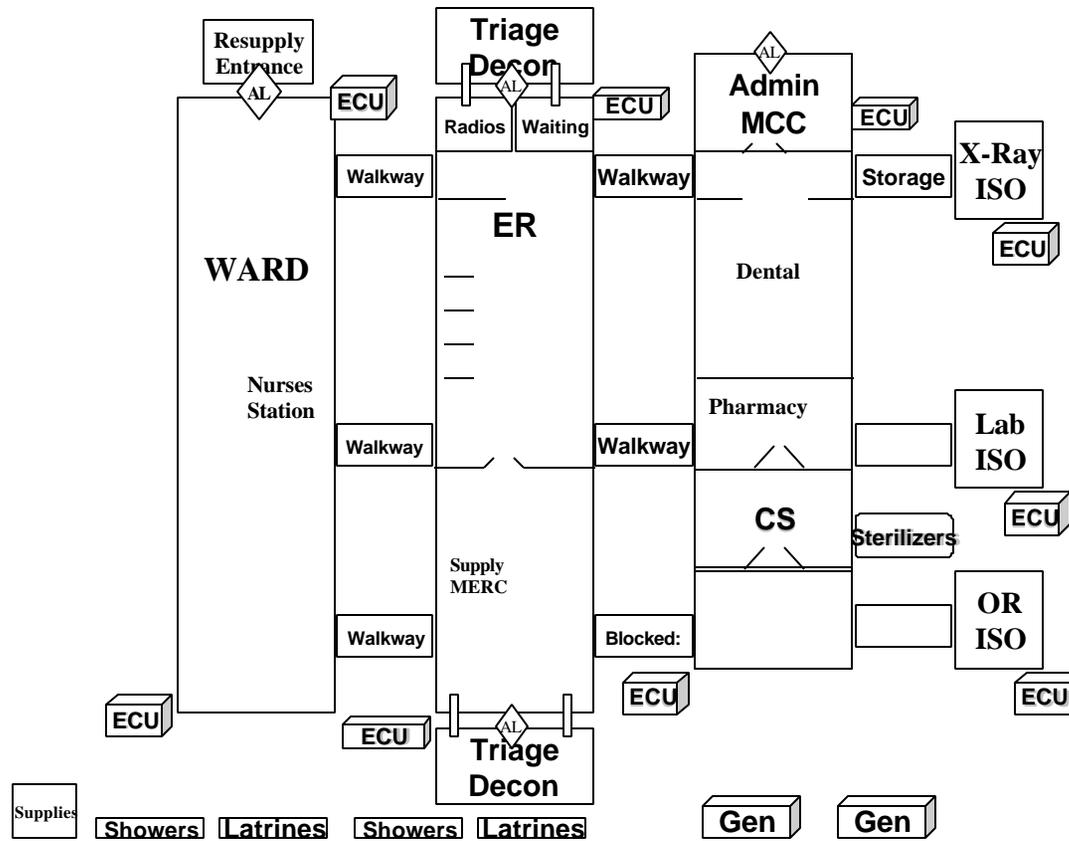
APPENDIX B2: MTF AND DECON SITE PLACEMENT

50 BED CHATH



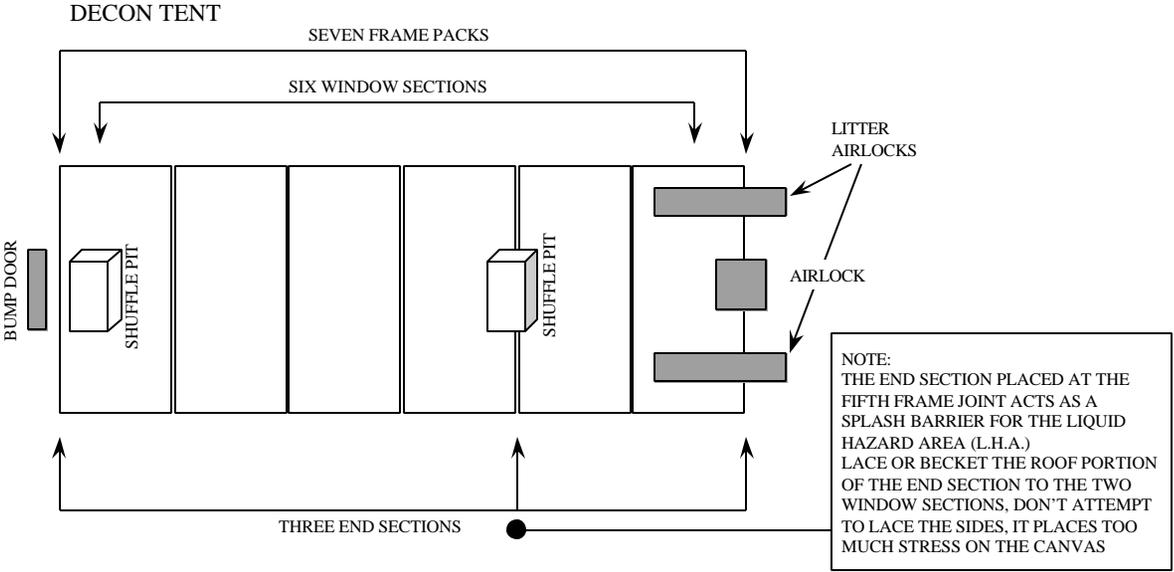
APPENDIX B2: MTF AND DECON SITE PLACEMENT

25 BED CHATH



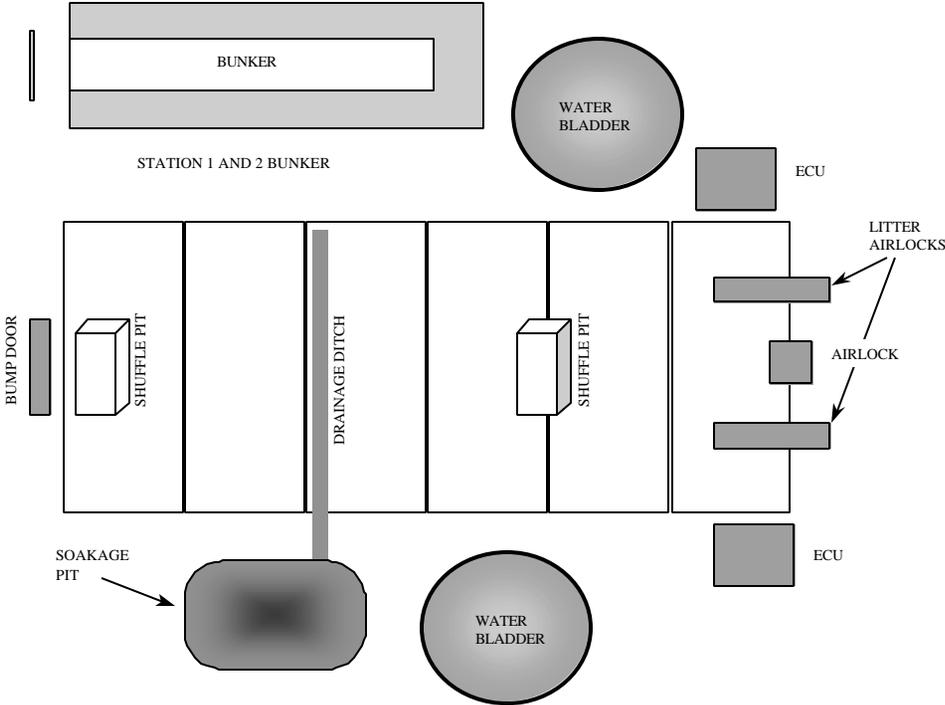
APPENDIX B3: DECON FACILITY LAYOUT

DECON TENT SET UP:
TENTAGE AND FRAMES

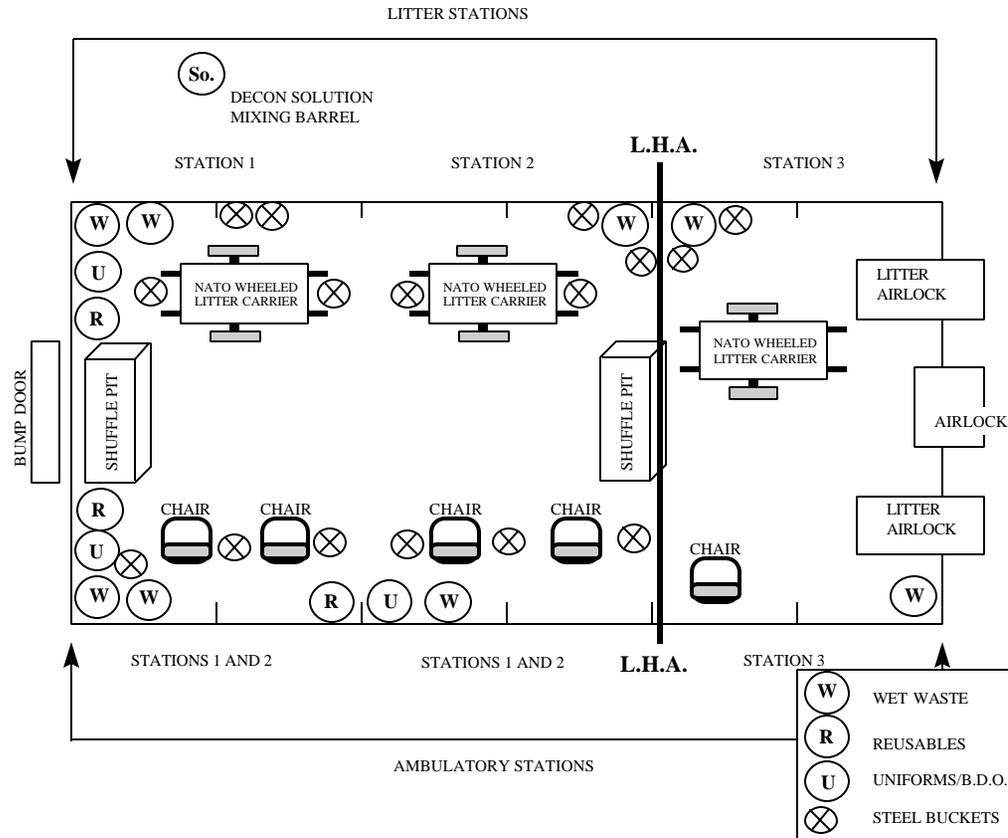


APPENDIX B3: DECON FACILITY LAYOUT

EXTERNAL FACILITY LAYOUT CHATH



APPENDIX B3: INTERNAL DECON FACILITY LAYOUT CHATH



ANNEX C
DECONTAMINATION OF FOOD

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1. PURPOSE:

The PH Team advises commanders and Responsible Property Officers on the protection, decontamination and reclamation of food exposed to NBC agents. The PH Chief (The Public Health Officer, or ranking PH NCO if an officer is not available), will supervise food decontamination efforts.

2. PROCEDURES:

The PH Chief will attempt to determine the extent of NBC contamination of food stocks after a confirmed NBC attack. Each storage location will be evaluated and appropriate authorities advised. Manpower required for decontamination and reclamation tasks is the responsibility of the Responsible Property Officer. To ensure foods are correctly decontaminated, the PH Chief will provide a trained PH member to instruct and supervise these operations.

3. GENERAL:

3.1. Protecting foods from contamination is easier than decontaminating them. Where NBC agent may be encountered, Public Health Team Chiefs should advise Responsible Property Officers of recommended pre-attack protective measures, such as covering foods in storage with impermeable material.

3.2. All food stores should be evaluated for contamination after an NBC agent attack. Manpower required for decontamination and reclamation tasks is the responsibility of the Responsible Property Officer. To ensure foods are correctly decontaminated, the Public Health Team Chief will provide a trained member to instruct and supervise these operations. The following information should be promptly collected by the Public Health Team Chief (if not already known from past food vulnerability studies):

- NBC agent and its physical state when employed.
- Storage locations, extent of building damage, type and quantity of food in each building, the Responsible Property Officer and the on-site point of contact.

3.3. All Responsible Property Officers should be advised, using the chain of command, that suspect food supplies should not be issued or destroyed until evaluated. Where storage locations are numerous, the Public Health Team Chief may need to prioritize inspections based on need for the food stored there and the probability of contamination.

3.4. Inspectors must address food sanitation and perishability issues (such as refrigeration failures, blast damage, etc.) while evaluating food for NBC agent contamination.

3.5. Decontamination operations include:

- Inspect/detect and identify NBC agent.
- Segregate contaminated from clean (plus movement of clean stocks to clean storage areas).
- Decontaminate (with frequent monitoring of personnel to prevent cross contamination).
- Re-monitor (including disposal of grossly contaminated stocks).
- Provide use/storage recommendations.
- Move decontaminated stocks to clean storage/use areas (while preventing recontamination during transfer).

4. NUCLEAR AGENTS:

4.1. General: The effects of a nuclear weapon detonation on food include neutron induced activity, residual radiation contamination, and thermal and blast damage.

4.2. Neutrons passing through a food or container can activate stable atomic nuclei causing them to become radioactive. Practically all of these neutrons are produced within a fraction of a second after detonation and may affect stores within a short distance (less than one mile) of ground zero. The amount of undamaged and reclaimable food remaining within this area will probably be minimal because of the overlapping effect of thermal and blast damage. Neutron activity is chiefly significant in foods with high salt content (such as crackers) or high phosphorus content (such as eggs, dairy products, sea foods), and glass containers. This type of radioactivity cannot be removed by conventional means. Undamaged food recovered after 3-4 days from such areas of complete destruction may be pressed into emergency use. Undamaged food located more than one mile from ground zero would probably be free of neutron induced activity and be safe for immediate consumption. The radioactivity of glass exposed to prompt neutrons by a weapon of nominal yield (20 - 50 kiloton) may emit strong gamma activity on the order of 400 mR/hr due to Na²⁴. However, due to its short half life of 15 hours, activity may be reduced to 1% within four days. This radioactivity of glass is not conveyed to its contents. Very active containers may well contain food that is entirely safe. The container can be brushed, wiped or washed to remove fallout. The contents can then be removed and monitored.

4.3. Fallout represents the greatest radiological threat to food supplies. Although the radioactivity of fallout cannot be destroyed, the material itself can be removed to prevent ingestion.

4.4. Evaluation: It's unlikely that food stored within an undamaged building would be sufficiently contaminated by fallout to be dangerous to eat. Most packaged (undamaged) food will be completely safe for consumption. The ADM 300 RADIAC set can be used to monitor foods and food containers for the presence and levels of contamination.

4.5. Decontamination: Decay and removal are the principle means available. In dire emergencies (threat of starvation), contaminated food may be mixed with uncontaminated food to dilute its effect.

- Contaminated package surfaces should be washed or moist-wiped with a mild detergent (or brushed) then re-monitored.

- If the outer container cannot be decontaminated, remove and discard the outer container (if this will not significantly affect the keeping quality of the food). For example, eggs can be removed from a contaminated carton and be stored in a clean container. Fiberboard cereal boxes can be discarded and the inner package cleaned and stored. Where keeping quality will be effected by removal of the outer package, consider immediate use of the contents. The contents should be monitored after removal from the outer container and before consumption. Where immediate use is not practicable, consider setting the product aside until radiation levels are reduced by decay.

- Fresh fruits and vegetables can be washed with a mild detergent then peeled. The outer leaves of cabbage, lettuce, etc. should be removed and the remainder washed with a mild detergent.

- Carcass meats may require trimming (1/4 to 1 inch).

4.6. Heat (cooking, boiling, etc.) will not eliminate radioactivity.

4.7. Animals as a Food Source: Only a limited number of radioisotopes are of concern because small amounts are produced, many have a short half life, and most aren't incorporated into the food chain. Food animals become contaminated principally through contaminated feed/pastureland. Don't drink milk produced after the detonation, regardless of its' physical state (canned, dried, fresh, etc.). Don't consume the external surfaces or internal organs of food animals.

5. BIOLOGICAL AGENTS:

5.1. General: Only general information is given below because of the wide range of potential biological warfare agents. If the agent can be preemptively identified, agent-specific information in AFM 355-6 and Control of Communicable Diseases in Man can be used to reach an informed decision about managing contaminated food supplies. Biological toxins employed as weapons may render all potentially contaminated food inedible. Current intelligence must be consulted when use of these agents is suspected.

5.2. Decontamination:

5.2.1. Impermeable Containers:

- Food stores in containers resistant to the passage of biological agents can be rendered safe by decontaminating the containers and exercising caution when opening them. These sealed containers made of metal, plastic, glass, porcelain, or almost any dust proof container can be decontaminated by immersion in a hypochlorite solution containing 2% available chlorine (1 part household bleach to 2 parts water, or 5 oz. of 70% calcium hypochlorite per gallon of water). Boiling these containers in soapy water for 15 minutes followed by a clear water rinse will also be effective. Hands must be free from contamination during the entire operation.

- Food packages that do not lend themselves to immersion can be wiped with hypochlorite solution and the contents cooked before ingestion.

5.2.2. Permeable Packages and Unpackaged Food: Decontamination methods include surface disinfection by immersion in a 2% hypochlorite solution for one minute, or thorough heating of all parts of the food (at or near boiling point for 15 minutes). These methods may not provide adequate decontamination if the agent is a heat stable toxin. Permeable packages and unpackaged food known to be contaminated with a heat stable toxin should be discarded.

5.3. Animals as a Food Source: Infected animals may serve as a source of the agent in some cases. If the agent can be presumptively identified, agent-specific information in AFM 355-6 and Control of Communicable Diseases in Man can be used to reach an informed decision about the handling of potentially infective animals.

6. CHEMICAL AGENTS:

6.1. General: The nature of the agent is perhaps the most important single factor in deciding whether or not contaminated food can be salvaged. Some agents, such as screening smokes and phosgene, exert only a temporary effect on food, although taste may be affected. Others, such as liquid mustards and vesicants, usually make reclamation impracticable. The type and extent of contamination, the availability of replacement supplies, and the availability of decontamination resources will dictate whether or not reclamation is worthwhile.

6.2. Evaluation: Determine which stocks may have been contaminated. Closed buildings afford good protection from liquids but may not exclude vapors. Closed refrigerators can protect against liquids and greatly reduce vapor contamination. The protective effect of packages against vapors can be greatly increased when foods are stored in layers or stacks. After deciding which stocks may have been contaminated, separate them into three groups:

6.2.1. Group I: Packaged food exposed to vapors only, where vapors are not expected to have penetrated the packaging. Such packaging includes airtight glass containers, metal cans, sealed wooden barrels, and air-resistant containers of the following materials: Waxed paper, metal foil, sealed wood, fiberboard and cellophane.

6.2.2. Group II: Packaged foods exposed to liquid agents.

6.2.3. Group III: Unpackaged food and food whose packaging may not have prevented vapor penetration.

6.3. Decontamination:

6.3.1. Group I: Decontaminate the containers using the following guide.

NOTE: Explanation of agent codes can be found in the Medical Management of Chemical Casualties Handbook.

| Agent | Food Container Decontamination |
|---|--|
| AC, CG, CK, CX, DP, GA, GS, PS, SA. | Wipe or rinse with 2% sodium bicarbonate or 5% chlorine solution. |
| ED, GD, HD, HL, HN, HT, L, MD, PD, VX | Boil for 30 minutes, or soak 2 hrs in either 5% sodium bicarbonate or 10% chlorine solution. |

6.3.2. Group II Foods: Remove and dispose of the contaminated package. If the inner package or food is contaminated with liquid agent, discard it. If not, treat it as a Group III food.

6.3.3. Group III Foods:

6.3.3.1. High moisture, resistant covering, or crystalline structure. (fresh fruit, vegetables, gelatin, eggs, sugar, salt).

| Agent | Food Container Decontamination |
|-------------------------------------|---|
| CG, CX, DP, PS, AC | 24 hr aeration, or soak for 2 hrs in 2% sodium bicarbonate or 5% chlorine solution. Peel or pare as desired. |
| HD, HN, HT, VX, GA, GX | Boil for 30 minutes in 2% sodium bicarbonate, or 5% chlorine, or rinse 5 times with sodium bicarbonate then rinse twice with clean water. |
| HL, PD, ED, MD, SA, CK, L, GD | Destroy. |

6.3.3.2. Low moisture content, low to average fat, or non-crystalline structure (dried fruit and vegetables, cereals, coffee, tea).

| Agent | Food Container Decontamination |
|---------------------------|---|
| CG, DP, AC, PS, CX | 24 hr aeration. |
| HD, HN, HT, VX, GA, GS | Soak 30 minutes in 2% sodium bicarbonate solution prior to cooking. |

HL, PD, ED, Destroy.
MD, SA, CK,
L, GD

6.3.3.3. High fat content (butter, lard, cheese, vegetable oil, fatty meats and fish).

| Agent | Food Container Decontamination |
|--------------|---------------------------------------|
|--------------|---------------------------------------|

| | |
|----------------------------------|--|
| CG, DP, PS, AC, CX, GA, GB | Wash in 2% sodium bicarbonate and air dry. |
|----------------------------------|--|

| | |
|--|----------|
| MD, HN, HT, HL, GD, VX, CK, SA, PD, MD, ED, L | Destroy. |
|--|----------|

6.4. Live animals as a food source: Animals contaminated with liquid or vapor chemical warfare agents which are slaughtered in the preliminary stages of poisoning (before the full effects of the exposure are apparent) may be safely used as a food source. This is true even of those exposed to the arsenicals, since the edible tissue will contain amounts too small to be toxic. All external surfaces and internal organs should be discarded, and the meat thoroughly cooked.